

# A614 / A6097 Major Road Network Improvement Scheme

Traffic & Economic Assessment Report

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## Quality information

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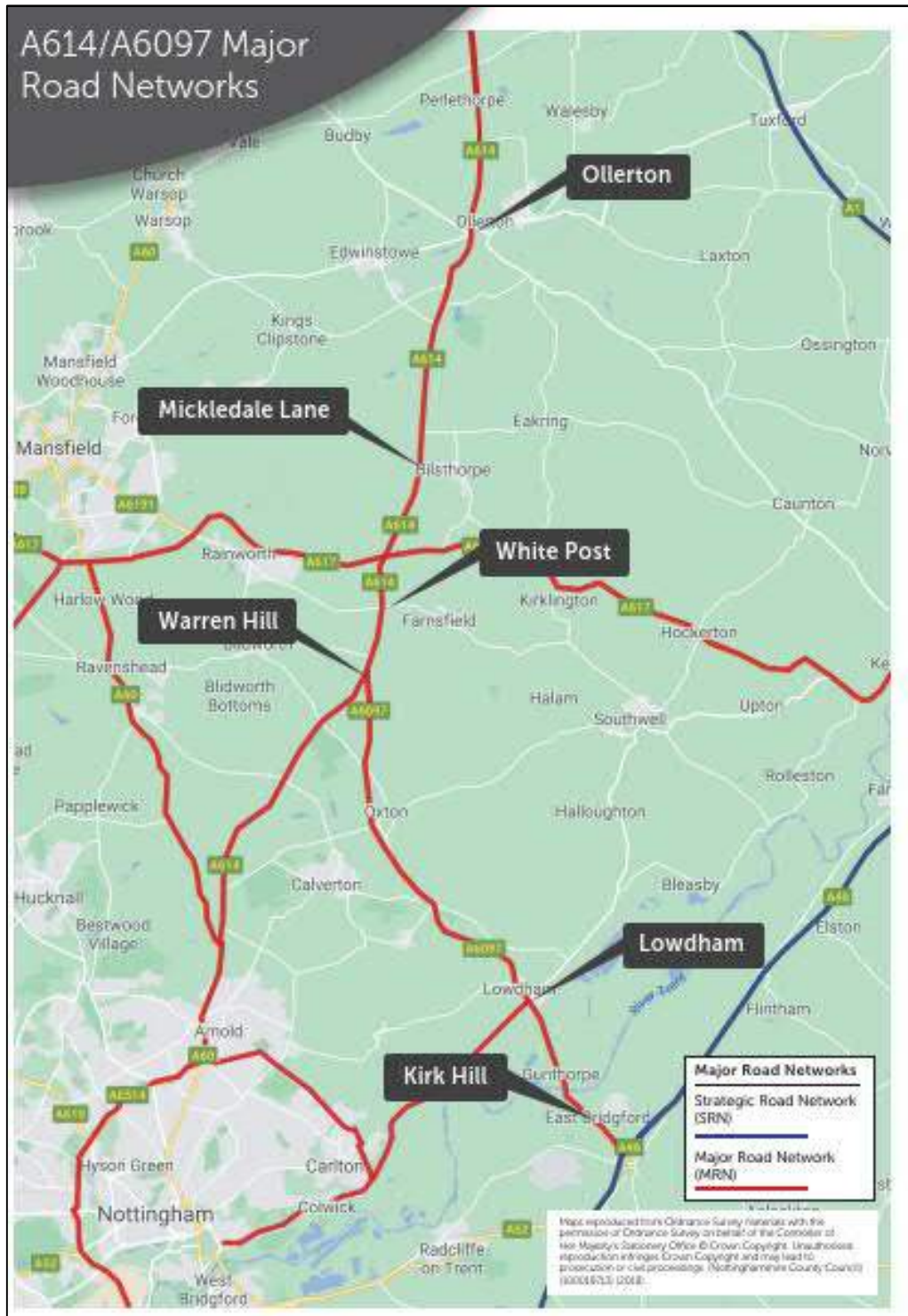
# 1. Introduction

1.1 Nottinghamshire County Council (NCC) is promoting junction improvements at a series of locations on the A614 – A6097 corridor as a single scheme package. These junctions are:

- A614 / A616 / A6075 roundabout (hereafter referred to as the Ollerton roundabout);
- A614 / Eakring Road / Deerdale Lane crossroads (hereafter referred to as Deerdale Lane);
- A614 / Mickledale Lane crossroads (hereafter referred to as Mickledale Lane);
- A614 / Mansfield Road roundabout (hereafter referred to as the White Post roundabout);
- A614 / A6097 junction priority junction (hereafter referred to as the Warren Hill junction); and
- A6097 / A612 Nottingham Road / Southwell Road roundabout (hereafter referred to as the Lowdham Roundabout).
- A6097 / Kirk Hill // East Bridgford Road (hereafter referred to as Kirk Hill Junction).

1.2 The locations of the junctions are shown in Figure 1-1.

Figure 1-1: Junction Locations



- 1.3 The options considered, scheme development and design considerations are presented in the Options Assessment Report (OAR).
- 1.4 This report sets out the traffic forecasting calculations, and the economic assessment for the scheme. It calculates both the value of benefits and costs of the scheme and presents an overall *Benefit to Cost* ratio.
- 1.5 The outputs from the work detailed in this report will be used to support an application for funding from the Department for Transport's (DfT) Major Road Network (MRN) programme.



## 2. Traffic Demand and Junction Modelling

### Introduction

2.1 The relationship between the appraisal process and decision-making process is set out in the Department for Transport's Transport Analysis Guidance (TAG).

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/712693/tag-tpm-guidance-senior-responsible-officer-may-18.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/712693/tag-tpm-guidance-senior-responsible-officer-may-18.pdf)

2.2 The TAG guidance identifies three stages of appraisal:

- Stage 1 – Option Development;
- Stage 2 – Further Appraisal
- Stage 3 – Implementation and Benefits Management, Monitoring and Evaluation

2.3 The six junctions identified as part of the improvement package are in Stage 1 of the appraisal process.

2.4 There are 3 approaches that could be taken to determining the economic assessment of this scheme:

- Using a macroscopic model such as SATURN; or
- Using a microsimulation model; or
- Using the outputs from isolated junction models.

2.5 No suitable existing macro or microscopic model is available for the study area. The models that do cover the geographic region are strategic in nature and are not suitable for the assessment of modest junction improvements with local connections. Highways England's Midlands Regional Transport Model (MRTM) covers the geographic area of the scheme and Nottingham City Council's East Midlands Gateway Model (EMGM) covers the A614 between A614/A617 Lockwell Hill junction and A6097 but excludes the Deerdale Lane, Mickledale Lane and Ollerton junctions. Both models would require significant work to disaggregate the coarse zoning systems around the scheme to enable suitable representation of peak hour turning movements at the scheme junctions to provide robust assessment. Both models would also require extensive network updates to represent the local highway network and loading points. The model updates would require a new Base Year calibration and validation against TAG criteria. Local development assumptions in the area surrounding the scheme would need to be incorporated into the bespoke forecasting procedures.

2.6 The work identified to update the MRTM and EMGM is not considered proportionate and could not be delivered within the delivery timeframe.

2.7 Whilst the distance between the northern and southern most junctions is 14.5 miles, there is little route choice involved for which macroscopic models are most often deployed. Route choice comparisons are presented in Appendix A. The development of a new macroscopic model would require the collection of new trip demand data at a disaggregate level to ensure local trip patterns are reflected appropriately. The development of a new macroscopic model is not considered proportional to the size of the scheme, in accordance with TAG Unit M1, sections 2.3 to 2.4.

2.8 Similarly, the development of a new 14.5-mile micro-simulation corridor model, is not considered to be proportionate.

2.9 TAG unit M2 – Variable Demand Modelling, May 2019, section 2.2 discusses the requirement for Variable Demand Modelling. Paragraph 2.2.1 states:

*It may be acceptable to limit the assessment of a scheme to a fixed demand assessment if the following criteria are satisfied:*

- *The scheme is quite modest either spatially or financially and is also quite modest in terms of its effect on travel costs. Schemes with a capital cost of less than £5 million can generally be considered as modest; or the following two points:*
  - *There is no congestion or crowding on the network in the forecast year (10 to 15 years after opening), in the absence of the scheme; and*
  - *The scheme will have no appreciable effect on travel choices (e.g. mode choice or distribution) in the corridor(s) containing the scheme.*

2.10 TAG unit M2 – Variable Demand Modelling, paragraph 2.2.4 notes that:

*In order to establish a case for omitting variable demand in the model, preliminary quantitative estimates of the potential effects of variable demand on both traffic levels and benefits should be made.*

2.11 TAG unit M2 – Variable Demand Modelling, paragraph 2.2.5 also notes that:

*An existing variable demand model of the area should be used for the purpose of testing if one is available.*

2.12 Of the three criteria identified in TAG M2, paragraph 2.2.1, the cost of the combined improvement package is well in excess of £5m. There is predicted to be journey time delays at several of the scheme junctions in the forecast scenarios. However, the scheme is unlikely to have appreciable effect on travel choice given the limited public transport options along the corridor and the lack of route choice (detailed in Appendix A). The preliminary estimates of the potential effects of variable demand set out TAG M2, paragraphs 2.2.4 and 2.2.5 is dependent on a suitable variable demand model of the area. As discussed in paragraph 2.5 above, the two available models that cover the geographic area of the scheme do not have a suitable level of detail to reflect the potential variable demand effects resulting from the scheme. To upgrade the existing models to a suitable standard would require significant work as set out in paragraph 2.5 above. The use of a fixed trip assessment is considered the most appropriate assessment approach, particularly given the lack of a suitable macro transport model.

2.13 Of the six junctions to be improved, the closest pair is 1km apart. The distance between the scheme junctions mean that the delay at each junction is considered independent of the adjacent junction and given, the lack of alternative route choice, the preferred and proportionate methodology would be to assess each junction in isolation before combining the costs and benefits to present an overall package of improvements.

2.14 A limitation of this approach is that the full trips lengths are not modelled within the isolated junction models meaning the economic assessment may overestimate benefits relating to the change in fuel consumption (vehicle operating costs, greenhouse gases and indirect taxes). This is discussed in detail in Section 3 in more detail. So as not to overestimate, assessments based on the change in fuel consumption have been excluded from the economic appraisal, providing a robust assessment.

2.15 The use of isolated junction models and a fixed trip assessment will not capture the effects of rerouting but as noted above, there is limited route choice along the corridor (presented in Appendix A) meaning the effects of reassignment in both the Do Minimum and Do Something scenarios is expected to be minimal.

2.16 To provide additional assurance to the decision to use a fixed trip assessment, sensitivity testing was undertaken using the Midlands Connect Highway Model (MCHM). This work, presented in Appendix B, uses MCHM to look at potential Variable Demand and reassignment impacts, noting the model does not represent the A614/A6097 in sufficient detail to support detailed scheme appraisal (The MCHM contains representation of only three of the scheme junctions).

2.17 The work concludes that:

- Fixed demand assignment testing of the improvements produces minor re-routing responses along the scheme corridor, principally due to the lack of other routing options to cross the River Trent.

- Increases in demand along the scheme corridor arising from the fixed demand assignments are small, but most prominent on the A6097 Oxton Bypass.
- VDM elicits minimal change in either the matrices or the assignment, when the pre and post VDM matrices are assigned and the model outputs compared.
- The reassignment and VDM impacts are not considered material in either the economic or environmental appraisal. As such, a fixed-trip assessment is considered appropriate.

2.18 The approach to scheme appraisal has therefore been to:

- Confirm the feasibility of options at each junction location via initial assessment using isolated junction modelling (i.e. ARCADY, PICADY and LINSIG) – reported in the Option Assessment Report;
- Prepare indicative design drawings of the preferred option – reported in the Option Assessment Report;
- Use the indicative design drawings to prepare a construction cost estimate (including an allowance for land, utilities and services);
- Apply local future growth to existing Manual Classified Turning Counts and Queue Surveys at each of the scheme junctions to produce an Opening Year and Design Year traffic forecasts;
- Use isolated junction models (i.e. ARCADY, PICADY and LINSIG) to identify:
  - Baseline delays;
  - Future years Do Minimum delays (ie without scheme);
  - Future years Do Something (i.e. with option delays)
- Monetise delays from the isolated junction models using the values of time in the WebTAG databook and expand over a 60 year assessment period using the DfT's latest TUBA software (version 1.9.12, January 2019).
- Use existing accident records to inform a COBALT accident appraisal at each junction.
- The Present Value of Benefits and Present Value of Costs (assuming a 2010 base year) has been calculated to identify the scheme BCR. Whilst each junction has been assessed individually, the PVB and PVC from each junction have been combined to present an overall economic appraisal of the A614/A6097 Improvements.

2.19 This approach was discussed with the Department for Transport in a project inception meeting held on 14<sup>th</sup> November 2018 and in subsequent meetings and correspondence throughout 2020.

# Baseline Traffic Conditions

## Traffic Survey Data

2.20 According to the document, *How the National Road Traffic Estimates are Made* (DfT, 2007), traffic counts are normally undertaken during the 'neutral' months of March, April, May, June, September and October (but outside of school holidays). This is to ensure seasonal impacts are minimised.

2.21 The Manual Classified Counts (MCCs) undertaken to support this study were undertaken on the following dates:

- Ollerton Roundabout – 29th June 2017;
- Deerdale Lane – 27th September 2017;
- Mickledale Lane - 27th September 2017;
- White Post – 11th October 2018;
- Warren Hill – 20th September 2018; and
- Lowdham – Thursday 7th June 2018.
- Kirk Hill – Wednesday 9<sup>th</sup> October 2019

2.22 For the MCCs, all possible traffic movements were recorded in 15 minutes intervals, between the times of 07:00 – 19:00hrs. The following classifications were used:

- PC – Pedal cycles using the road; this does not include cyclists using the pavement.
- MC – Two wheeled motorcycles;
- Car – Including taxis, state cars, 'people carriers' and other passenger vehicles (for example, minibuses and camper vans) with a gross vehicle weight of less than 3.5 tonnes, normally ones which can accommodate not more than 15 seats. Three- wheeled cars, motor invalid carriages, Land Rovers, Range Rovers and Jeeps and smaller ambulances are included. Cars towing caravans or trailers are counted as one vehicle;
- LGV – Light Goods Vehicle. Includes all goods vehicles up to 3.5 tonnes gross vehicle weight (goods vehicles over 3.5 tonnes have sideguards fitted between axles), including those towing a trailer or caravan. This includes all car delivery vans and those of the next larger carrying capacity such as transit vans. Included here are small pickup vans, three-wheeled goods vehicles, milk floats and pedestrian controlled motor vehicles. Most of this group are delivery vans of one type or another;
- OGV1 – Other Goods Vehicles Category 1. Includes all rigid vehicles over 3.5 tonnes gross vehicle weight with two or three axles. Includes larger ambulances, tractors (without trailers), road rollers for tarmac pressing, box vans and similar large vans. A two or three axle motor tractive without a trailer is also included;
- OGV2 – Other Goods Vehicles Category 2. Includes all rigid vehicles with four or more axles and all articulated vehicles. Also included in this class are OGV1 goods vehicles towing a caravan or trailer;
- PSV – Buses and Coaches. Includes all public service vehicles and works buses with a gross vehicle weight of 3.5 tonnes or more, usually vehicles with more than 16 seats.

2.23 Queue length surveys were also conducted. The queue length data was collected on the following dates:

- Ollerton Roundabout – 29th June 2017;
- Deerdale Lane – 27th September 2017;
- Mickledale Lane - 27th September 2017;

- White Post – 12th December 2018;
- Warren Hill – 20th September 2018; and
- Lowdham – Thursday 13th December 2018.
- Kirk Hill – 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> October 2019

2.24 The length of queues was recorded at each junction between 07:00 – 10:00hrs & 16:00 – 19:00hrs, every five minutes.

2.25 Table 2.1 to Table 2.6 present the observed base year MCC data and a summary of the queue data. The validity and appropriateness of the MCC data and queue surveys was reviewed against long term permanent automatic traffic counts which are discussed in more detail below. Queue surveys were logic checked against live and 'typical' traffic sources (Google Traffic), as well as Trafficmaster delay plots (presented in Appendix C) to ensure the queue data was representative. In addition, the project team have a thorough local knowledge of the A614/A6097 corridor having delivered multiple improvements along the route in recent years and were therefore able to apply logic checks to the data used in the assessment.

**Table 2.1: Ollerton – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue	Inflow	Average Queue*	Max Queue*
A614 (N)	495	17	44	379	-	-	511	17	40
A616 (E)	751	5	11	690	-	-	1094	60	80
A614 (S)	863	19	43	629	-	-	699	85	96
A6075	396	15	34	287	-	-	349	6	13
A616 (W)	361	14	48	223	-	-	297	4	17
<b>Total</b>	<b>2,866</b>	<b>70</b>	<b>180</b>	<b>2,207</b>	<b>-</b>	<b>-</b>	<b>2,950</b>	<b>171</b>	<b>246</b>

**Table 2.2: Deerdale Lane – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue
A614 (N)	977	0	0	589	0	0	869	0	0
Deerdale lane (E)	107	8	13	101	8	19	132	10	18
A614 (S)	874	5	8	594	3	9	888	4	12
Eakring Road	8	0	0	9	0	0	8	0	0
<b>Total</b>	<b>1,965</b>	<b>13</b>	<b>21</b>	<b>1,293</b>	<b>11</b>	<b>28</b>	<b>1,896</b>	<b>14</b>	<b>30</b>

**Table 2.3: Mickledale Lane – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue
A614 (N)	957	0	0	595	0	0	885	0	0
Mickledale Lane	157	13	19	114	9	17	146	11	20
A614 (S)	898	4	8	635	5	12	989	10	17
Inkersall Lane	6	0	0	9	0	0	3	0	0
<b>Total</b>	<b>2,018</b>	<b>17</b>	<b>27</b>	<b>1,353</b>	<b>14</b>	<b>29</b>	<b>2,023</b>	<b>21</b>	<b>37</b>

**Table 2.4: White Post – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue*	Max Queue*	Inflow	Average Queue	Max Queue
A614 (N)	910	63	157	604	9	43	877	14	43
Mansfield Road (E)	209	2	7	153	0	7	229	1	9
A614 (S)	996	20	43	608	2	21	1,060	17	38
Mansfield Road (W)	295	3	9	133	1	7	155	4	23
<b>Total</b>	<b>2,410</b>	<b>88</b>	<b>216</b>	<b>1,498</b>	<b>12</b>	<b>78</b>	<b>2,321</b>	<b>37</b>	<b>113</b>

\*Note: Only queue data for 1000hrs – 1200hrs was available for the interpeak period.

**Table 2.5: Warren Hill – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue
A614 (N)	1,136	0	0	509	0	0	747	0	0
A6097	382	2	8	237	1	3	449	3	16
A614 (S)	516	0	0	309	0	0	625	0	0
<b>Total</b>	<b>2,034</b>	<b>2</b>	<b>8</b>	<b>1,055</b>	<b>1</b>	<b>3</b>	<b>1,821</b>	<b>3</b>	<b>16</b>

**Table 2.6: Lowdham – Inflow by approach arm (pcu/hr) and queues (pcu)**

Approach arm	Base Year – AM			Base Year - IP			Base Year - PM		
	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue	Inflow	Average Queue	Max Queue
A6097 (W)	1,227	68	107	635	10	23	894	9	22
Southwell Road	405	61	122	341	3	16	426	5	19
A6097 (E)	1,131	27	52	796	13	80	1,346	14	50
A612	661	14	78	559	9	78	820	189	205
<b>Total</b>	<b>3,424</b>	<b>169</b>	<b>359</b>	<b>2,331</b>	<b>34</b>	<b>197</b>	<b>3,485</b>	<b>217</b>	<b>297</b>

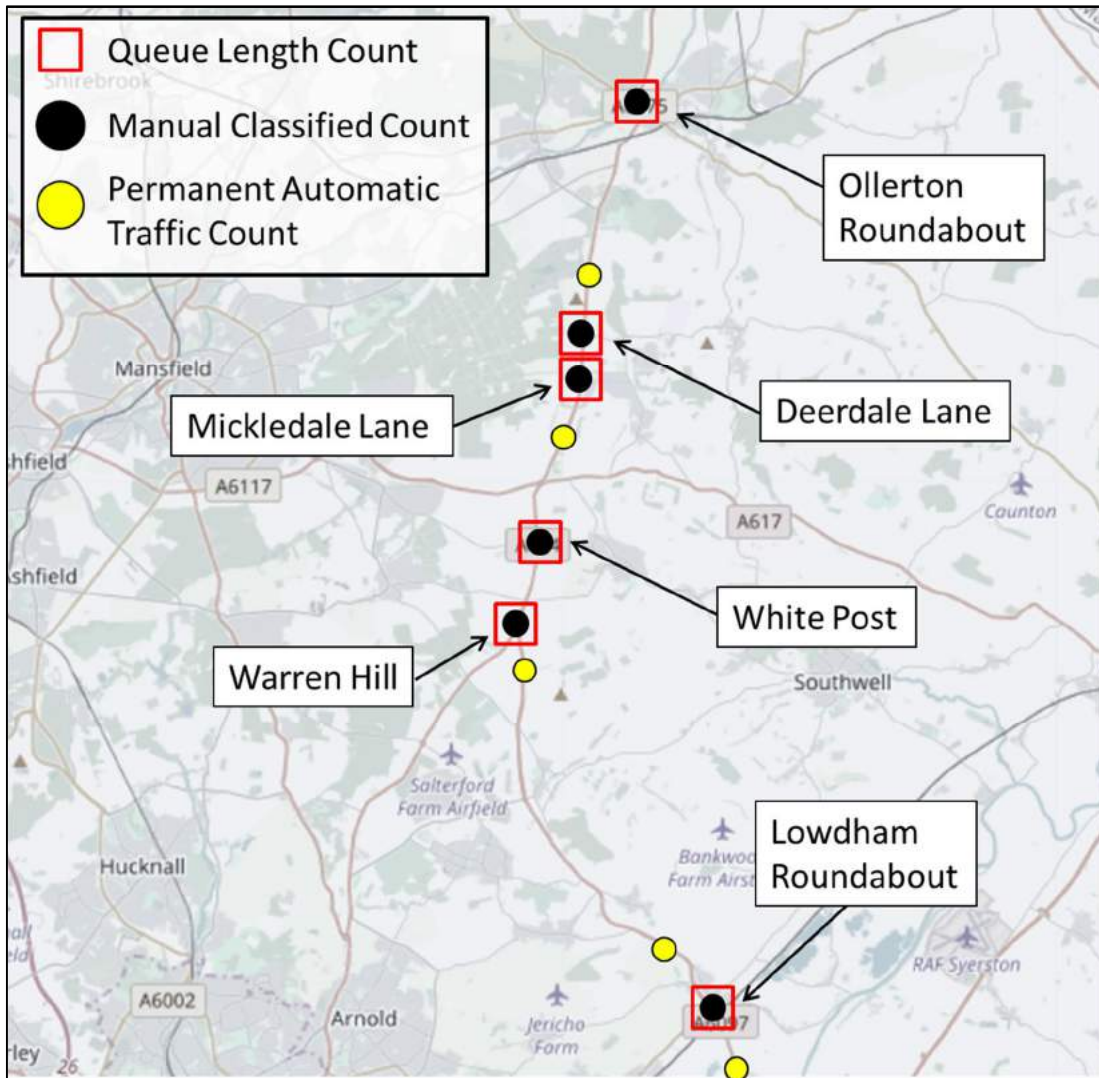
2.26 Baseline turning movements at the scheme junctions, highlighting the major movements, are presented in Appendix D. This data is provided by vehicle type, direction and time of day.

2.27 In addition, Automatic Traffic Count (ATC) data was also available from permanent count locations on the A614 / A6097. The following count locations were examined within the study:

- A614 Bilsthorpe (N) – Site ID: 000030306363
- A614 Bilsthorpe (S) – Site ID: 000030306359
- A6097 Warren Hill (S) – Site ID: 000035206253
- A6097 Lowdham (N) – Site ID: 000030806547
- A6097 Lowdham (S) – Site ID: 000030006745

2.28 Figure 2-1 locates all count site locations used within the study.

Figure 2-1: Count Site Locations



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2.29 For the purpose of the study, all raw traffic count data has been converted into Passenger Car Units (PCUs), to represent the impact of the particular mode on the highway network in comparison to a single car. The following PCU factors have been used:

- Bicycle: 0.2
- Motorcycle: 0.4
- Car: 1.0
- Light Goods Vehicle (LGV): 1.0
- Single-Unit Trucks / Medium Goods Vehicle (MGV): 1.5
- Public Service Vehicles (including Buses): 2.0
- Articulated Trucks / Heavy Goods vehicle (HGV): 2.3

## Peak Hours

2.30 The manual classified count (MCC) surveys at the six junctions were recorded in 15-minute intervals. Analysis of the MCC data was undertaken to identify the busiest 60-minute segment in both the AM (07:00 – 10:00hrs) and the PM (16:00 – 19:00hrs) peak periods. Table 2.7 shows the analysis for each junction.

**Table 2.7: Network Peak Hour**

Junction	Peak traffic flow hour (AM Peak)	Peak traffic flow hour (PM Peak)
Ollerton Roundabout	07:45 – 08:45	16:15 – 17:15
Deerdale Lane	07:30 – 08:30	16:45 – 17:45
Mickledale Lane	07:15 – 08:15	16:45 – 17:45
White Post	07:15 – 08:15	16:30 – 17:30
Warren Hill	07:30 – 08:30	16:30 – 17:30
Lowdham Roundabout	07:45 – 08:45	17:00 – 18:00
Kirk Hill	07:45 - 08:45	16:45 – 17:45
<b>Average Network Peak Hour</b>	<b>07:30 – 08:30</b>	<b>16:30 – 17:30</b>

2.31 From the individual junction peak hours, a common network peak hour was identified by selecting the hour period which incorporated the majority of the individual junction peak hours identified in Table 2.7. The network peak hours were identified as 07:30 – 08:30hrs and 16:30 – 17:30hrs. All but one of the junction peak hours fell within 15-minutes of these network peak hours. These network peak hours were used as the AM and PM peak hours on which the analysis was based. This approach ensures consistency of traffic flows along the route used in the appraisal. In the AM peak, the junctions where the individual peak fell outside of this hour all had 45 minutes of the individual peaks included in the network peak hour. In the PM peak, the junctions which have an individual peak which fell outside of the network had 45 minutes of the individual peak hour included in the network peak hour, with the exception of Lowdham which has 30 minutes represented. The impact of this approach is a small underestimation of the peak hour demands which would underestimate the potential benefits of the scheme. This network-wide approach is a proportionate and robust approach to transport economic assessment.

2.32 Table 2.8 to Table 2.13 below present the observed inflows to each junction within the four 15-minute periods of the junction peak hours identified in Table 2.7. This shows that the use of an average peak hour for all junctions will not materially affect the appraisal.

**Table 2.8: Ollerton – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0745 - 0800	641	1615 - 1630	599
0800 - 0815	645	1630 - 1645	596
0815 - 0830	661	1645 - 1700	616
0830 - 0845	603	1700 - 1715	679

**Table 2.9: Deerdale – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0730 - 0745	536	1645 - 1700	511
0745 - 0800	473	1700 - 1715	477
0800 - 0815	536	1715 - 1730	510
0815 - 0830	497	1730 - 1745	459



**Table 2.10: Mickledale – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0715 - 0730	532	1645 - 1700	561
0730 - 0745	551	1700 - 1715	500
0745 - 0800	497	1715 - 1730	546
0800 - 0815	541	1730 - 1745	498

**Table 2.11: White Post – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0715 - 0730	587	1630 - 1645	562
0730 - 0745	642	1645 - 1700	619
0745 - 0800	642	1700 - 1715	607
0800 - 0815	643	1715 - 1730	616

**Table 2.12: Warren Hill – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0730 - 0745	523	1630 - 1645	472
0745 - 0800	518	1645 - 1700	489
0800 - 0815	493	1700 - 1715	453
0815 - 0830	422	1715 - 1730	455

**Table 2.13: Lowdham – 15-minute profile within junction peak hour**

AM Time Period	AM Inflow (veh/hr)	PM Time Period	PM Inflow (veh/hr)
0745 - 0800	817	1700 - 1715	918
0800 - 0815	886	1715 - 1730	904
0815 - 0830	952	1730 - 1745	805
0830 - 0845	945	1745 - 1800	822

2.33 In addition to the AM and PM peak hours, the assessment is also concerned with traffic conditions during the Inter Peak and Off Peak hours. The Inter peak is defined as the average hour between 10:00 – 16:00hrs, whilst the Off Peak is defined as the average hour between 22:00 – 06:00hrs.

2.34 Given this, the following time periods were examined throughout the study:

- AM Peak: 07:30 – 08:30hrs;
- PM Peak: 16:30 – 17:30hrs;
- Inter Peak: 10:00 – 16:00 (average hour);
- Off Peak: 22:00 – 06:00 (average hour);

### Baseline Traffic Flows

- 2.35 As the MCCs only recorded vehicles passing through the junction, vehicles that were recorded as queuing at the end of each of the peak sixty-minute periods have also been added to the recorded traffic flow (proportioned to each individual turning movement) so that the full demand through each junction is identified. This ensures that any new scheme can be designed to cater for the full hourly demand.
- 2.36 To account for any seasonality effects associated with the month of collection of the MCC surveys, a seasonality factor was applied at this stage which was based on long-term traffic count data provided by NCC for the A614 corridor.

$$\text{Baseline} = (\text{Junction MCC} + \text{Queuing Traffic at Period End}) * \text{Seasonality Factor}$$

- 2.37 The seasonality factor was calculated by finding the average two-way weekday flow for each month at 5 permanent count sites on the A614 / A6097 corridor (identified in Figure 2-1 above). This was used to find the percentage difference between the AAWT (Average Annual Weekday Traffic) flow and the monthly average, which was then applied to the months of traffic data collection to account for any seasonality impacts associated with differing months of data collection.
- 2.38 The seasonality factor was calculated to be 4.1%.
- 2.39 The approach to using long term traffic data to derive a seasonality factor is consistent with DMRB, Volume 12, Section 1, Part 1 guidance.
- 2.40 Diagrams showing the traffic flow through each of the study area junctions are shown in Appendix E. Appendix F presents total base year flows for links approaching each junction and the observed turning movements at each junction by vehicle type and time period.
- 2.41 To examine the temporal variation of traffic flows along the corridor, permanent count site data available through the C2 database has been examined for the period 1<sup>st</sup> January 2018 – 31<sup>st</sup> December 2018 (i.e. the most up-to-date full year of traffic data). The following permanent counts sites have been examined to represent the full corridor:
- A614 Bilsthorpe (N) – Site ID: 000030306363
  - A614 Bilsthorpe (S) – Site ID: 000030306359
  - A6097 Warren Hill (S) – Site ID: 0000352206253
  - A6097 Lowdham (N) – Site ID: 000030806547
  - A6097 Lowdham (S) – Site ID: 000030006745
- 2.42 The average hourly weekday traffic flows (excluding bank holidays) have been calculated across the five sites to show the temporal variation in traffic flows on the corridor across the day. Figure 2-2 shows the variation across the day in the northbound direction, whilst Figure 2-3 shows the southbound. Figure 2-4 summarises the two-way flow.

Figure 2-2: Average weekday hourly traffic flow across the A614 / A6097 corridor – Northbound

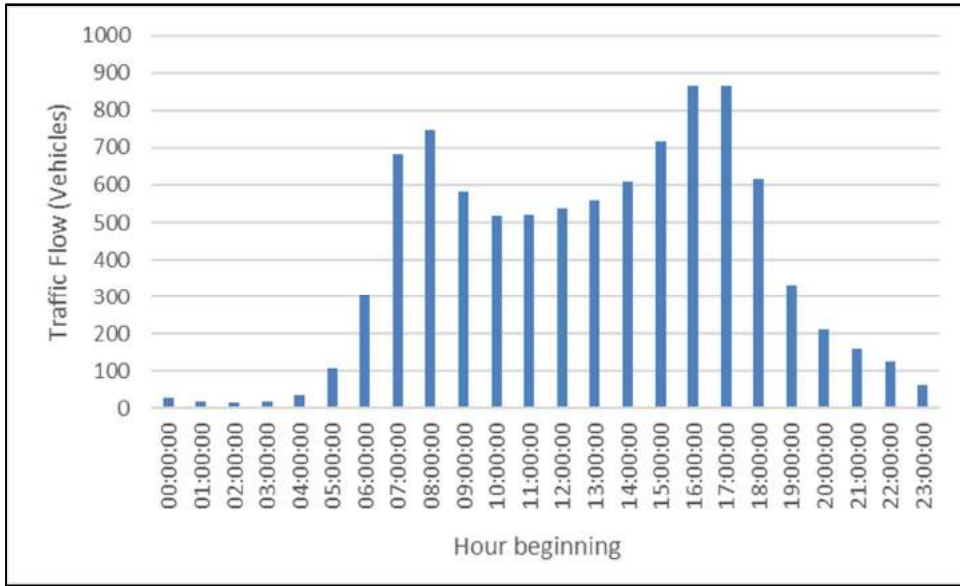
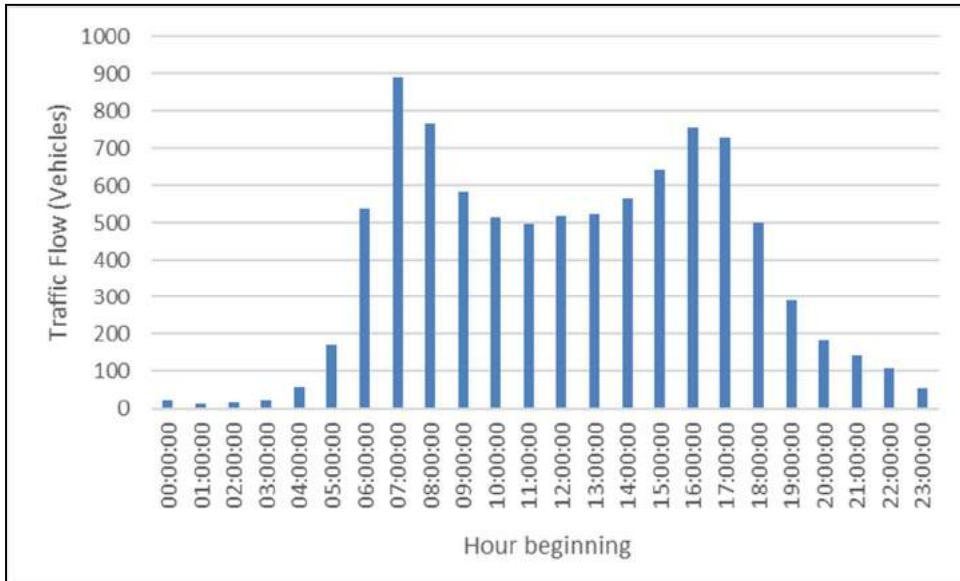
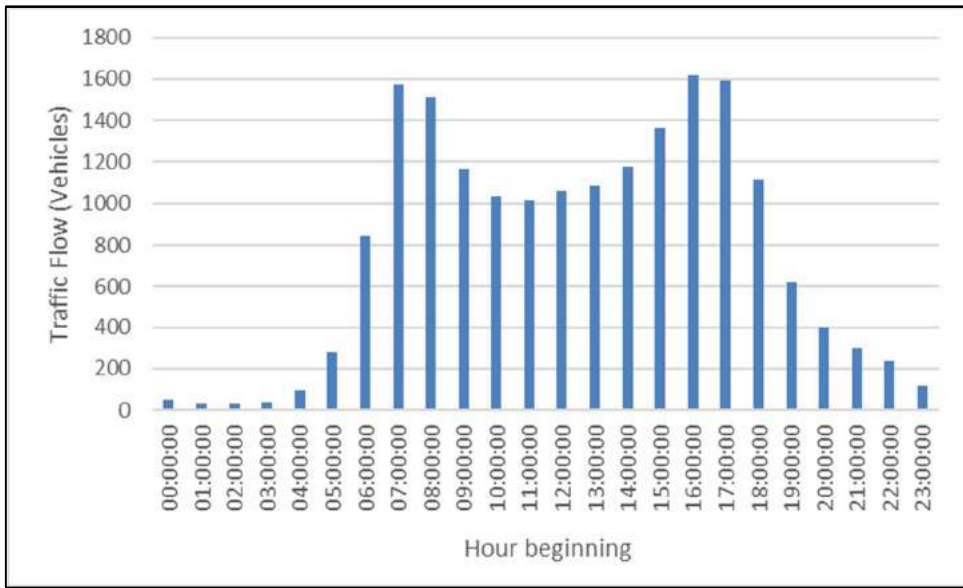


Figure 2-3: Average weekday hourly traffic flow across the A614 / A6097 corridor – Southbound



**Figure 2-4: Average weekday hourly traffic flow across the A614 / A6097 corridor – Two-way**



- 2.43 The data in Figures 2.2 to 2.4 identifies two clear peak periods across the corridor, typically between 0700 – 0900 hrs in the morning and 1600 – 1800 hrs in the evening. The network peak hours used throughout this report (identified as 0730 – 0830 and 1630 – 1730 in Table 2.1) fall within these peak periods.
- 2.44 Furthermore, the graphs indicate that traffic flows along the A614 – A6097 corridor are tidal, whereby traffic flows are higher in the morning peak in the southbound direction, whilst in the evening peak traffic flows are greatest in the northbound direction.
- 2.45 The C2 data was also utilised to show variation across the year, with the average weekday flows per month shown in Figure 2-5 for the northbound and Figure 2-6 for the southbound. The two-way average traffic flows by month are shown in Figure 2-7.

**Figure 2-5: Average monthly (weekday) traffic flow across the A614 / A6097 corridor – Northbound**

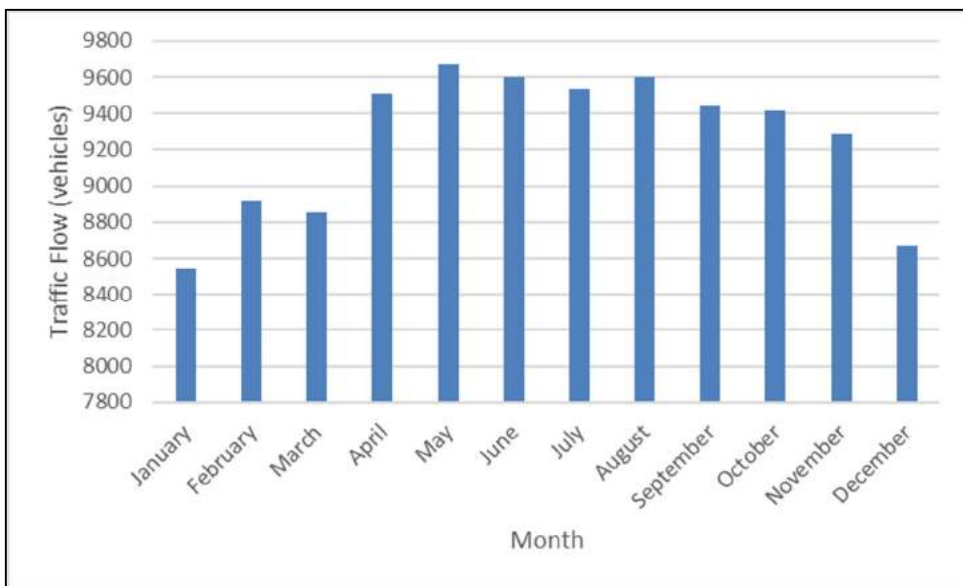


Figure 2-6: Average monthly (weekday) traffic flow across the A614 / A6097 corridor – Southbound

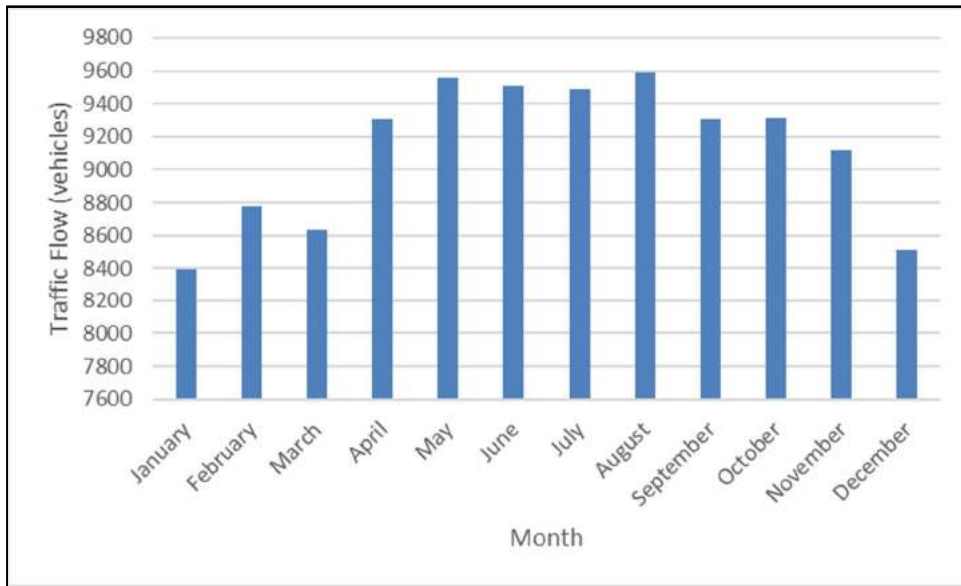
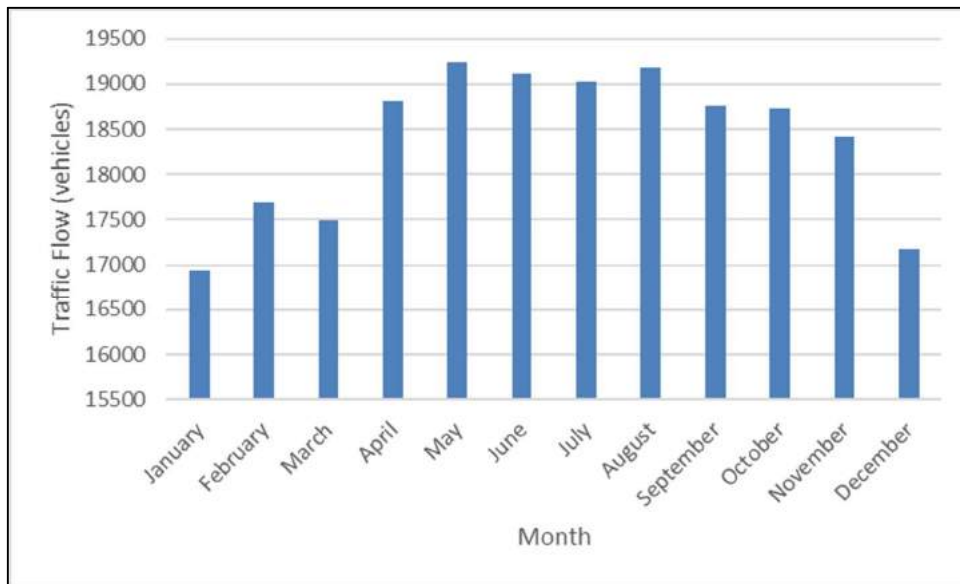


Figure 2-7: Average weekday hourly traffic flow across the A614 / A6097 corridor – Two-way



2.46 Figure 2-5 to Figure 2-7 identify that traffic flows are greatest in the summer months, with the two-way traffic flow highest in May. January and December see the lowest traffic flow.

2.47 To show annual changes to traffic flows across the corridor, historic count data available through the DfT manual count point database has been utilised for three sites across the network corridor:

- A614 Bilsthorpe (S) – Site number 17302;
- A614 White Post – Site number 47379; and
- A6097 Epperstone By-Pass – Site number 27820.

2.48 Figure 2-8 shows the Annual Average Daily Flow in the northbound direction as an average across the three sites, whilst Figure 2-9 shows the southbound direction. The variation in two-way flow is shown in Figure 2-10.

Figure 2-8: Average Annual Daily Flow, averaged for the three sites on the corridor - Northbound

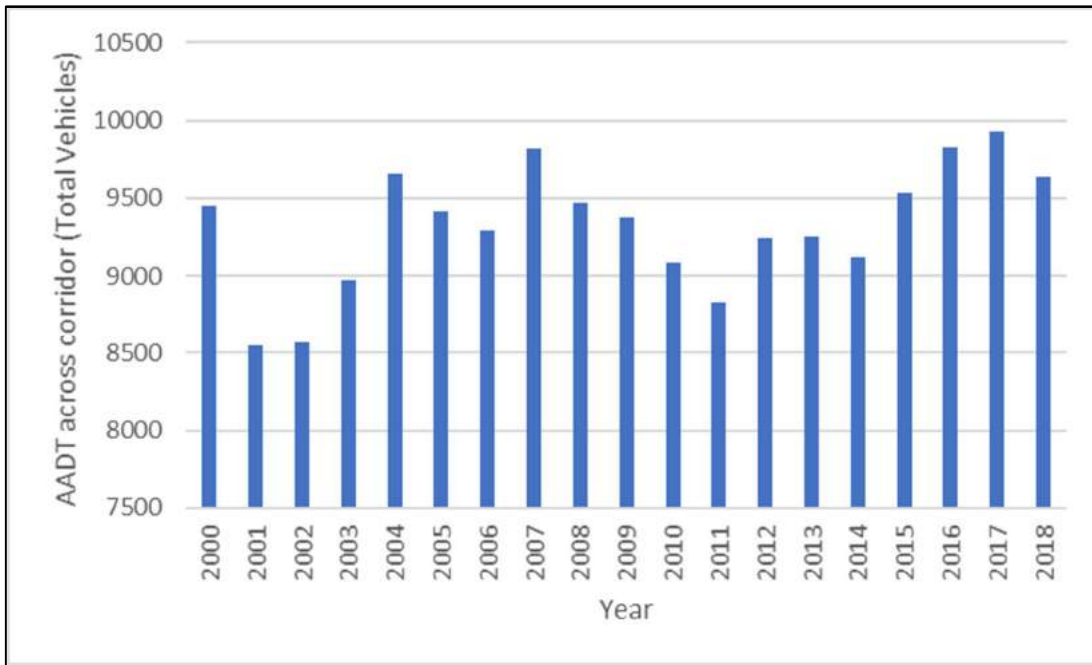
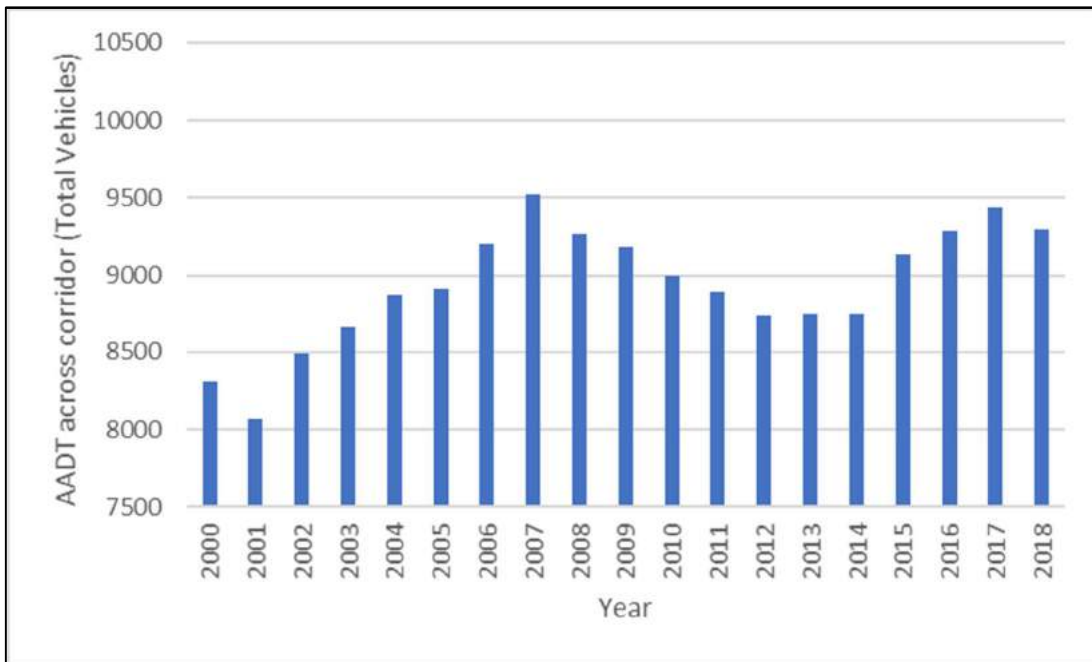
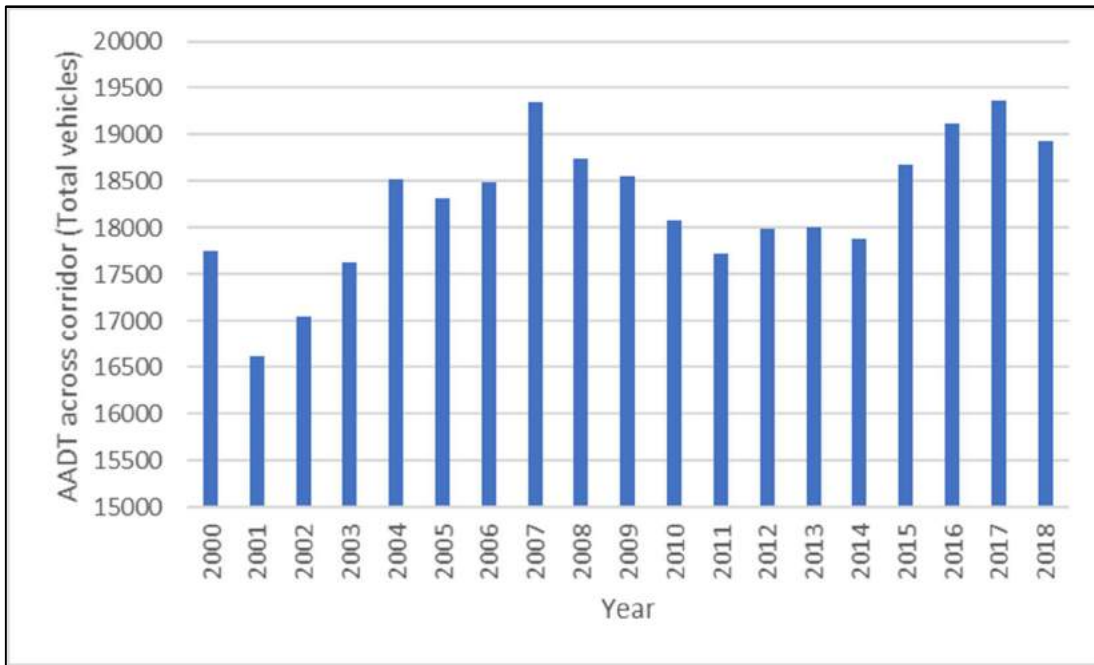


Figure 2-9: Average Annual Daily Flow, averaged for the three sites on the corridor – Southbound



**Figure 2-10: Average Annual Daily Flow, averaged for the three sites on the corridor – Two-way**



2.49 The data presented in Figure 2-8 to Figure 2-10 shows no obvious temporal relationship, with AADT flows observed to vary year-on-year.

**Public Transport Flows**

2.50 The number of buses routing through each of the junctions recorded during the MCC counts are shown Table 2.14. Full junction diagrams are shown in Appendix G, which show the turning movements of buses at each of the junctions.

**Table 2.14: Buses routing through each scheme junction – derived from MCC data**

Junction	Buses routing through junction		
	AM	PM	IP
Ollerton	26	9	17
Deerdale Lane	10	2	6
Mickledale Lane	12	4	6
White Post	12	9	8
Warren Hill	6	6	5
Lowdham	18	8	10
Kirk Hill	5	5	2

2.51 The following services route along or through the study area:

- 14 / 15 / 15A - Stagecoach (Mansfield / Walesby / Kirton). Routes through:
  - Ollerton Roundabout
- Sherwood Arrow – Stagecoach (Worksop / Retford / Ollerton / Nottingham). Routes through:
  - Ollerton Roundabout
  - Deerdale Lane
  - Mickledale Lane
  - White Post
  - Warren Hill
- 28 – Stagecoach (Mansfield / Blidworth / Farnsfield / Southwell / Averham / Newark). Routes through:
  - White post
- 27x / 28 – Stagecoach (Mansfield / Blidworth / Bilsthorpe / Eakring). Routes through:
  - White post
- 29 – Stagecoach (Mansfield / Blidworth / Farnsfield / Southwell / Upton / Newark). Routes through:
  - White Post
- The Calverton – Trent Barton (Calverton / Arnold / Nottingham)
- 26 / 26A / N26 – Nottingham City Transport (Southwell / Brackenhurst / Lowdham / Burton Joyce / Nottingham) Route through:
  - Lowdham
- 354 – Nottsbus Connect (Newark - Elston - Bingham - Orston) Route through:
  - Kirk Hill

2.52 Services operating only one day per week (such as Shopper services) have not been included due to their low frequency.

2.53 Appendix H shows a map of bus services within the study area

2.54 Personal Service Vehicles (PSVs), including buses, have been accounted for within junction modelling by using Passenger Car Units (PCUs) as the unit of traffic volume. Each bus was assigned a PCU value of 2, which accounts for the greater impacts larger vehicles have upon traffic variables (e.g. capacity, road surface degradation etc.).

2.55 In addition, buses (and other large vehicles) have also been accounted for within junction design (described in detail within the Options Appraisal Report (OAR)).

### Pedestrians and cyclists

2.56 No specific pedestrian and cyclists baseline data has been collected due to the rural location of the junctions and low numbers expected. However, camera surveys were utilised for turning counts at the key junctions of Ollerton, Deerdale, Mickledale and Lowdham. A review of the camera footage has been undertaken and the numbers for the whole day are shown in Table 2.15 Please note that these are limited as the camera survey was setup to capture turning counts, but it is considered that the data shows the relative low number of pedestrian and cyclists across all these junctions. As part of the detailed design further surveys will be commissioned at Lowdham due to the higher numbers observed, however, a formal controlled toucan crossing is proposed as part of the new junction layout.



**Table 2.15: Pedestrians and Cyclists at each junction – derived from camera survey**

Junction	Pedestrians	Cyclists	Date of Camera Survey
Ollerton	15	2	(29 <sup>th</sup> June 2017)
Deerdale Lane	4	6	(27 <sup>th</sup> September 2017)
Mickledale Lane	0	7	(27 <sup>th</sup> September 2017)
Lowdham	34	71 (carriageway) 34 (off-carriageway)	(7 <sup>th</sup> June 2018)

2.57 Pedestrian and cyclists' trips across all junctions are low and the number of trips local to the junctions is not available. Controlled crossing facilities for pedestrians and cyclists are included at the following locations:

- Ollerton roundabout on the A614 southern arm and across the A6075.
- Lowdham, roundabout on the A6097 northern arm, this is the key desire route between Burton Joyce / Bulcote and Lowdham and links an existing shared use footway / cycleway

## Traffic Forecast Scenarios

- 2.58 The following future year traffic forecasting scenarios have been developed:
- Opening Year Forecast - 2023;
  - Design Year Forecast (Non Dependent) - 2037; and
  - Design Year Forecast (Dependent) – 2037.
- 2.59 The 2023 Opening Year forecasts have been prepared to reflect the expected construction program of the six junctions which make up the scheme package.
- 2.60 A 2037 Design Year forecast has been produced for design purposes, which assumes all identified development is built out (Design Year Forecast (Dependent) – 2037); whilst a further 2037 forecast (Design Year Forecast (Non Dependent) – 2037) has been produced which excludes any dependent development for use in the economic assessment (i.e. this report).
- 2.61 There are no programmed transport schemes along the A614/A6097 corridor and no major nearby schemes that are likely to impact the A614/A6097. As such the surrounding existing transport network is representative of the future year transport network. There are no interim improvements planned at any of the scheme junctions.

### Committed Development

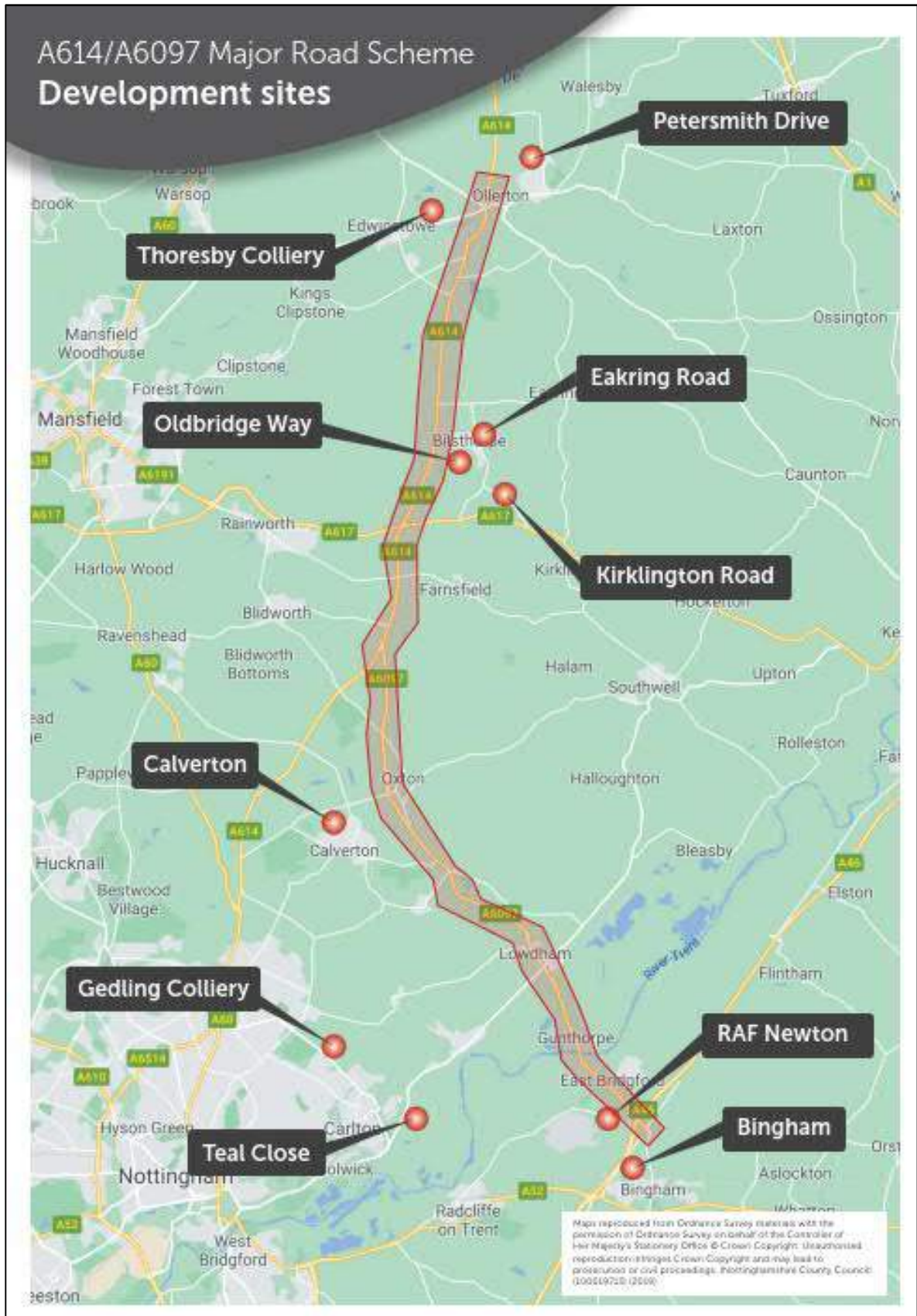
- 2.62 To suitably forecast the future traffic on the network, it is necessary to consider the additional traffic generated by the development of new housing and employment sites on, or nearby, the corridor.
- 2.63 TAG unit M4, Forecasting and Uncertainty, May 2018, section 2.2 and Table A2 defines the criteria for including known development in a core forecast. This should only include schemes where the likelihood of them going ahead is near certain, or more than likely
- 2.64 Following discussion with Nottinghamshire County Council, it was agreed to include the following committed developments, deemed to be near certain, or more than likely, in the traffic forecasts:
- Newark & Sherwood District Council:
    - Land north of Petersmith Drive;
    - Thoresby Colliery;
    - Land East of Eakring Road (Bilsthorpe Village);
    - Kirklington Road (Bilsthorpe Village);
    - Oldbridge Way (Bilsthorpe Village);
  - Rushcliffe Borough Council:
    - Land at the former RAF Newton;
    - Chapel lane, Bingham;
  - Gedling Borough Council:
    - Park Road, Calverton;
    - Land at Teal Close; and
    - Land at Chase Farm (Former Gedling Colliery).

2.65 Table 2.16 shows the development size for each committed development, as well as whether there are any planning conditions attached to the application, whilst Figure 2-11 locates the sites within the context of the A614 / A6097 corridor.

**Table 2.16: Committed Development**

Development	Planning Application Reference	Number of dwellings	Employment land	Planning Constraints?
Petersmith Drive	17/00595	305	N/A	N/A
Thoresby Colliery	16/02173	800	32,375m <sup>2</sup>	Constrained to 150 dwellings and 8,094m <sup>2</sup> employment development until improvements to Ollerton Roundabout occur
Eakring Road	17/01139	85	N/A	N/A
Kirklington Road	18/00931	136	N/A	N/A
Oldbridge Way	16/01618	113	N/A	N/A
Bingham	10/01962	1,000	55,740m <sup>2</sup>	N/A
RAF Newton	10/02105	500	15,800m <sup>2</sup>	N/A
Calverton	2018/0607	650	N/A	N/A
Teal Close	2013/0546	830	18,000m <sup>2</sup> + Car Home, Schools and Shops	Constrained to 325 dwellings until Lowdham Roundabout is upgraded
Gedling Colliery	2015/1376	1,050	N/A	N/A

Figure 2-11: Committed Development Locations



2.66 Table 2.17 shows the planning status of the most recent (and relevant) application for each development site. The decision to include each site within the Forecasting Year Core Scenario has been made in accordance with Table A2 within the Department for Transport's TAG Unit M4 document (*Forecasting and Uncertainty*).

**Table 2.17: Development Planning Status**

Development	Planning application	Planning Status	Decision date
Petersmith Drive	Full planning permission for residential development of 305 dwellings and associated development.	Application permitted	16 <sup>th</sup> August 2018
Thoresby Colliery	Outline planning permission for residential development up to 800 dwellings, employment sites (4,855sqm B1a, 13,760sqm B1c, 13,760sqm B2), Country Park, Local Centre etc.	Application permitted	12 <sup>th</sup> March 2019
	Reserved matters application for Phase 1 residential development (143 dwellings).	Application permitted	4 <sup>th</sup> December 2019
Eaking Road	Outline planning permission for residential development up to 85 dwellings, 280sqm retail development and associated works.	Application permitted	1 <sup>st</sup> June 2018
Kirklington Road	Outline planning permission for residential development up to 85 dwellings, 280sqm retail development and associated works.	Application pending	N/A
Oldbridge Way	Full planning permission for residential development of 120 dwellings and ancillary works	Application pending	N/A
Bingham	Reserved matters application for Phase 1 (317 residential dwellings) including associated infrastructure	Application permitted (conditional)	12 <sup>th</sup> February 2018
	Reserved matters application for Phase 2 (733 residential dwellings) including associated infrastructure	Application permitted (conditional)	1 <sup>st</sup> February 2019
RAF Newton	Outline planning permission (with all matters reserved) for 500 dwellings, 50 live/work units, 5.22ha new employment, 1000sqm A1,A3 and A4 uses and community uses.	Application permitted (with section 106)	30 <sup>th</sup> January 2014
	Variation of conditions to enable demolition of existing buildings	Application permitted (conditional)	29 <sup>th</sup> July 2015
Calverton	Outline planning application for up to 365 dwellings (all matters reserved except access).	Application pending	N/A
Teal Close	Reserved matters application for access, appearance, landscaping etc. related to the Local centre and employment area	Application pending	N/A
	Outline planning application for residential development (up to 830 dwellings), employment uses, community hub, primary school, hotel, care home and associated infrastructure.	Application permitted	30 <sup>th</sup> June 2014
Gedling Colliery	Planning application for the construction of an access road junction from the Gedling Access Road	Application permitted	2 <sup>nd</sup> August 2019
	Demolition of existing structures and phased development of 1,050 dwellings, local centre with retail units, health centre, and new primary school.	Application permitted	3 <sup>rd</sup> March 2017

## Dependent Development

2.67 TAG unit A2.2, Induced Investment (May 2020), notes that:

*“Dependent development refers to new development that is dependent on the provision of a specific transport scheme and for which, with the new development but in the absence of the transport scheme, the existing transport network would not provide a reasonable level of service to existing and/or new users. This has the implication that the development would not be delivered in the absence of the specific transport scheme. It is also noted that the development may have planning permission conditional on a transport investment, but this is not a prerequisite for it to be considered dependent.”*

2.68 As noted in Table 2.16 above, the development sites at Thoresby Colliery and Teal Close have planning conditions as part of their planning approval, limiting the amount of development that can be delivered prior to the improvements at Ollerton and Lowdham.

2.69 TAG unit A2.2, May 2020 notes that the level of dependency of a site is dependent on the proportion of development that may be accommodated before breaching an acceptable level of service on the transport network.

2.70 TAG Unit A2.2, paragraph 3.1.6 states:

*“There is no precise definition of reasonable level of service, such that decisions about dependency are judgement based. However, if additional traffic can be accommodated by the network without significant increases in the costs of travel for existing users, then the network can be assumed to provide a reasonable level of service. “*

2.71 TAG Unit A2.10, paragraph A2.10 states:

*“... it is assumed that in the baseline scenario the network provides a reasonable level of service. Clearly if that is not the case then the new development is likely to be wholly dependent on some form of transport scheme. However, it must be demonstrated that the baseline scenario does not provide a reasonable level of service before this conclusion can be reached.”*

2.72 Appendix I demonstrates that the Ollerton and Lowdham junctions are overcapacity in the Base Year. Any increase in trip demand in those parts of the existing highway network will result in unreasonable levels of service. Treating any of the dependent development sites as non-dependent would result in a deterioration of an already poor level of service on the local highway network. The Thoresby Colliery and Teal Close sites are therefore considered dependent.

2.73 This is consistent with TAG Unit A2.2 which notes: *“A dependency is likely to occur where a development will breach ‘a reasonable level of service’ on the transport network.”*

2.74 As noted in TAG Unit A2.1, Wider Economic Impacts Appraisal, Table 2 (May 2019), the Level 1 assessment of transport user benefits exclude Dependent Development from the traffic forecasts. As such, the ‘Non-Dependent’ traffic forecasts exclude the impacts of dependent development and have been used to assess the transport user benefits of the scheme.

2.75 Additional Induced Investment benefits associated with the change in land value arising from the associated change in land use accrued as part of the scheme in relation to the Thoresby Colliery and Teal Close sites are presented in Section 10.

2.76 Noting that dependent development should not be included in the assessment of transport user benefits, a forecast scenario *including* the trips associated with the dependent development sites has been produced for the purposes of junction design. This forecast has only been used to ensure the proposed junction designs have sufficient capacity and is not used in the assessment of transport user benefits.

2.77 Junction modelling of Ollerton and Lowdham using the dependent development forecast demands demonstrate that the proposed improvements provide sufficient capacity to accommodate the dependent development and meets the planning conditions allow the full developments to go ahead. This is shown in Table 2.18 below which show the RFC of the improved junctions forecast to operate within capacity, or approaching capacity, in the scheme design year.

**Table 2.18: Dependent Development Junction Modelling – 2037 Design Year**

2037 Design Year – Dependent Development						
	Lowdham Do Something			Ollerton - Do Something		
	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)
AM	16.5	0.96	30.55	5.9	0.85	11.33
PM	30.2	1.00	29.51	8.2	0.9	15.45
IP	1.3	0.57	4.24	1.5	0.61	4.58
OP	0.1	0.05	1.86	0.1	0.05	1.96

## Core Traffic Forecast Methodology

- 2.78 Data on future trip generation and traffic distribution was taken wherever possible directly from the Transport Assessments supporting the various planning applications.
- 2.79 Trip distribution data was not available for the Kirklington Road, Oldbridge Way and Gedling Colliery developments.
- 2.80 To calculate trip distribution for Gedling Colliery, the gravity model contained within the Calverton Transport Assessment was used, given the similar nature and location of the two developments. The gravity model used within the Calverton Transport Assessment was developed by RPS Group plc and approved by Nottinghamshire County Council as part of the planning application process. The model calculates attraction to key destinations (as a percentage) as a function of employment population and distance to the key destination. Trips are then assigned to the network using an online route planner to determine the most likely routes travellers would use to travel to the key destination. The Calverton Transport Assessment gravity model is shown in Figure 2.12.



**Figure 2-12: Calverton Gravity model (used to estimate trip generation at Gedling Colliery) – produced by RPS Group plc**

Transport Assessment

Settlement	Employment Population (P)	Distance		P/D <sup>2</sup>	%
		km	Miles (D)		
Calverton	2,333	3	1.865	671.095	6.94%
Newark On Trent	21,144	29	18.024	65.088	0.67%
Grantham	20,958	40	24.860	33.911	0.35%
Nottingham	332,733	11	6.837	7119.059	73.61%
Mansfield	80,065	13	8.080	1226.502	12.68%
Derby	129,129	35	21.753	272.898	2.82%
Loughborough	37,425	48	29.832	42.052	0.43%
Lincoln	68,474	59	36.669	50.925	0.53%
Leicester	246,503	58	36.047	189.705	1.96%
				<u>9671.236</u>	

- 2.81 To calculate trip distribution for the Kirklington Road and Oldbridge Way developments, the 2011 Journey to Work census has been used which shows the volume and destination of inflows and outflows to the Newark and Sherwood District Council area. A route planner was then used to determine the most likely routes used by traffic to get to / from these points. The 2011 Journey to Work census data, whilst being 8 years old, is considered the most suitable source of data for traffic distribution since it presents the most extensive database on trip origins and destinations to date.
- 2.82 The trip distributions for the AM and PM inflow and outflow (derived from 2011 Journey to Work census data) is shown in Table 2.19.

**Table 2.19: Trip distribution calculated from 2011 Journey to Work census data – applied to Kirklington Road and Oldbridge Way**

Key Origin / Destination	Inflow	Outflow
Nottingham	8.2%	21.7%
Mansfield	25.4%	19.5%
Ashfield	7.3%	11.0%
Bassetlaw	10.5%	10.7%
Gedling	10.0%	9.2%
Rushcliffe	7.0%	6.9%
South Kesteven	7.9%	6.7%
Lincoln	10.1%	6.0%
North Kesteven	9.5%	5.7%
Bolsover	4.0%	2.6%

- 2.83 For any developments where trip distribution data was not available along the full length of the A614/A6097 corridor, traffic has been assigned along the remainder of the corridor using the observed turning movement proportions from the MCCs at each junction.



- 2.84 For each junction approach arm the percentage of total vehicles (in PCUs) making each turning movement is calculated (for example on Mickledale Lane in the AM Peak, 22% of traffic routes right (to A614 (N)) and 78% routes left (to A614 (S)). When development traffic reaches each junction, it is routed according to the baseline turning movement proportions. For example, should 100 vehicles be travelling along Mickledale Lane from the Oldbridge Way development, 22 are expected to route right and 78 left. The resulting traffic volume is then routed according to the MCC turning proportions at each junction until the end of the corridor. Appendix J shows the distribution of traffic for each development site along the A614 – A6097 corridor by time period.
- 2.85 For clarity, Table 2.20 summarises the source of trip generation and traffic distribution data for each development site by time period respectively.

**Table 2.20: Trip generation and traffic distribution data source for each proposed development**

Development	Trip Generation data source	Trip distribution data source	Trip distribution along corridor
Petersmith Drive	Taken from TA (February 2017)	Taken from TA (February 2017)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
Thoresby Colliery	Taken from TA (December 2016)	Taken from TA (December 2016)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
Eakring Road	Taken from TA (June 2017)	Taken from TA (June 2017)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
Kirklington Road	Taken from TA (May 2018)	Calculated via 2011 census data to identify key destinations and percentage of trips routing to these. Assigned using an online route planner. (Calculated for this study by AECOM)	Distribution along A614 – A6097 corridor identified through census data / route planner.
Oldbridge Way	Taken from TA (October 2016)	Calculated via 2011 census data to identify key destinations and percentage of trips routing to these. Assigned using an online route planner. (Calculated for this study by AECOM)	Distribution along A614 – A6097 corridor identified through census data / route planner.
Bingham	Taken from TA (October 2010)	Taken from TA (October 2010)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
RAF Newton	Taken from TA (December 2010)	Taken from TA (December 2010)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
Calverton	Taken from TA (May 2018)	Taken from TA (May 2018)	Partial distribution data along A614 – A6097 corridor.

			Remainder has been assigned according to MCC turning movement proportions.
Teal Close	Taken from TA (April 2013)	Taken from TA (April 2013)	Partial distribution data along A614 – A6097 corridor. Remainder has been assigned according to MCC turning movement proportions.
Gedling Colliery	Taken from TA (December 2015)	Gravity model contained within the Calverton Transport Assessment used to assign development trips (due to the similar location and nature of the two sites).	Partial distribution data along A614 – A6097 corridor based upon Calverton Gravity Model. Remainder has been assigned according to MCC turning movement proportions.

- 2.86 The transport assessments identified have all presented their development trip generations as total vehicles rather than by vehicle type. For this purpose, the A614/A6097 forecasts have been developed as a total vehicle forecast then converted to PCU's by applying observed HGV proportions along the corridor. This approach reflects the volumetric increase in HGVs but retains the observed proportions.
- 2.87 Only AM and PM trip generation were provided in the Transport Assessments, and as such it was necessary to calculate the IP and OP values.
- 2.88 To calculate the IP trip generation, the Trip Rate Information Computer System (TRICS) was used to generate trip rates for the following land uses associated with the committed developments:
- Residential
  - B1 (Office)
  - B2 (Industrial Estate)
  - B8 (Commercial Warehousing)
  - Drive Thru
  - Pub / Restaurant
- 2.89 Average arrival / departure trip rates were extracted from TRICs version 7.5.3. Sites within Greater London and Ireland were excluded from the database due to a large number of Public Transport users within Greater London and a heavy reliance upon private vehicles in Ireland. The TRICS output data is available in Appendix K.
- 2.90 The hourly trip rate was extracted for each land use, and an average AM, PM and IP trip rate calculated. The IP ratio was calculated as follows, with the resulting IP trip rate ratios provided in Table 2.21.

$$\text{IP ratio} = \text{IP trip generation rate} / (\text{AM trip generation rate} + \text{PM trip generation rate})$$

**Table 2.21: Inter Peak ratio for each land-use type**

	Arrivals	Departures
Residential	0.368939	0.308237
B1	0.174709	0.210784
B2	0.492047	0.463687
B8	0.438953	0.457143
<b>Employment average</b>	<b>0.36857</b>	<b>0.377205</b>
Drive Thru	0.539977	0.561618
Pub / Restaurant	0.462056	0.440971

2.91 The IP ratios were then applied to the AM and PM trip generation values at each development, for each land use type respectively. Where the employment split had not yet been defined for commercial developments, the employment average IP ratio was used.

2.92 Due to the absence of data on the TRICS database for the Off-Peak period, permanent count sites along the A614 / A6097 (aforementioned and shown in Figure 2-1) were used to calculate an OP factor. Using the average weekday hourly flow, an average Inter Peak flow and Off Peak flow was generated. From this, an Off Peak ratio was calculated as follows, with resulting outputs shown in Table 2.22.

$$\text{OP ratio} = \text{Off Peak average flow} / \text{Inter Peak average flow}$$

**Table 2.22: Off Peak Ratio**

Permanent Count Site Location	Interpeak Average	Off Peak Average	OP Ratio
Bilsthorpe (N)	1273	141	0.1108
Bilsthorpe (S)	1327	136	0.1025
Warren Hill (S)	450	46	0.1025
Lowdham (N)	1072	94	0.0880
Lowdham (S)	1495	127	0.0849
<b>Average</b>			<b>0.0978</b>

2.93 The OP factor was then applied to the IP trip generation values to determine the trip generation from each development.

2.94 To identify the level of development in the 2023 Opening Year, the percentage built out at each development was calculated, based upon the Local Plan publication housing trajectory supplied by NCC. This is shown in Appendix L. Table 2.23 shows the cumulative and percentage built out for each development for the 2023 Opening Year.

**Table 2.23: Build Out Rate**

Development	Cumulative Build Out	Percentage Build out (%)
	2023	2023
Petersmith Drive	200	66%
Thoresby Colliery	150	100%

Eakring Road	85	100%
Kirklington Road	100	74%
Oldbridge Way	113	100%
Bingham	450	45%
RAF Newton	300	60%
Calverton	390	60%
Teal Close	240	74%
Gedling Colliery	240	23%

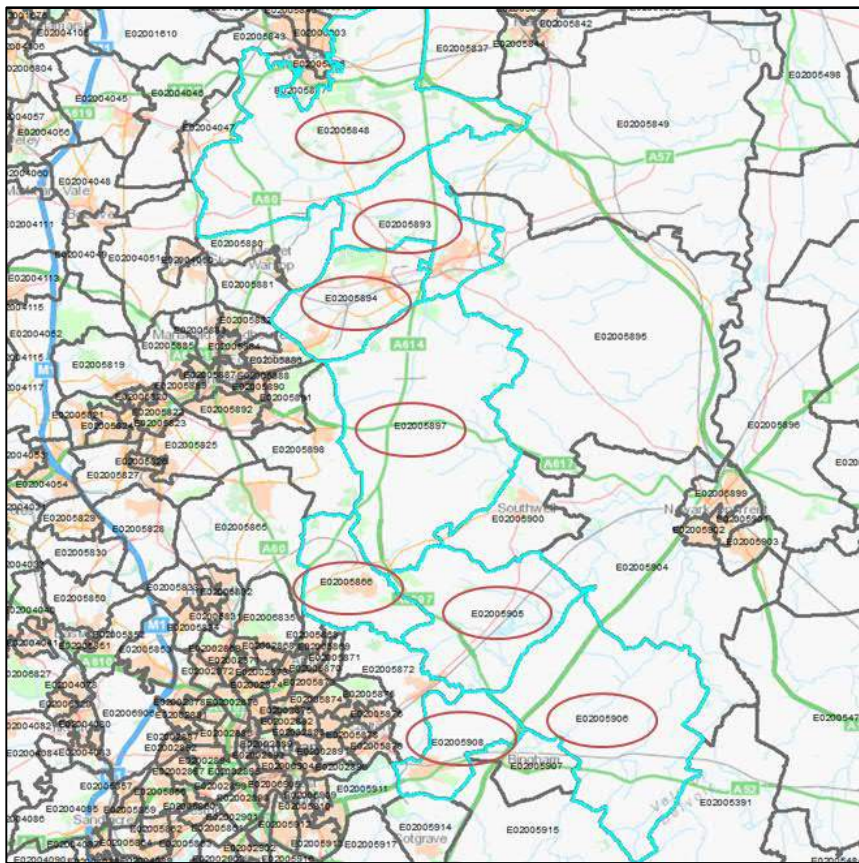
- 2.95 The percentage build out rates for each development have then been applied to the Development Flows at each development, to yield the development flows in 2023.
- 2.96 Appendix M shows the traffic flows associated with the identified development in the AM, PM, IP and OP time periods, considering dependent and non-dependent development forecasting scenarios respectively. Also provided in Appendix J are site specific flow diagrams are included to illustrate the trip generations and distributions associated with each development site.
- 2.97 To account for any additional future growth, the NTEM database was used to calculate 'topping up' factors that were applied estimate future year Opening Year and Design Flows.
- 2.98 NTEM is a database developed by the Department for Transport (DfT) as part of the National Transport Model (NTM). The NTEM database can be interrogated to find the forecast year trip-end growth projections for travel including by car, thus allowing local area traffic models to be developed on a consistent basis with regards to future year national growth.
- 2.99 The forecast outputs from NTEM for a specific area are based upon National Planning Policy aspirations regarding future employment and housing levels that have been input to the NTM.

2.100 Forecast outputs from NTEM are extracted from the flowing districts:

- E02005848 – Bassetlaw 014
- E02005893 – Newark and Sherwood 001
- E02005894 – Newark and Sherwood 002
- E02005897 – Newark and Sherwood 005
- E02005866 – Gedling 002
- E02005905 – Newark and Sherwood 013
- E02005908 – Rushcliffe 003

2.101 Figure 2-13 identifies these NTEM districts.

Figure 2-13: NTEM Growth Factor districts



2.102 The NTEM rate from each individual district was combined into an average growth rate for the A614/A6097 corridor in each time period, as shown in Table 2.24.

2.103 The growth in vehicle numbers expected from committed development along the A614 / A6097 corridor relative to the baseline is shown in Table 2.25 for each forecast scenario. This 'Development Growth' considers the expected increase in vehicle numbers from the baseline attributed to the proposed development only (i.e. it does not consider any likely background growth associated with population growth etc).

2.104 Subtracting the NTEM growth from the expected development growth shows the time periods where expected growth from development is lower than NTEM growth (highlighted in bold in Table 2.26). In this instance, the traffic flows in each scenario have been 'topped up' to NTEM levels in order capture all expected growth in traffic flow across the network.

2.105 For the purposes of economic assessment, 'topping up' has been excluded in the Design Year as the Dependent Development growth (excluded from the economic assessment) will account for the shortfall between Committed Development and NTEM levels in the Design Year in the AM and IP periods.

2.106 In the PM peak, the 'with dependent development' forecast is slightly below NTEM forecast growth. No additional NTEM growth has been applied to the PM 'non-dependent' forecast on the assumption that this is a robust approach for economic appraisal (future year PM Do Minimum delays may be slightly underestimated). The 'with dependent development' forecast has been topped up to NTEM growth forecasts to ensure the proposed design contains sufficient capacity for additional growth elsewhere in the district.

2.107 As such, the 2023 Opening Year PM scenario and 2037 Dependent PM scenario have had a 'topping up' factor applied.

**Table 2.24: NTEM Growth**

	AM	PM	IP
Opening Year (2023)	8.2%	9.2%	8.1%
Non-Dependent Growth (2037)	22.1%	24.8%	21.9%
Dependent Growth (2037)	22.1%	24.8%	21.9%

**Table 2.25: Development Growth**

	AM	PM	IP
Opening Year (2023)	9.5%	8.4%	8.8%
Non-Dependent Growth (2037)	13.5%	11.8%	12.4%
Dependent Growth (2037)	25.5%	23.1%	23.8%

**Table 2.26: Topping Up factor (NTEM Growth – Development Growth)**

	AM	PM	IP
Opening Year (2023)	-	<b>0.8%</b>	-
Non-Dependent Growth (2037)	-	-	-
Dependent Growth (2037)	-	<b>1.7%</b>	-

2.108 It is noted that the NTEM forecasts represent the predicted car growth in the region, whereas the A614 forecasts have been produced at an all vehicle level (for the reasons set out in paragraph 2.75). As the expected development growth (non-dependent and dependent) has not been constrained to NTEM and in all but one case exceeds NTEM growth, the comparison is useful. In the cases where forecasts are below NTEM and have not had a 'topping up' factor applied, forecast could be an underestimation of demand. This is a robust approach for economic appraisal (future year PM Do Minimum delays may be slightly underestimated).

### Ollerton Reassignment

2.109 It was noted that the improvements to Ollerton roundabout had a small potential for possible reassignment of local traffic likely currently routing through the village to avoid journey time delays at peak times. An assessment of through traffic was identified in a Nottinghamshire County Council analysis of matched registration survey conducted in 2017. This assessment was used to make allowance for potential reassignment onto the A614 corridor in the Do Something scenario for use in the Noise & Air Quality assessment.

2.110 The 2023 Opening Year traffic forecasts, used within the Economic Assessment are shown in Appendix N.

2.111 The 2037 Design Year traffic forecasts, used within the Economic Assessment, are contained within Appendix O.

### Traffic Forecast Summary

2.112 Table 2.27 to Table 2.32 provide a summary of how peak hour demand at the scheme junctions are forecast to grow in future.

**Table 2.27: Ollerton Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	2,866
	PM	2,950
Opening Year (2023)	AM	3,210
	PM	3,138
Design Year (2037)	AM	3,223
	PM	3,253

**Table 2.28: Deerdale Lane Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	1,965
	PM	1,896
Opening Year (2023)	AM	21,36
	PM	1,393
Design Year (2037)	AM	2,210
	PM	2,092

**Table 2.29: Mickledale Lane Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	2,018
	PM	2,023
Opening Year (2023)	AM	2,204
	PM	2,226
Design Year (2037)	AM	2,281
	PM	2,262

**Table 2.30: White Post Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	2,410
	PM	2,321
Opening Year (2023)	AM	2,663
	PM	2,566
Design Year (2037)	AM	2,760
	PM	2,628

**Table 2.31: Warren Hill**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	2,034
	PM	1,821
Opening Year (2023)	AM	2,276
	PM	2,050
Design Year (2037)	AM	2,372
	PM	2,116

**Table 2.32: Lowdham Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	3,424
	PM	3,485
Opening Year (2023)	AM	3,651
	PM	3,712
Design Year (2037)	AM	3,807
	PM	3,820

**Table 2.33: Kirk Hill Junction**

	Time period	Total Junction Inflow (pcu/hr)
Base Year (2018)	AM	2,800
	PM	2,250
Opening Year (2023)	AM	2,695
	PM	3,200
Design Year (2037)	AM	2,929
	PM	3,303

2.113 Table 2.34 to Table 2.25 below present the total volumes for each approach at each junction in both the opening year and design year. Further detail is also provided in Appendix P which present the opening year and design year turning matrices by time period.



Table 2.34: Ollerton – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	524	399	546	39	535	408	553	40
A616(E)	817	725	1145	71	848	739	1154	73
A614(S)	947	682	781	66	981	701	802	68
A6075	475	333	423	32	478	336	424	32
A616(W)	375	233	315	23	381	237	320	23
<b>TOTAL</b>	<b>3138</b>	<b>2372</b>	<b>3210</b>	<b>231</b>	<b>3223</b>	<b>2421</b>	<b>3253</b>	<b>236</b>

Table 2.35: Deerdale Lane – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1071	646	976	64	1108	667	976	66
Deerdale Lane (E)	127	111	147	11	131	113	147	11
A614(S)	938	636	969	62	971	655	969	64
<b>Total</b>	<b>2136</b>	<b>1393</b>	<b>2050</b>	<b>137</b>	<b>2210</b>	<b>1435</b>	<b>2092</b>	<b>141</b>

Table 2.36: Mickledale – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1045	644	956	63	1084	665	977	65
Mickledale Lane	191	130	169	13	194	133	172	13
A614(S)	968	686	1091	67	1003	707	1113	69
<b>Total</b>	<b>2204</b>	<b>1460</b>	<b>2216</b>	<b>143</b>	<b>2281</b>	<b>1505</b>	<b>2262</b>	<b>147</b>

Table 2.37: White Post – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1056	678	976	66	1102	704	1001	69
Mansfield Road(E)	216	158	238	15	219	160	239	16
A614(S)	1087	678	1191	66	1128	704	1226	69
Mansfield Road (W)	305	137	160	13	311	139	162	14
<b>Total</b>	<b>2663</b>	<b>1651</b>	<b>2566</b>	<b>161</b>	<b>2760</b>	<b>1707</b>	<b>2628</b>	<b>167</b>

**Table 2.38: Warren Hill – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1286	582	845	57	1341	611	876	60
A6097(SE)	450	283	530	28	490	307	565	30
A614(S)	539	333	675	33	541	335	674	33
<b>Total</b>	<b>2276</b>	<b>1198</b>	<b>2050</b>	<b>117</b>	<b>2372</b>	<b>1254</b>	<b>2116</b>	<b>123</b>

**Table 2.39: Lowdham – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1320	683	963	67	1368	711	990	69
Southwell Road	412	352	444	35	417	358	449	36
A6097(SE)	1214	857	1451	83	1280	906	1511	89
A612	705	588	854	58	742	612	870	60
<b>Total</b>	<b>3651</b>	<b>2480</b>	<b>3712</b>	<b>243</b>	<b>3807</b>	<b>2587</b>	<b>3820</b>	<b>254</b>

**Table 2.40: Kirk Hill – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1326	734	1239	63	1458	825	1286	70
Southwell Road	213	122	214	10	222	130	220	12
A6097(SE)	994	720	1433	61	1079	794	1459	68
A612	162	74	314	7	170	79	338	7
<b>Total</b>	<b>2695</b>	<b>1650</b>	<b>3200</b>	<b>141</b>	<b>2929</b>	<b>1828</b>	<b>3303</b>	<b>157</b>

2.114 The total inflows presented in Table 2.21 to Table 2.5 were reviewed against base year movements and local knowledge of the junctions and appear logical and were considered suitable for use in scheme appraisal.

**Annual Average Daily Traffic (AADT)**

2.115 Network AADT values were computed via a factor calculated using long term permanent ATC data along the A614/A6097 corridor. The ATC sites provide hourly flow, by direction for every day of the year. Five count sites that had a full year (2018) available were used in the assessment (Figure 2.1):

- A614 Bilsthorpe (N) – Site ID: 000030306363
- A614 Bilsthorpe (S) – Site ID: 000030306359
- A6097 Warren Hill (S) – Site ID: 0000352206253
- A6097 Lowdham (N) – Site ID: 000030806547
- A6097 Lowdham (S) – Site ID: 000030006745

- 2.116 The average daily (24hr) traffic was derived from the long-term data across the 5 count sites that had a full year (2018) available. In addition, the average weekday AM, Inter-peak and PM peak hours were derived
- 2.117 The relationship between the observed average daily flow and observed average weekday peak hours was used to produce a factor that could be applied to the A614/A6097 traffic forecast to produce an Annual Average Daily Traffic volumes. The average two-way 24 hour flow was divided by the sum of the average weekday Peak Hours (AM, PM, IP and OP) to calculate an AADT factor, as shown below:

$$\text{AADT Factor} = \text{Average 24 hour flow} / (\text{Average Weekday AM Peak flow} + \text{Average Weekday PM Peak flow} + \text{Average Weekday IP Peak flow} + \text{Average Weekday OP Peak flow})$$

$$\text{AADT Factor} = 3.876$$

- 2.118 To calculate the forecast AADT flows on the A614 / A6097 network, the sum of the AM, PM, IP and OP peak periods forecasts was multiplied by the AADT Factor (3.876). A worked example is presented in Appendix Q.
- 2.119 The resulting AADT flows are shown in Appendix R. These values were subsequently used in the COBALT analysis.

## National Economic Uncertainty

- 2.120 Traffic demand is driven not only by demographic changes such as an increase in population, but also by GDP growth and fuel price, both of which affect the utility for travel. Models that rely on NTEM will not fully reflect the uncertainty of these national trends.
- 2.121 To account for this, the DfT's TAG Unit M4 (May 2019) at section 4 recommends that a proportion of the model's base year matrix, on a cell-by-cell basis, is either added (High Growth) or subtracted (Low Growth) from the CS Reference case matrix. This proportion is defined as 2.5% multiplied by the square root of the number of years between the base year and the forecast year.
- 2.122 Table 2.41 shows the proportions of the base matrices that were added or subtracted from the CS Reference Case matrices on a cell-by-cell basis.

**Table 2.41: High/Low Growth Scenario Proportions**

Base	Forecast year	Base to Forecast year.	Square Root of forecast year.	High	Low
2018	2023	5	2.27	+5.590%	-5.590%
2018	2037	19	4.36	+10.900%	-10.900%

## Local Uncertainty

- 2.123 In addition to National Uncertainty, there is also uncertainty in Local Planning assumptions. There is uncertainty that the number of development proposals under a High Growth Scenario would increase and under a Low Growth Scenario would decrease. Both the demand and supply can be combined in the context of local uncertainty.
- 2.124 To account for local uncertainty both a low development scenario and high development scenario were produced.

## The High Alternative Growth Scenario

- 2.125 Some developments may be more likely to be delivered under a high growth development scenario. Of the potential developments identified in the corridor (paragraph 2.64 and Table 2.17), all were considered to be “Near Certain” or “More than Likely”. Therefore no additional local development assumptions were incorporated into the High Growth Scenario.
- 2.126 The High Growth Scenario should incorporate highway improvements that are considered to be optimistic. There are no additional highway scheme along the corridor that would impact the forecasts
- 2.127 Presented in Table 2.42 to Table 2.48 are the total volumes for each approach at each junction in both the opening year and design year under a high growth scenario.

**Table 2.42: Ollerton High Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
<b>A614(N)</b>	997	717	825	69	1185	855	1061	84
<b>A616(E)</b>	497	349	445	34	810	855	696	50
<b>A614(S)</b>	395	244	333	24	438	520	384	27
<b>A6075</b>	551	420	577	42	630	273	675	46
<b>A616(W)</b>	860	763	1212	74	980	476	1391	83
<b>TOTAL</b>	<b>3300</b>	<b>2493</b>	<b>3392</b>	<b>243</b>	<b>4043</b>	<b>2979</b>	<b>4207</b>	<b>290</b>

**Table 2.43: Deerdale Lane High Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
<b>A614(N)</b>	1125	678	1008	67	1380	820	1232	80
<b>Deerdale Lane (E)</b>	134	116	153	12	149	131	176	13
<b>A614(S)</b>	992	668	1003	65	1179	800	1247	79
<b>Total</b>	<b>2251</b>	<b>1462</b>	<b>2164</b>	<b>144</b>	<b>2708</b>	<b>1751</b>	<b>2655</b>	<b>172</b>

**Table 2.44: Mickledale High Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
<b>A614(N)</b>	1099	677	1011	66	1343	814	1231	80
<b>Mickledale Lane</b>	200	136	179	14	218	150	200	14
<b>A614(S)</b>	1017	722	1152	71	1204	854	1408	83
<b>Total</b>	<b>2316</b>	<b>1535</b>	<b>2342</b>	<b>151</b>	<b>2765</b>	<b>1818</b>	<b>2839</b>	<b>177</b>

Table 2.45: White Post High Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1107	712	1030	70	1201	770	1097	75
Mansfield Road(E)	228	167	252	16	242	177	264	17
A614(S)	1142	712	1257	70	1236	770	1341	75
Mansfield Road (W)	321	144	170	14	343	153	179	15
<b>Total</b>	<b>2798</b>	<b>1734</b>	<b>2708</b>	<b>170</b>	<b>3023</b>	<b>1871</b>	<b>2881</b>	<b>183</b>

Table 2.46: Warren Hill High Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1350	610	891	60	1465	667	958	65
A6097(SE)	471	296	558	29	532	333	614	33
A614(S)	568	350	714	34	597	369	743	36
<b>Total</b>	<b>2389</b>	<b>1257</b>	<b>2162</b>	<b>123</b>	<b>2594</b>	<b>1369</b>	<b>2314</b>	<b>134</b>

Table 2.47: Lowdham High Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1390	720	1017	70	1577	820	1180	80
Southwell Road	436	370	470	36	482	411	535	41
A6097(SE)	1277	902	1534	88	1444	1021	1770	100
A612	741	619	904	61	881	720	1067	70
<b>Total</b>	<b>3844</b>	<b>2611</b>	<b>3925</b>	<b>255</b>	<b>4384</b>	<b>2972</b>	<b>4552</b>	<b>291</b>

Table 2.48: Kirk Hill High Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1382	766	1295	65	1577	893	1404	76
Southwell Road	223	128	224	11	242	143	241	12
A6097(SE)	1035	752	1495	64	1166	862	1597	73
A612	169	77	329	7	186	87	370	8
<b>Total</b>	<b>2809</b>	<b>1723</b>	<b>3343</b>	<b>147</b>	<b>3171</b>	<b>1985</b>	<b>3612</b>	<b>169</b>

## The Low Alternative Growth Scenario

- 2.128 This scenario represents the utility of travel under a low economic growth outcome.
- 2.129 TAG Unit M4, paragraph 4.2.8 notes that in the low growth scenario, excluding some of the less likely sources of growth that were included in the core scenario may be appropriate. Given the potential developments identified in the corridor (paragraph 2.64 and Table 2.17), all were considered to be “Near Certain” or “More than Likely”, the local development assumptions in the Low Growth Scenario remain the same as the Core Scenario.
- 2.130 The supply network under this Low Growth Scenario is unchanged from the Core Scenario in accordance with TAG Unit M4, paragraph 4.2.10.
- 2.131 The supply network under this Low Growth Scenario is unchanged from the Core Scenario in accordance with TAG Unit M4, paragraph 4.2.10.
- 2.132 Table 2.49 to Table 2.55 below present the total volumes for each approach at each junction in both the opening year and design year under a Low Growth Scenario.

**Table 2.49: Ollerton Low Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	900	647	739	63	887	633	726	63
A616(E)	453	316	401	31	434	304	387	30
A614(S)	355	221	298	22	341	211	287	21
A6075	496	378	514	36	482	365	498	35
A616(W)	775	686	1080	67	767	665	1036	65
<b>TOTAL</b>	<b>2979</b>	<b>2248</b>	<b>3032</b>	<b>219</b>	<b>2911</b>	<b>2178</b>	<b>2934</b>	<b>214</b>

**Table 2.50: Deerdale Lane Low Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1016	613	901	60	1002	603	882	59
Deerdale Lane (E)	121	105	137	10	120	103	133	10
A614(S)	889	603	896	59	877	591	874	58
<b>Total</b>	<b>2026</b>	<b>1321</b>	<b>1934</b>	<b>129</b>	<b>1999</b>	<b>1297</b>	<b>1889</b>	<b>127</b>

**Table 2.51: Mickledale Low Growth – Inflow by approach arm (pcu/hr)**

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	993	611	902	60	979	601	881	59
Mickledale Lane	183	123	160	12	178	121	156	12
A614(S)	919	651	1030	64	907	640	1006	63
<b>Total</b>	<b>2095</b>	<b>1385</b>	<b>2092</b>	<b>136</b>	<b>2064</b>	<b>1362</b>	<b>2043</b>	<b>134</b>

Table 2.52: White Post Low Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1005	644	927	63	1003	638	902	62
Mansfield Road(E)	204	150	225	15	197	143	216	14
A614(S)	1031	644	1132	63	1019	638	1117	62
Mansfield Road (W)	288	130	152	13	279	124	130	12
<b>Total</b>	<b>2528</b>	<b>1567</b>	<b>2436</b>	<b>153</b>	<b>2498</b>	<b>1544</b>	<b>2365</b>	<b>151</b>

Table 2.53: Warren Hill Low Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A614(N)	1223	554	804	54	1218	556	753	54
A6097(SE)	429	270	505	26	448	282	523	28
A614(S)	511	316	640	31	485	302	618	29
<b>Total</b>	<b>2162</b>	<b>1139</b>	<b>1948</b>	<b>111</b>	<b>2151</b>	<b>1139</b>	<b>1894</b>	<b>111</b>

Table 2.54: Lowdham Low Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1252	648	908	63	1234	641	894	63
Southwell Road	390	332	418	33	373	320	403	32
A6097(SE)	1151	813	1369	79	1157	818	1363	80
A612	668	556	803	54	670	550	779	53
<b>Total</b>	<b>3461</b>	<b>2349</b>	<b>3498</b>	<b>229</b>	<b>3434</b>	<b>2329</b>	<b>3439</b>	<b>228</b>

Table 2.55: Kirk Hill Low Growth – Inflow by approach arm (pcu/hr)

From\To	2023				2037 (exc Dependent Development)			
	AM	IP	PM	OP	AM	IP	PM	OP
A6097(NE)	1270	702	1183	60	1339	757	1168	65
Southwell Road	193	117	204	10	202	118	199	10
A6097(SE)	953	688	1365	59	992	727	1321	61
A612	155	70	299	6	154	71	306	6
<b>Total</b>	<b>2571</b>	<b>1577</b>	<b>3051</b>	<b>135</b>	<b>2687</b>	<b>1673</b>	<b>2994</b>	<b>142</b>

## Junction Modelling

- 2.133 Computer models of the existing junction layouts and proposed schemes have been prepared by Nottinghamshire County Council's delivery partner, VIA East Midlands Ltd. ARCADY has been used to assess the capacity of roundabout junctions; PICADY has been used to assess the capacity of priority junctions (T-junctions and crossroads); and LINSIG has been used to assess the highway capacity of signalised junctions.
- 2.134 In the base models, the geometry required by the J9 models (ARCADY for roundabouts and PICADY for priority junctions) was measured from OS survey base drawings.
- 2.135 Queue surveys were carried out at the Ollerton and Lowdham roundabouts and at Deerdale Lane and the survey data used to validate the existing ARCADY and PICADY models for these junctions.
- 2.136 The results of the modelling for the opening year scenarios in the AM and PM peaks for the 2 roundabouts match within reasonable tolerance with the observed queue lengths. Notable observations include:

**Ollerton:** The Ollerton queue surveys demonstrate that the critical approaches in the AM were the A614 south and A616W, with consistent queues over a sustained period of time. The A614N approach was shown to queue extensively at times also, however, this was for shorter periods and fluctuated up (and back down) throughout the period. Consequently, the approaches which were critically assessed for queue length fit were the A614S (arm 2) and A616W (arm 4) approaches and the model fits this pattern. In the PM peak the critical approach is the A614S and, again, the model fits the observed queue lengths satisfactorily. The one difference is the queues on the A616W which were observed to be higher during a substantial part of the peak when compared to the model. This may be explained in part by the comment in the queue length survey regarding a Road Traffic Accident at the junction.

**Lowdham:** The queue survey shows the A612E approach to be the most under stress in the AM peak followed by the A6097N. This is mirrored in the Arcady model for the A612E. The A6097N shows lower queueing than noted on site, however, there was an element of exit blocking on the A6097 heading towards the river which may have affected the observed queues which could not be modelled in the isolated Arcady model. In the PM peak the predominant queue is on the A612W. The observed queues extended beyond the survey section for a substantial period of time. This behaviour is reflected in the model. The A6097S is the next worst performing arm and this is again reflected in the model.

**Deerdale:** The queue and delay surveys show the build up and discharge of vehicles for the movements which are required to give-way currently. In the AM peak the queueing is generally low, apart from the occasional build-up, the worst of which began at 07:31:32 where 10 vehicles were noted with the queue fully discharging after 6 minutes 41 seconds. The next peak appeared at 08:12:01 with a total discharge time of 2 minutes and 1 second; and a third occurrence at 08:34:10 where the full discharge time from the first vehicle appearing at the junction and the last discharging was 2 minutes 48 seconds. Other than these three occurrences the wait time at the give way line was minimal. For the right turn into Deerdale Lane, the wait time throughout the peak was minimal. In the PM peak there were only two periods of significant side road delay occurring at 17:01:20 and 17:17:56. Other than these two periods the side road performance was generally good with low levels of vehicle delays. Again, for the right turn in the delays were minimal. Given these low levels of queue overall, the model was not calibrated beyond ensuring that the geometric data used in the Picady model was correctly interpreted.

- 2.137 Input flow profiles were left at the default for the individual modelling programs and input flow data was based on PCU's. In all cases the modelling matched existing and therefore it is considered the tolerances stated within the TEAR are acceptable.
- 2.138 The above software produces outputs in terms of overall vehicle delay, and this is the main output that has been used in the Transport Economic Efficiency (TEE) calculations contained in this report.



2.139 Table 2.56 shows the software used for each junction and provides references to the relevant Appendix within which a scheme drawing and the full results are contained. The optioneering process to develop the schemedesigns in reported in the A614/A6097 Major Road Network Improvement Scheme, Options Appraisal Report (60595614/OAR, December 2020).

2.140 The scheme at White Post is a road safety scheme involving anti-skid road surfacing and minor maintenance improvements. Warren Hill is a minor geometric alteration. Neither provide measurable capacity improvements and have not been appraised, though the scheme costs are reflected in the value for money analysis.

**Table 2.56: Junction Layouts and Software Used to Assess Delay**

Junction	Existing Layout	Proposed Layout	Appendix
Ollerton	Roundabout (ARCADY)	Roundabout (ARCADY)	Appendix S
Deerdale	Crossroads (PICADY)	Signals (LINSIG)	Appendix T
Mickledale Lane	Crossroads (PICADY)	Signals (LINSIG)	Appendix U
White Post	Not Assessed	Not Assessed	N/A
Warren Hill	Not Assessed	Not Assessed	N/A
Lowdham	Roundabout (ARCADY)	Roundabout (ARCADY)	Appendix V
Kirk Hill	Signals (LINSIG)	Signals (LINSIG)	Appendix W

2.141 Table 2.57 to Table 2.61 summarise the modelling outputs at each scheme junction. The worst performing arm is shown in each instance, with the exception of Junction Delays which presents the combined delays across all arms of the junction

2.142 Ollerton roundabout is noted to be overcapacity (with a Ratio to Flow Capacity (RFC) value of over 1.0) in the AM and PM Peak periods in the baseline scenario, whilst Lowdham is overcapacity in the PM Peak period. Warren Hill and White Post are noted to approaching capacity (RFC value of over 0.85% in the baseline).

2.143 For existing junctions, RFC values above 0.85 are likely to produce queues which increase slowly. Above an RFC value of 1.0, a junction is more than likely to be at capacity (with resulting larger increases in queue length).

**Table 2.57: ARCADY Outputs – Ollerton Roundabout**

	2023						2037					
	Do Minimum			Do Something			Do Minimum			Do Something		
	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)
AM	67.5	1.13	85.92	1.9	0.66	5.29	89.1	1.17	112.92	2.2	0.69	5.61
PM	69.2	1.17	73.19	2.4	0.71	5.25	80.1	1.20	83.52	2.5	0.72	6.04
IP	3.9	0.81	9.82	0.9	0.48	3.61	4.5	0.83	10.75	0.9	0.48	3.69
OP	0.1	0.06	2.60	0	0.04	1.88	0.1	0.06	2.60	0	0.04	1.89

**Table 2.58: PICADY / LINSIG Outputs – Deerdale Lane**

	2023						2037					
	Do Minimum			Do Something			Do Minimum			Do Something		
	Max Queue (PCU)	RFC	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)
AM	0.4	0.28	1.22	8.7	50.80	5.51	0.4	0.31	1.32	9.2	52.50	44.01
PM	0.4	0.30	1.25	8	48.20	5.28	0.5	0.32	1.29	8.2	49.20	5.53
IP	0.2	0.16	1.03	5	33.30	2.37	0.2	0.17	1.04	5.2	34.30	2.53
OP	0	0.01	0.59	0.4	3.40	0.02	0.0	0.01	0.57	0.4	3.40	0.02

**Table 2.59: PICADY / LINSIG Outputs – Mickledale Lane**

	2023						2037					
	Do Minimum			Do Something			Do Minimum			Do Something		
	Max Queue (PCU)	RFC	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)
AM	0.6	0.39	1.86	9.6	55.10	7.09	0.7	0.41	1.99	10	57.10	7.69
PM	0.6	0.36	2.00	9.2	55.20	7.65	0.6	0.37	2.07	9.5	56.50	8.03
IP	0.2	0.18	1.51	5.5	37.20	3.03	0.3	0.19	1.55	5.8	38.50	3.24
OP	0.0	0.01	0.78	0.4	3.60	0.02	0.0	0.01	0.76	0.5	3.70	0.03

**Table 2.60: ARCADY – Lowdham**

	2023						2037					
	Do Minimum*			Do Something			Do Minimum*			Do Something		
	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)	Max Queue (PCU)	RFC	Junction Delay (s)
AM	6.6	0.9	24.62	5.4	0.85	12.35	13.9	1.00	40.22	7.9	0.9	17.09
PM	117.5	1.32	121.15	8	0.9	11.39	133.1	1.37	153.82	11.9	0.94	15.12
IP	1.4	0.58	5.53	1.1	0.52	3.75	1.6	0.61	5.99	1.2	0.55	3.97
OP	0	0.05	2.12	0	0.4	1.86	0.1	0.05	2.12	0.1	0.5	1.86

**Table 2.61: LINSIG Outputs – Kirk Hill**

	2023						2037					
	Do Minimum			Do Something			Do Minimum			Do Something		
	Mean Max Queue (PCU))	Degree of Saturation (%)	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)	Mean Max Queue (PCU)	Degree of Saturation (%)	Junction Delay (s)
AM	120.4	5.00	89.68	16.4	66.9	16.26	190.7	136.60	163.15	18.9	72.1	18.26
PM	270.5	140.90	352.92	21.7	79.1	30.17	303	148.30	436.92	23.7	83.6	35.06
IP	14.1	53.30	5.15	6.7	33.6	4.74	13.1	55.70	6.70	6.1	33.9	5.75
OP	0.7	4.80	0.03	0.5	3.1	0.03	0.7	4.70	0.03	0.5	2.9	0.04

2.144 Presented in Table 2.57 to Table 2.61 are the volume to capacity ratio (RFC) for the worst performing arm of each junction, indicating where there is overcapacity (where the ratio flow to capacity value is over 1.0). A comparison of the RFC values between the Do Minimum and Do something values shows that with improvement all the junctions work within capacity (below RFC of 1.0) in the forecast year of 2037.

2.145 The scheme improvements, whilst providing localised capacity improvements, are not expected to materially impact the Strategic Road Network (SRN). The A46 (accessed from the A46/A6097 Saxondale grade separated junction) is 3.3 miles south of Lowdham Roundabout at the southern end of the A614 – A6097 corridor). To the north the A1 is 6.7miles north of the Ollerton roundabout. The limited route choice along the A614-A6097 corridor has supported a fixed trip appraisal methodology which assumes that no trips reassign into the corridor as a result of the scheme. This is supported by the strategic model testing using the MCHM which has demonstrated that reassignment and VDM impacts resulting from the scheme is not material.

## 3. Economic Appraisal Methodology

### Value for Money

- 3.1 Value for money' is one of the key considerations of any decision involving the use of public funds across government. It is considered in the Economic Case of the 'Five Case Model' of decision-making recommended in the 'Green Book' methodology by Her Majesty's Treasury (HMT) and adopted by the Department for Transport (DfT) in the "Transport Business Case".
- 3.2 The DfT's approach to assessing and reporting a value for money case is detailed in the document "Value for Money Framework", (DfT, 2017).
- 3.3 This document notes that some methods for identifying outcomes, impacts and estimating their monetary values are more widely accepted than others, as they are well-researched, tried-and-tested, and robust. To reflect this in a way which is useful for decision-making, the DfT distinguishes between three 'types' of monetised impacts: established, evolving, and indicative monetised impacts. These are treated differently in the value for money assessment and presented separately in Value for Money Statements.
- 3.4 Table 3.1 below summaries the typical impacts of a transport scheme as set out in Box 4.4 of the Value for Money Framework document.

**Table 3.1: Typical impacts of a Transport Scheme (DfT VfM Framework, 2017)**

<b>Established Monetised Impacts</b>	<b>Evolving Monetised Impacts</b>	<b>Indicative Monetised Impacts</b>	<b>Non-monetised Impacts</b>
<i>Included in initial and adjusted metrics</i>	<i>Included in adjusted metrics</i>	<i>Considered after metric using switching values approach</i>	
Journey time savings	Reliability	Moves to more/less productive jobs	Security
Vehicle operating costs	Static clustering	Induced Investment	Severance
Accidents	Output in imperfectly competitive markets	Supplementary Economy Modelling	Accessibility
Physical Activity	Labour Supply		Townscape
Journey Quality			Historic Environment
Noise			Landscape
Air Quality			Biodiversity
Greenhouse Gases			Water environment
Indirect Tax			Affordability
			Access to services
			Option and non-use values

- 3.5 This document describes the approach and appraisal results of the established monetised impacts:
- Journey time savings
  - Vehicle operating costs
  - Accidents
  - Noise
  - Air Quality
  - Greenhouse Gases (Carbon)
  - Indirect Tax
- 3.6 This EAP document also describes the approach and appraisal results of the following indicative monetised impacts:
- Induced Investment
    - Land Value Uplift associated with dependent development; and
    - The Transport External Costs associated with dependent development.
    - Land Amenity Value

## Scheme Costs

- 3.7 Via East Midlands has provided estimates of the costs of delivering the six junctions within the scheme. These costs have also been reviewed by a contractor selected from the council’s MHA framework.
- 3.8 Table 3.2 shows the anticipated construction start dates, and opening year of each of the junctions.

**Table 3.2: Construction Start Dates and Opening Years**

Junction	Construction Start Date	Opening Year
Ollerton	Sep-22	May-24
Mickledale	Mar-25	Dec-25
White Post	Jan-25	Jan-25
Warren Hill	Aug-25	Aug-25
Lowdham	Jun-24	Dec-24
Kirk Hill	Apr-23	Dec-23

- 3.9 Scheme estimates were provided in 2020 Q1 prices including a 15% investment cost optimism bias. The following items are included in the cost estimate:
- Construction Costs;
  - Preparation;
  - Supervision Costs; and
  - Land,
- 3.10 The cost proforma summary, which includes an assessment of cost inflation, is presented in Appendix X.

3.11 Table 3.3 to Table 3.8 show the anticipated expenditure profiles for each of the junctions.

**Table 3.3: Expenditure Profile (2020 Prices) - Ollerton**

	2020	2021	2022	2023	2024	Total
Preparation	£299,228	£230,000	£77,509	-	-	£606,737
Construction	-	-	£3,157,096	£5,396,983	£2,248,743	£10,802,822
Supervision	-	-	£193,484	£115,000	£57,500	£365,984
Land	-	£460,000	£68,961	-	-	£528,961
<b>Total</b>	<b>£299,228</b>	<b>£690,000</b>	<b>£3,497,050</b>	<b>£5,511,983</b>	<b>£2,306,243</b>	<b>£12,304,503</b>

**Table 3.4: Expenditure Profile (2020 Prices) – Deerdale Lane**

	2020	2021	2022	2023	2024	Total
Preparation	-	£86,250	£86,250	-	-	£172,500
Construction	-	-	-	£5,077,659	£5,089,256	£10,166,915
Supervision	-	-	-	£115,000	£115,000	£230,000
Land	-	-	-	£250,341	-	£250,341
<b>Total</b>	<b>-</b>	<b>£86,250</b>	<b>£86,250</b>	<b>£5,443,001</b>	<b>£5,204,256</b>	<b>£10,819,757</b>

**Table 3.5: Expenditure Profile (2020 Prices) – Mickledale Lane**

	2020	2021	2022	2023	2024	Total
Preparation	£92,000	£138,000	£57,500	-	-	£287,500
Construction	-	-	-	-	£6,126,770	£6,126,770
Supervision	-	-	-	-	£57,500	£57,500
Land	-	-	£115,000	£119,940	-	£234,940
<b>Total</b>	<b>£92,000</b>	<b>£138,000</b>	<b>£172,500</b>	<b>£119,940</b>	<b>£6,184,270</b>	<b>£6,706,710</b>

**Table 3.6: Expenditure Profile (2020 Prices) – White Post**

	2020	2021	2022	2023	2024	2025	Total
Preparation	-	-	-	-	-	-	-
Construction	-	-	-	-	-	£309,063	£309,063
Supervision	-	-	-	-	-	-	-
Land	-	-	-	-	-	-	-
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>£309,063</b>	<b>£309,063</b>

**Table 3.7: Expenditure Profile (2020 Prices) – Warren Hill**

	2020	2021	2022	2023	2024	Total
Preparation	-	-	-	-	-	-
Construction	-	-	-	£278,156	-	£278,156
Supervision	-	-	-	-	-	-
Land	-	-	£28,750	-	-	£28,750
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>£306,906</b>

**Table 3.8: Expenditure Profile (2019 Prices) - Lowdham**

	2020	2021	2022	2023	2024	Total
Preparation	£126,500	£115,000	£57,500	-	-	£299,000
Construction	-	-	-	£3,291,338	£3,570,849	£6,862,187
Supervision	-	-	-	-	£78,484	£78,484
Land	-	-	£115,000	£31,285	-	£146,285
<b>Total</b>	<b>£126,500</b>	<b>£115,000</b>	<b>£172,500</b>	<b>£3,322,623</b>	<b>£3,649,333</b>	<b>£7,385,956</b>

**Table 3.9: Expenditure Profile (2020 Prices) – Kirk Hill**

	2020	2021	2022	2023	2024	Total
Preparation	£69,000	£92,000	£57,500	-	-	£218,500
Construction	-	-	-	£5,332,959	-	£5,332,959
Supervision	-	-	-	£78,484	-	£78,484
Land	-	-	£132,289	£155,211	-	£287,500
<b>Total</b>	<b>£69,000</b>	<b>£92,000</b>	<b>£189,789</b>	<b>£5,566,654</b>	<b>-</b>	<b>£5,917,443</b>

3.12 Table 3.10 below presents a summary of the cost estimates at each junction.

**Table 3.10: Scheme Costs Estimates (2020 prices)**

	Construction	Preparation	Land	Supervision	Total
Ollerton Roundabout	£10,802,822	£606,737	£528,961	£365,984	<b>£12,304,503</b>
Lowdham Roundabout	£6,862,187	£299,000	£146,285	£78,484	<b>£7,385,956</b>
Warren Hill	£278,156	£0	£28,750	£0	<b>£306,906</b>
Mickledale Lane	£6,126,770	£287,500	£234,940	£57,500	<b>£6,706,710</b>
Deerdale Lane	£10,166,915	£172,500	£250,341	£230,000	<b>£10,819,757</b>
White Post Roundabout	£309,063	£0	£0	£0	<b>£309,063</b>
Kirk Hill	£5,332,959	£218,500	£287,500	£78,484	<b>£5,917,443</b>
<b>Total</b>	<b>£39,878,872</b>	<b>£1,584,237</b>	<b>£1,476,777</b>	<b>£810,452</b>	<b>£43,750,338</b>

3.13 As part of the scheme design development, the updated cost estimates at Deerdale Lane junction has increased by £5.83m (excluding optimism bias) following the return of significant utility diversion cost estimates in October 2020. This, along with updated cost estimates for the other junctions results in a package cost estimate of £43.75m. This has resulted in a package that is not affordable. Given the large increase in cost, and the previous poor value for money case of the junction in isolation, the Deerdale Lane improvement has been removed from the package of measures. No further analysis of Deerdale Lane is presented.

**Table 3.11: Scheme Costs Estimates (2020 prices) – Excluding Deerdale**

	Construction	Preparation	Land	Supervision	Total
Ollerton Roundabout	£10,802,822	£606,737	£528,961	£365,984	<b>£12,304,503</b>
Lowdham Roundabout	£6,862,187	£299,000	£146,285	£78,484	<b>£7,385,956</b>
Warren Hill	£278,156	£0	£28,750	£0	<b>£306,906</b>
Mickledale Lane	£6,126,770	£287,500	£234,940	£57,500	<b>£6,706,710</b>
White Post Roundabout	£309,063	£0	£0	£0	<b>£309,063</b>
Kirk Hill	£5,332,959	£218,500	£287,500	£78,484	<b>£5,917,443</b>
<b>Total</b>	<b>£29,711,957</b>	<b>£1,411,737</b>	<b>£1,226,436</b>	<b>£580,452</b>	<b>£32,930,581</b>

- 3.14 The latest cost estimate for the package of measures is currently £32.94 million. The project requires a total contribution of £24.340 million from the DfT, with the remaining sum being funded by S106 contributions, Community Infrastructure Levy and County Council capital contributions. Section 106 contributions from developers including the promoter of the Thoresby Colliery redevelopment site at Edwinstowe (Harworth Group Plc) has paid a S106 contribution of £1.198 million. The total value from S106 contributions comes to £1.746 million (including Harworth Group S106 contribution).
- 3.15 Discussions are ongoing with developers and district council partners regarding possible developer and Community Infrastructure Levy contributions to help meet the 15% local financial contribution ie any costs over and above the requested DfT contribution. Harworth Group Plc (the promoter of the Thoresby Colliery redevelopment site at Edwinstowe) for example has already paid a financial contribution of £1.198m. This contribution is based on an agreed proportion of the cost of the Ollerton roundabout element of the improvement package. All future developer contributions would be index linked. Nottinghamshire County Council has agreed to underwrite any shortfall in local funding in order to deliver the local contribution in full towards the proposed package of works.
- 3.16 The funding of the scheme is a combination of various financial contributions, including a maximum contribution of £24.34m from DfT with the remainder from S106 / CIL / Nottinghamshire County Council capital contributions.
- 3.17 The supplied expenditure profiles were calculated based upon cost estimates for each financial year prepared in 2020 Q1 prices including a 15% investment cost optimism bias and then inflated to outturn costs, using projected construction related inflation. These costs were then rebased to 2010 prices – all costs were in the factor cost units of account (sometimes referred to as resource costs). The costs were allocated to the calendar years of expenditure. Cost incurred in 2020 are considered historic and have been removed from the Present Value Cost (PVC) calculation.
- 3.18 The Present Value of Cost (PVC) in 2010 market prices, discounted to a 2010 present value year, has been calculated as:
- Ollerton: £6,806,000
  - Mickledale Lane: £4,333,000
  - White Post: £184,000
  - Warren Hill: £196,000
  - Lowdham: £4,242,000
  - Kirk Hill: £3,444,000
  - **Total: £19,205,000**



## TUBA Assessment

- 3.19 The economic appraisal of the new scheme proposals was carried out using the DfT's TUBA software (Version 1.9.14).
- 3.20 This assessment uses 'economics\_TAG\_db1\_9\_13\_1.txt' as the Economics Parameters file. While this is the most up to date economics file available, it must be noted this is based upon WebTAG Data Book (v1.13.1) July 2020 release.
- 3.21 The economic appraisal has been calculated for 60 years, as required by the DfT (TAG, Unit 3.5.4). The appraisal period was from 2023 to 2082. The opening years of the six junctions do not occur in a single year (see Table 3.2) although for the purposes of the TUBA assessment a common opening year of 2023 was used.
- 3.22 A discount rate of 3.5% for the first 30 years of appraisal and 3.0% for the second 30 years of appraisal has been used. All monetary values set down in this report are in 2010 market price units of accounting, discounted to 2010.
- 3.23 The delay in seconds from the junction model outputs was converted into hours and input into the TUBA model. The distance used nominal values (0.5km) because the approach speeds for the Do Minimum and Do Something scenarios, are assumed not change. The distance element of the calculation only affects VOC and Greenhouse Gas changes, which as discussed below, are not included in this assessment.
- 3.24 Table 3.12 to Table 3.14 show the split of vehicle types used based on the manual classified counts described in Sections 2.10 – 2.17 for each junction respectively.
- 3.25 Due to the absence of MCC count data in the Off Peak, the vehicle splits from the IP scenario have been taken to represent the likely vehicle splits in the OP period.
- 3.26 The TUBA input and full output data is available within the following appendices:
- Ollerton – Appendix Y
  - Mickledale Lane – Appendix Z
  - Lowdham – Appendix AA
  - Kirk Hill – Appendix BB

**Table 3.12: Vehicle type by period (%) for Ollerton**

User Class	AM	PM	IP	OP
Cars	80.3%	85.5%	76.8%	76.8%
LGV	12.8%	11.1%	13.8%	13.8%
OGV1	3.8%	1.6%	5.5%	5.5%
OGV2	3.1%	1.9%	3.9%	3.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Table 3.13: Vehicle type by period (%) for Mickledale Lane**

User Class	AM	PM	IP	OP
Cars	79.1%	82.4%	72.9%	72.9%
LGV	14.3%	13.7%	14.7%	14.7%
OGV1	3.6%	2.1%	7.3%	7.3%
OGV2	3.0%	1.8%	5.1%	5.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Table 3.14: Vehicle type by period (%) for Lowdham**

User Class	AM	PM	IP	OP
Cars	82.6%	84.5%	77.6%	77.6%
LGV	12.5%	12.3%	13.6%	13.6%
OGV1	3.0%	1.9%	5.7%	5.7%
OGV2	1.9%	1.4%	3.1%	3.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

**Table 3.15: Vehicle type by period (%) for Kirk Hill**

User Class	AM	PM	IP	OP
Cars	84.9%	86.6%	81.6%	86.1%
LGV	12.8%	10.5%	13.6%	5.5%
OGV1	0.8%	0.7%	1.6%	2.5%
OGV2	1.5%	2.2%	3.3%	5.9%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

3.27 Journey Purpose splits for work and non-work, detailed in Table A 1.3.4 from the July 2020 release of the WebTAG Databook (v1.13.1) was applied to Table 3.12 to Table 3.14 in order to split observed vehicle type proportions into TUBA User Classes. The results of this process are shown in Table 3.16 to Table 3.18 which lists the split of total vehicles into each relevant User Class by time period.

3.28 These factors were applied to the total demand flow matrices via the TUBA input files.

**Table 3.16: Factor applied to Ollerton vehicle turning matrix**

User Class	AM	PM	IP	OP
Car - business	0.0558	0.0437	0.0553	0.0331
Car - Commuting	0.3076	0.2784	0.0867	0.2211
Car - Other	0.4397	0.5325	0.6268	0.5146
LGV – Other	0.0154	0.0133	0.0165	0.0165
LGV - Business	0.1126	0.0973	0.1213	0.1213
OGV1 - Business	0.0382	0.0160	0.0547	0.0547
OGV2 - Business	0.0307	0.0188	0.0386	0.0386
<b>Total</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>

**Table 3.17: Factor applied to Mickledale Lane vehicle turning matrix**

User Class	AM	PM	IP	OP
Car - business	0.0550	0.0421	0.0524	0.0314
Car - Commuting	0.3030	0.2685	0.0823	0.2097
Car - Other	0.4332	0.5135	0.5947	0.4882
LGV – Other	0.0172	0.0164	0.0176	0.0176
LGV - Business	0.1261	0.1204	0.1288	0.1288
OGV1 - Business	0.0358	0.0211	0.0730	0.0730
OGV2 - Business	0.0297	0.0180	0.0513	0.0513
<b>Total</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>

**Table 3.18: Factor applied to Lowdham vehicle turning matrix**

User Class	AM	PM	IP	OP
Car - business	0.0574	0.0432	0.0558	0.0334
Car - Commuting	0.3164	0.2751	0.0876	0.2232
Car - Other	0.4523	0.5263	0.6328	0.5196
LGV – Other	0.0150	0.0147	0.0164	0.0164
LGV - Business	0.1100	0.1078	0.1199	0.1199
OGV1 - Business	0.0301	0.0185	0.0573	0.0573
OGV2 - Business	0.0188	0.0143	0.0302	0.0302
<b>Total</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>

**Table 3.19: Factor applied to Kirk Hill vehicle turning matrix**

User Class	AM	PM	IP	OP
Car - business	0.0590	0.0443	0.0586	0.0371
Car - Commuting	0.3252	0.2821	0.0920	0.2476
Car - Other	0.4649	0.5395	0.6649	0.5764
LGV – Other	0.0154	0.0126	0.0163	0.0066
LGV - Business	0.1126	0.0927	0.1192	0.0481
OGV1 - Business	0.0085	0.0065	0.0157	0.0252
OGV2 - Business	0.0145	0.0222	0.0332	0.0590
<b>Total</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>	<b>1.0000</b>

### Annualisation

- 3.29 TUBA bases its economic results on yearly data. The traffic model is based on hourly flows. Annualisation factors are used to convert modelled hourly traffic conditions (flows, delays, and journey times) into yearly travel benefits.
- 3.30 The annualisation process used to determine annualisation factors for use in the A614/A6097 appraisal is reported in Appendix CC.
- 3.31 Annualisation factors have been calculated for the year June 2017 to May 2018. Each junction has been calculated individually with multiple count locations where available. For annualisation factors to be calculated a count along a major road is needed that meets the following criteria:
- The count is in a prominent position in relation to the modelled area,
  - a full year of traffic flow data exists (divided into hourly intervals) with few gaps; and
  - the flows at the count location are high enough such that the count provides a good representation of the daily flow changes throughout the detailed modelled area.
- 3.32 In the year June 2017 to May 2018 there were 253 weekdays, 104 weekend days and 8 bank holidays. For the purposes of the Annualisation calculations weekend days and bank holidays were classified together.
- 3.33 From the annual two-way flow data, average hourly flows by time of day were calculated with the results shown below in Table 2 and Table 3. As the weekend flow profile does not follow the same pattern as the weekday flow profile the average flow on a weekend day between the hours of 07:00 – 19:00 is assumed to be comparable to an average weekday flow between the hours 10:00 – 16:00. Weekday and Weekend OP average flows (19:00 – 07:00) are assumed to be directly comparable.
- 3.34 The hourly two-way flows were plotted in ascending order and, using calculated annual average AM (weekday), IP (weekday and weekend), PM (weekday) and OP (weekday and weekend) hourly flows, annualisation factors were derived by calibrating the area under the curves in such a way as to approximate the number of observed trips to an acceptable level (detailed in Appendix CC).
- 3.35 The annualisation factors used in the appraisal are shown in Table 3.20

**Table 3.20: Annualisation factors for Appraisal**

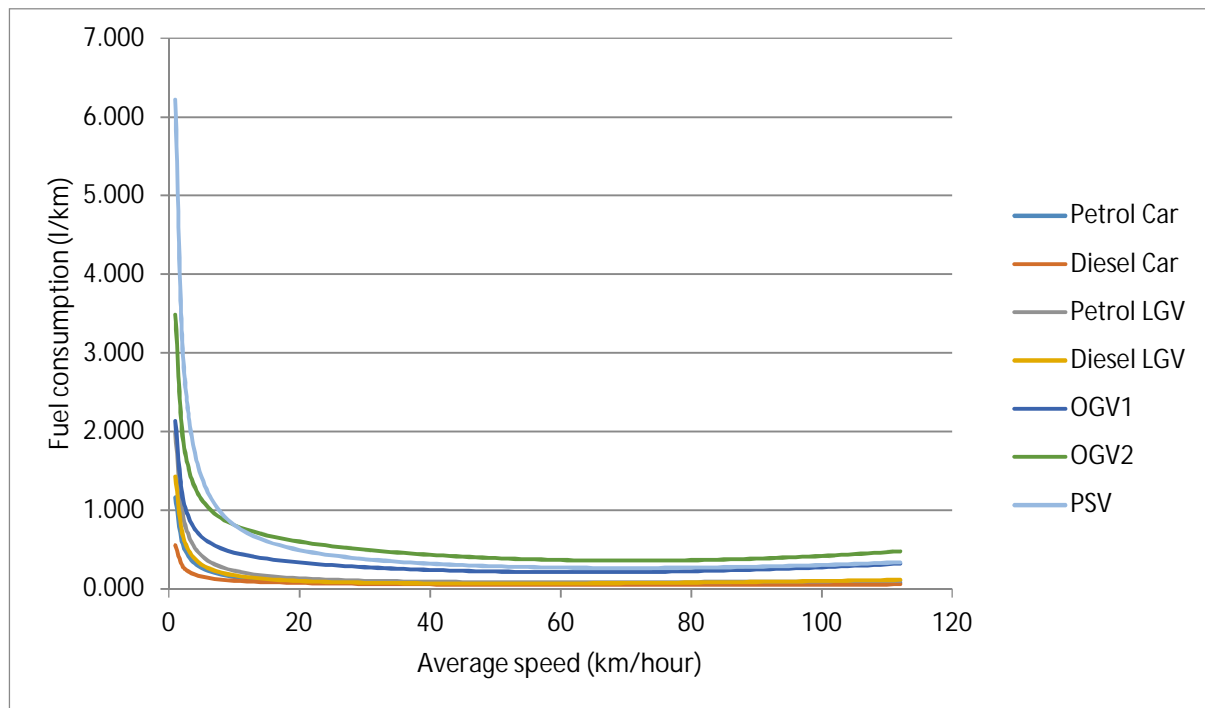
Time period	Total hours
AM	648
PM	677
Interpeak	2,997
Offpeak	4,438
<b>Total</b>	<b>8,760</b>

### Vehicle Operating Costs

- 3.36 Vehicle operating cost savings (fuel and non-fuel) are calculated as part of the assessment of TEE benefits and costs using the total travel distance from the model output. Vehicle Operating Costs are directly related to fuel consumption and change in speeds between the DM and DS options.
- 3.37 As each junction within the scheme was modelled in isolation, only a nominal length has been modelled on each approach to the junction.

- 3.38 When considering changes in speed at an isolated junction, the average journey speed through a junction is likely to be low. A Do Something option is therefore more likely to have a proportionally greater effect when considering only the trips that pass through the junction, rather than when considering the change in the overall travel time of a full trip length. For instance, over a short distance, the impact of a small scheme junction improvement may change the average speed through the junction from 15kph to 20kph (33% increase in speed), however the impact of the same junction improvement may change the average speed of a 20 mile journey from 40kph to 42kph (5% increase in journey speed).
- 3.39 Based upon the fuel consumption curve taken from the WebTAG data book, Worksheet A1.3.8, as shown in Figure 3-1, it can be seen that the fuel consumption rises steeply at low speeds.

**Figure 3-1: Fuel Consumption Curve**



- 3.40 This steep change in fuel efficiency at low speeds is likely to over exaggerate the VOC benefits of the Junction Schemes, if partial trip lengths were to be used.
- 3.41 Because the full trip-length of journeys are not represented in the TEE analysis, it was therefore decided that the VOC benefits would be excluded from the junction economic appraisals. In the case where a scheme is predicted to improve journey times, and therefore make vehicle operating costs more efficient, it is considered that excluding the VOC costs will underestimate the economic benefits of the schemes.

### Greenhouse Gases and Indirect Taxes

- 3.42 Indirect tax costs are a direct product of the change in vehicle operating costs, for the same reasons as those described in the previous paragraphs, these costs will not form part of the appraisal process and will be omitted from the AMCB Tables for the individual junctions. This approach will under-estimate the benefits of the scheme.
- 3.43 Greenhouse Gases have been assessed outside of TUBA. The TUBA greenhouse gas analysis has been excluded from economic appraisal.

### Delays during Construction

- 3.44 An economic assessment of delays under construction was undertaken. The cost to road users of delays caused by the scheme construction was assessed and factored to the longest construction phase length at each junction undergoing construction activities. The Present Value Benefits (PVB) results for each junction and the combination of these results generated by the delays under construction produced a disbenefit value of -£15.809 million as seen in Figure 3-2. A Technical note was produced detailing the full results and is within Appendix DD.

**Figure 3-2 Analysis of Monetised Cost and Benefits (AMCB) of delays during construction - (£'000s 2010 Market Prices, discounted to a 2010 present value year)**

Number of weeks/months at each junction	20mo	20w	36w	30w	
	Results output from TUBA - per junction				
	Ollerton	Mickledale	Lowdham	Kirkhill	Total
Economic Efficiency: Consumer Users (Commuting)	-852	7	-2,468	-352	-3,665
Economic Efficiency: Consumer Users (Other)	-1,220	15	-5,339	-1,243	-7,788
Economic Efficiency: Business Users and Providers	-748	12	-3,601	-19	-4,357
<b>Present Value of Benefits (PVB)</b>	<b>-2,820</b>	<b>33</b>	<b>-11,409</b>	<b>-1,614</b>	<b>-15,809</b>

- 3.45 As shown in the table above, Mickledale Lane presents a positive benefit. During construction the minor arm of the 3-arm priority junction is closed, therefore, the junction acts as a free-flowing carriageway with a speed restriction imposed. Due to the reduced flow and delay due to turning movements the junction presented a slight positive benefit during construction. It is noted that Mickledale Phase 2 and 3 are very similar with minor arm, Mickledale Road closed. So as not to overestimate the benefits accrued, recognising that the adopted methodology does not reflected the cost of enforced rerouting due to road closures, Stage 4 has not been included in the delays during construction analysis. This is considered a robust approach.
- 3.46 The large disbenefits at Lowdham predominately occurring in phases 2 and 3 (Four-stage temporary traffic signals). Given the large disbenefits, it is anticipated that the Lowdham delays during construction can be reduced with more detailed consideration of the proposed traffic management (temporary 4-stage traffic signal) arrangement.

### Maintenance

- 3.47 VIA East Midlands prepared an estimate of the ongoing yearly maintenance costs for the A614 MRN Improvement scheme. This estimate of maintenance costs represents the increase in maintenance costs, above existing commitments, to maintain and update the new junctions.
- 3.48 Table 3.21 shows a summary of the estimated operation and maintenance cost impact over the 60-year assessment period, in undiscounted costs, and with a year 1 price advised by VIA East Midlands to be at Q1 2020 prices.

**Table 3.21: Maintenance Estimates (2020 prices)**

	Maintenance
Ollerton Roundabout	£1,058,629
Lowdham Roundabout	£502,856
Mickledale Lane	£1,045,667
Kirk Hill	£803,309
<b>Total</b>	<b>£3,410,461</b>

- 3.49 It was assumed that maintenance costs increase at the same rate as the GDP deflator (i.e. there is zero change in real terms, once inflation has been accounted for). A factor of 0.868 (July 2016 figures) was applied to convert the 2019 prices to 2010 prices.
- 3.50 The factor costs were converted to market prices, by the TUBA software, which applies a factor of 1.19.
- 3.51 The stream of Maintenance costs by junction is presented in Appendix EE.

## 4. Core Travel Time Benefits

- 4.1 Table 4.1 to Table 4.4 show, in monetary terms, the change due to the Do-Something, relative to the Do-Minimum scenario, whilst Table 4.5 is the summation across all junctions. All values in the Transport Economic Efficiency (TEE) table are in 2010 market prices and discounted to a 2010 present value year.
- 4.2 The purpose of the Transport Economic Efficiency (TEE) table is to summarise and present transport user benefits. It shows the net user benefits by group (consumers and businesses, including transport operators), by mode of transport and by impact (time, vehicle operating costs, etc).

**Table 4.1: TEE Table (£ thousands) - Ollerton**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	6,719		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-852		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>5,867</b>		
Consumer - Other – Travel Time	9,116		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,220		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>7,896</b>		
Business – Travel Time	6,561	1,057	5,504
Business - VOC	Not Assessed		
Business – During Construction	-748		
Operating Costs	0		
Other Business – Developer contributions	-455		
<b>NET BUSINESS IMPACT</b>	<b>5,358</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>19,121</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.



**Table 4.2: TEE Table (£ thousands) – Mickledale Lane**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	-1,282		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	7		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>-1,275</b>		
Consumer - Other – Travel Time	-3,138		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	15		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-3,123</b>		
Business – Travel Time	-2,621	-318	-2,303
Business - VOC	Not Assessed		
Business – During Construction	12		
Operating Costs	0		
Other Business – Developer contributions	-79		
<b>NET BUSINESS IMPACT</b>	<b>-2,688</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-7,087</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 4.3: TEE Table (£ thousands) - Lowdham**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	5,852		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-2,468		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>3,384</b>		
Consumer - Other – Travel Time	8,311		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-5,339		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>2,972</b>		
Business – Travel Time	4,973	813	4,159
Business - VOC	Not Assessed		
Business – During Construction	-3,601		
Operating Costs	0		
Other Business – Developer contributions	-335		
<b>NET BUSINESS IMPACT</b>	<b>1,037</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>7,392</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 4.4: TEE Table (£ thousands) – Kirk Hill**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	10,374		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-352		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>10,022</b>		
Consumer - Other – Travel Time	21,391		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,243		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>20,148</b>		
Business – Travel Time	1,723	218	1,505
Business - VOC	Not Assessed		
Business – During Construction	-19		
Operating Costs	0		
Other Business – Developer contributions	-255		
<b>NET BUSINESS IMPACT</b>	<b>1,449</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>31,619</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 4.5: TEE Table (£ thousands) – All Junctions**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	21,663		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>17,998</b>		
Consumer - Other – Travel Time	35,680		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>27,892</b>		
Business – Travel Time	10,636	1,770	8,865
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1124		
<b>NET BUSINESS IMPACT</b>	<b>5,155</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>51,046</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

4.3 The Present Value of Transport and Economic Efficiency returned the following annualised and discounted user time benefits for the 60-year appraisal period is **£51.0 million**, showing that as a combined package, the scheme delivers positive TEE benefits, in a Core growth scenario.

## 5. High Growth Scenario Travel Time Benefits

- 5.1 Table 5.1 to Table 5.4 show, in monetary terms, the change due to the Do-Something, relative to the Do-Minimum in a High Growth scenario, whilst Table 5.5 is the summation across all junctions. All values in the Transport Economic Efficiency (TEE) table are in 2010 market prices and discounted to a 2010 present value year.
- 5.2 The purpose of the Transport Economic Efficiency (TEE) table is to summarise and present transport user benefits. It shows the net user benefits by group (consumers and businesses, including transport operators), by mode of transport and by impact.

**Table 5.1: High Growth Scenario - TEE Table (£ thousands) - Ollerton**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	16,553		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-852		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>15,701</b>		
Consumer - Other – Travel Time	22,627		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,220		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>21,407</b>		
Business – Travel Time	19,118	2,975	16,143
Business - VOC	Not Assessed		
Business – During Construction	-748		
Operating Costs	0		
Other Business – Developer contributions	-455		
<b>NET BUSINESS IMPACT</b>	<b>17,915</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>55,023</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 5.2: High Growth Scenario - TEE Table (£ thousands) – Mickledale Lane**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	-525		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	7		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>-518</b>		
Consumer - Other – Travel Time	-2,370		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	15		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-2,355</b>		
Business – Travel Time	-2,057	-228	-1,829
Business - VOC	Not Assessed		
Business – During Construction	12		
Operating Costs	0		
Other Business – Developer contributions	-79		
<b>NET BUSINESS IMPACT</b>	<b>-2,124</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-4,998</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 5.3: High Growth Scenario - TEE Table (£ thousands) - Lowdham**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	22,265		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-2,468		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>19,797</b>		
Consumer - Other – Travel Time	30,166		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-5,339		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>24,827</b>		
Business – Travel Time	18,393	3,051	15,342
Business - VOC	Not Assessed		
Business – During Construction	-3,601		
Operating Costs	0		
Other Business – Developer contributions	-335		
<b>NET BUSINESS IMPACT</b>	<b>14,457</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>59,080</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 5.4: High Growth Scenario - TEE Table (£ thousands) – Kirk Hill**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	7,664		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-352		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>7,312</b>		
Consumer - Other – Travel Time	12,875		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,243		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>11,632</b>		
Business – Travel Time	1,233	163	1,070
Business - VOC	Not Assessed		
Business – During Construction	-19		
Operating Costs	0		
Other Business – Developer contributions	-255		
<b>NET BUSINESS IMPACT</b>	<b>959</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>19,903</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.



**Table 5.5: High Growth Scenario - TEE Table (£ thousands) – All Junctions**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	45,957		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>42,292</b>		
Consumer - Other – Travel Time	63,298		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>55,510</b>		
Business – Travel Time	36,687	5,961	30,726
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1124		
<b>NET BUSINESS IMPACT</b>	<b>31,206</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>129,009</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

5.3 The Present Value of Transport and Economic Efficiency returned the following annualised and discounted user time benefits for the 60-year appraisal period is **£129.0 million**, showing that as a combined package, the scheme delivers positive TEE benefits under a high growth scenario.

## 6. Low Growth Scenario Travel Time Benefits

- 6.1 Table 6.1 to Table 6.4 show, in monetary terms, the change due to the Do-Something, relative to the Do-Minimum scenario in a Low Growth scenario, whilst Table 6.5 is the summation across all junctions. All values in the Transport Economic Efficiency (TEE) table are in 2010 market prices and discounted to a 2010 present value year.
- 6.2 The purpose of the Transport Economic Efficiency (TEE) table is to summarise and present transport user benefits. It shows the net user benefits by group (consumers and businesses, including transport operators), by mode of transport and by impact (time, vehicle operating costs, etc).

**Table 6.1: Low Growth Scenario - TEE Table (£ thousands) - Ollerton**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	1,558		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-852		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>7,06</b>		
Consumer - Other – Travel Time	2,416		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,220		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>1,196</b>		
Business – Travel Time	1,763	276	1,486
Business - VOC	Not Assessed		
Business – During Construction	-748		
Operating Costs	0		
Other Business – Developer contributions	-455		
<b>NET BUSINESS IMPACT</b>	<b>560</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>2,462</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 6.2: Low Growth Scenario - TEE Table (£ thousands) – Mickledale Lane**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	-1,179		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	7		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>-1,172</b>		
Consumer - Other – Travel Time	-2,876		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	15		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-2,861</b>		
Business – Travel Time	-2,402	-291	-2,111
Business - VOC	Not Assessed		
Business – During Construction	12		
Operating Costs	0		
Other Business – Developer contributions	-79		
<b>NET BUSINESS IMPACT</b>	<b>-2,469</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-6,503</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 6.3: Low Growth Scenario - TEE Table (£ thousands) - Lowdham**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	1,779		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-2,468		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>-689</b>		
Consumer - Other – Travel Time	2,679		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction		-5,339	
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-2,660</b>		
Business – Travel Time	1,626	263	1,362
Business - VOC	Not Assessed		
Business – During Construction	-3,601		
Operating Costs	0		
Other Business – Developer contributions	-335		
<b>NET BUSINESS IMPACT</b>	<b>-2,310</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-5,660</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 6.4: Low Growth Scenario - TEE Table (£ thousands) – Kirk Hill**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	2,518		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-352		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>2,166</b>		
Consumer - Other – Travel Time	3,017		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-1,243		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>1,774</b>		
Business – Travel Time	318	43	275
Business - VOC	Not Assessed		
Business – During Construction	-19		
Operating Costs	0		
Other Business – Developer contributions	-255		
<b>NET BUSINESS IMPACT</b>	<b>44</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>3,984</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 6.5: Low Growth Scenario - TEE Table (£ thousands) – All Junctions**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	4,676		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>1,011</b>		
Consumer - Other – Travel Time	5,236		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-2,552</b>		
Business – Travel Time	1,305	291	1,012
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1124		
<b>NET BUSINESS IMPACT</b>	<b>-4,176</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-5,716</b>		

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

6.3 The Present Value of Transport and Economic Efficiency returned the following annualised and discounted user time benefits for the 60-year appraisal period is **£-5.7 million**, showing that as a combined package, the scheme delivers negative TEE benefits for the Low growth scenario.

## 7. Road Safety

- 7.1 The purpose of the road safety assessment is to calculate the monetary benefits of the scheme arising from the change in collision costs between the Do Minimum (DM) and Do Something (DS) scenarios. This is done by calculating the total cost of collisions on the network for the DS and subtracting these from the total cost of collisions in the DM. The road safety assessment for the Scheme was carried out using the software COBALT (Cost and Benefit to Accidents – Light Touch) appraisal program, version 2013.02.
- 7.2 COBALT is software used to appraise the road safety benefits of a highway improvement. The aim of COBALT is to produce a monetised appraisal in accordance with the DfT’s Transport Analysis Guidance (TAG).
- 7.3 The COBALT assessment was run as a single model, but within the model each junction was modelled in isolation. This methodology was adopted since the scheme includes three isolated junction improvements and personal injury collision rates will not change along the length of route between these junctions as a result of the scheme.
- 7.4 Table 7.1 shows the junction numbers used within the COBALT assessment for each junction.

**Table 7.1: COBALT Junction numbers**

Junction	Junction number (DM)	Junction number (DS)
Ollerton	1	2
Mickledale Lane	5	6
Lowdham	11	12

- 7.5 Observed road collisions data was obtained from NCC for the period January 2015 to December 2017 (inclusive). 2018 data was not available at the time of the assessment. This data was used to calculate an observed collision rate for each junction. This observed rate was used for the Do Minimum assessment.
- 7.6 For the Do Something assessment, default COBALT rates were applied for the proposed junction types for Ollerton & Lowdham. For Mickledale Lane, an alternative approach was adopted since NCC had recently upgraded a similar priority junction on the A614 (Rose Cottage, directly north of Deerdale Lane) to signal controlled, as proposed at Mickledale Lane. The similarity of schemes and traffic flows means that an observed rate at Rose Cottage is likely to be more representative than the COBALT default rates and has been applied to Mickledale Lane. Table 7.2 below summarises the junction characteristics at the two junctions:

**Table 7.2: Junction Characteristics of Rose Cottage and Mickledale Lane junctions**

Characteristic	Rose Cottage	Mickledale Lane
Number of Arms	3	3
A614 mainline speed limit	50mph	50mph
2018 12hr Junction Inflow (vehicles)	17,239	19,181
08:00-09:00 Junction Inflow (vehicles)	1,829	1,964
17:00-18:00 Junction Inflow (vehicles)	1,814	1,954

- 7.7 Table 7.3 shows the number of collisions at Rose Cottage and Mickledale Lane from 1999 (with data obtained from Crashmap over this longer duration). This shows the impact of the Rose Cottage signalisation scheme on collision numbers.

**Table 7.3: Number of Collisions at Rose Cottage and Mickledale Lane junctions**

Year	Rose Cottage	Mickledale Lane
1999	1	2
2000	0	1
2001	2	1
2002	2	2
2003	4	0
2004	1	0
2005	1	1
2006	1	1
2007	3	0
2008	4	1
2009	1	2
2010	1	0
2011	0	2
2012	2	1
<b>Average collisions per year</b>	<b>1.6</b>	<b>1.0</b>
2013	0	0
2014	0	2
2015	0	1
2016	0	3
2017	2	0
<b>Average collisions per year</b>	<b>0.4</b>	<b>1.2</b>

Rose Cottage Scheme

7.8 To calculate a rate from Rose Cottage, guidance has been taken from the Chapter 5 (The Valuation of Accidents at Junctions) of the COBA Manual. The annual number of accidents (A) is calculated according to the following formula:

$$A = a(f)^b$$

7.9 Whereby:

A = Annual number of accidents

a = accident rate coefficient attributed to specific junction type

f = Function of traffic flow

b = Coefficient attributed to specific junction type

7.10 Two collisions have been observed at Rose Cottage since its signalisation, which across a three-year appraisal period (2015 – 2017) yields 0.6667 annual accidents (A). For a junction of its type (3 arm signalised) traffic flow (f) is calculated using an inflow model, whereby the total inflow from all links in thousands of vehicles per annual average day is summated. The traffic flow (f) at Rose Cottage, observed from a 2019 traffic survey, was calculated as 20.547. The b coefficient has been taken directly from the COBA Manual, whereby a 3-arm signalised has a value of 0.610.



7.11 Inputting these values and rearranging the model yields an accident rate coefficient (a) for Rose Cottage of 0.105471.

$$a = A / (f)^b$$

$$a = 0.6667 / (20.547)^{0.610}$$

$$a = 0.105471$$

7.12 The post-signalisation accident rate coefficient (a) from Rose Cottage can be reasonably assumed to represent the typical accident rate at signalised junctions along the A614 corridor, and has been used for accident appraisal at Mickledale Lane in the DS scenario (replacing the default rate generated by COBALT).

7.13 COBALT requires two input files in order to produce its outputs. An economic parameters file, consisting of a series of data tables of standard parameters required to calculate personal injury collision impacts in line with WebTAG guidance, and a scheme specific input file, produced by the user, which contains data specific to the scheme being modelled, such as the scheme network and traffic flows.

7.14 COBALT link and junction types were classified by manually assigning a COBALT type to the model link or junction using observations on the type of link or junction, with characteristics gained from viewing Google Maps. A possible 15 different link types and 96 different junction types can be entered.

7.15 Where links or junctions changed in detail between the DM and DS scheme, these were entered twice:

- once in its 'Without-Scheme' state (e.g. priority junction); and
- once in its 'With-Scheme' state (e.g. signal controlled).

7.16 Annual Average Daily Traffic (AADT) flows (see Section 2.66 – 2.69 for AADT methodology) were entered for the base year (2018), opening year (2023), and future forecast year (2037). Junction flows were represented using AADT entry flows per approach arm. Given this is a fixed trip assessment, the AADT values for the DS and DM are the same.

7.17 Collision costs are calculated by COBALT for every year within the appraisal period of 2023 to 2082 and then summed to give total collision costs in the DM and DS over the whole 60-year appraisal period.

7.18 For each link and each year, a personal injury collision rate per million vehicle kilometres (mvkm), the total distance travelled in mvkm during that year and the monetary value of a single collision has been calculated. Multiplying through for each link and then summing across all links gives the DM or DS network collision costs in a particular year.

7.19 For consistency with other items of cost and benefit, all collision costs are valued in 2010 market prices and discounted to the 2010 present value year.

7.20 Table 7.4 presents the COBALT outputs for the A614 / A6097 corridor junction improvement scheme, whilst Table 6.3 and 6.4 presents the outputs for each individual junction for accident statistics and costs respectively. Full COBALT output data is available in Appendix FF. The data shows that the scheme will lead to a reduction in the number of 'fatal' and 'serious' collisions, however a worsening in the number of collisions classified as 'slight' is noted. This is discussed in more detail below.

7.21 The assessment returned the following annualised and discounted collision benefits for the 60-year appraisal period: **-£0.87M** (i.e. a disbenefit)

**Table 7.4: Collision Risk and Valuation of Collisions (60 year appraisal period)**

	Accidents	Casualties			Accident Costs (£, 000's)
		Fatal	Serious	Slight	
<b>Without-Scheme (DM)</b>	398.5	2.6	34.6	553.6	14,154
<b>With-Scheme (DS)</b>	473.5	1.2	28.6	629.3	15,023
<b>Difference</b>	<b>-75</b>	<b>1.4</b>	<b>5.9</b>	<b>-76.0</b>	<b>-869</b>

Table 7.5: Total accidents across 60 year appraisal by junction

Junction	Do Minimum (DM) accidents	Do Something (DS) accidents	Change in accidents
Ollerton	115.6	163.2	+47.6
Mickledale Lane	79.3	42.1	-37.2
Lowdham	115.3	179.9	+64.6
<b>Total</b>	<b>310.2</b>	<b>385.2</b>	<b>112.2</b>

**Table 7.6: Total cost across 60 year appraisal by junction**

Junction	Do Minimum (DM) cost (£millions)	Do Something (DS) cost (£millions)	Change in cost (£millions)
<b>Ollerton</b>	3,502.3	5,146.2	-1,643.9
<b>Mickledale Lane</b>	4,341.2	1,532.3	2,808.9
<b>Lowdham</b>	3,629.8	5,663.5	-2,033.7
<b>Total</b>	<b>11473.3</b>	<b>12342</b>	<b>-868.7</b>

- 7.22 It is noted that the larger accident disbenefits are associated with the improvements at Ollerton and Lowdham. The proposed junctions fulfil their primary objective of improving capacity. The observed accident rates used in the Do Minimum at the two junctions are much lower than the COBA default values. As such, any comparison against a national default rate will result in a disbenefit. Whilst both junctions will be enlarged to provide additional capacity, the geometry and layout of the proposed junctions are not a large change from the existing and as such it is unlikely that the scheme will lead to a large increase in accidents to the level predicted by COBALT.
- 7.23 One potential alternative assessment approach would be to use a post-opening observed accident rate from a similar scheme. A similar scheme was installed at the A614/A617 Lockwell Hill junction in 2013, however this was installed at a similar time to the A614 Safety Cameras with reduced speed limits along the A614. As such, the use of the Lockwell Hill post opening data may overestimate the accident benefits of the junction and is not deemed a suitable comparator.
- 7.24 For the purposes of a robust assessment, default rates at Ollerton and Lowdham have been retained in the economic appraisal. As such, this represents a 'worst case' assessment.

## 8. Economic Appraisal

### Introduction

- 8.1 Although all the components of the appraisal have to be considered, two key indicators will stand out from this kind of economic assessment: the scheme's benefit to cost ratio (BCR), and its net present value (NPV).
- 8.2 The BCR identifies the ratio between the present value of benefits (PVB) and present value of costs (PVC). The higher the BCR the more benefits a scheme is forecast to deliver, compared with the scheme's costs.

### Transport Economic Efficiency

- 8.3 Table 8.1 shows, in monetary terms, the change due to the Do-Something, relative to the Do-Minimum scenario. All values in the Transport Economic Efficiency (TEE) table are in 2010 market prices, and discounted to a 2010 present value year.

**Table 8.1: Core Scenario - TEE Table (£ thousands) All Junctions**

	With Scheme
Consumer- Commuting – Travel Time	21,663
Consumer - Commuting – VOC	Not Assessed
Consumer - Commuting – During Construction	-3,665
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>17,998</b>
Consumer - Other – Travel Time	35,680
Consumer - Other – VOC	Not Assessed
Consumer - Other – During Construction	-7,788
<b>NET CONSUMER IMPACT - OTHER</b>	<b>27,892</b>
Business – Travel Time	10,636
Business - VOC	Not Assessed
Business – During Construction	-4,357
Operating Costs	0
Other Business – Developer contributions	-1124
<b>NET BUSINESS IMPACT</b>	<b>5,155</b>
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>51,046</b>

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 8.2: High Growth Scenario - TEE Table (£ thousands) All Junctions**

	With Scheme
Consumer- Commuting – Travel Time	45,957
Consumer - Commuting – VOC	Not Assessed
Consumer - Commuting – During Construction	-3,665
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>42,292</b>
Consumer - Other – Travel Time	63,298
Consumer - Other – VOC	Not Assessed
Consumer - Other – During Construction	-7,788
<b>NET CONSUMER IMPACT - OTHER</b>	<b>55,510</b>
Business – Travel Time	36,687
Business - VOC	Not Assessed
Business – During Construction	-4,357
Operating Costs	0
Other Business – Developer contributions	-1124
<b>NET BUSINESS IMPACT</b>	<b>31,206</b>
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>129,009</b>

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

**Table 8.3: Low Growth Scenario - TEE Table (£ thousands) All Junctions**

	With Scheme
Consumer- Commuting – Travel Time	4,676
Consumer - Commuting – VOC	Not Assessed
Consumer - Commuting – During Construction	-3,665
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>1,011</b>
Consumer - Other – Travel Time	5,236
Consumer - Other – VOC	Not Assessed
Consumer - Other – During Construction	-7,788
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-2,552</b>
Business – Travel Time	1,305
Business - VOC	Not Assessed
Business – During Construction	-4,357
Operating Costs	0
Other Business – Developer contributions	-1124
<b>NET BUSINESS IMPACT</b>	<b>-4,176</b>
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-5,716</b>

Note: All entries are discounted to a 2010 present value year, in 2010 market prices, in £ thousands.

## Public Accounts

8.4 Table 8.4 to Table 8.9 show, in monetary terms, the Public Accounts for the improvement package, incorporating the costs of Warren Hill and White Post. Table 8.10 show, in monetary terms, the Public Accounts for all junctions.

**Table 8.4: Public Accounts (£ thousands)-Ollerton**

Funding	All modes	Road
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	1527	1527
Developer Contributions	-455	-455
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>1,072</b>	<b>1,072</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	5734	5734
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>5,734</b>	<b>5,734</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>6,806</b>	<b>6,806</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

**Table 8.5: Public Accounts (£ thousands)-Mickledale Lane**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>578</b>	<b>578</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>3,755</b>	<b>3,755</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>4,333</b>	<b>4,333</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

**Table 8.6: Public Accounts (£ thousands)-Lowdham**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	937	937
Developer Contributions	-335	-335
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>602</b>	<b>602</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	3640	3640
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>3,640</b>	<b>3,640</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>4,242</b>	<b>4,242</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.



**Table 8.7: Public Accounts (£ thousands)-Kirk Hill**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>550</b>	<b>550</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>2,894</b>	<b>2,894</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>3,444</b>	<b>3,444</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

**Table 8.8: Public Accounts (£ thousands)-Warren Hill**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	42	42
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>42</b>	<b>42</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	154	154
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>154</b>	<b>154</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>196</b>	<b>196</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

**Table 8.9: Public Accounts (£ thousands)-White Post**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	24	24
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>24</b>	<b>24</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	160	160
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>160</b>	<b>160</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>184</b>	<b>184</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

**Table 8.10: Public Accounts (£ thousands)-All Junctions**

<b>Funding</b>	<b>All modes</b>	<b>Road</b>
<b>Local Government</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	3,992	3,992
Developer Contributions	-1,124	-1,124
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>2,868</b>	<b>2,868</b>
<b>Central Government Funding: Transport</b>		
Revenue	0	0
Operating Costs	0	0
Investment Costs	16,337	16,337
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>16,337</b>	<b>16,337</b>
<b>Central Government Funding: Non Transport</b>		
Indirect Tax	Not Assessed	
<b>Totals</b>		
<b>Broad Transport Budget</b>	<b>19,205</b>	<b>19,205</b>
<b>Wider Public Finances</b>	<b>0</b>	<b>0</b>

Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices.

## Analysis of Monetised Cost and Benefits (AMCB)

- 8.5 Table 8.11 to Table 8.14 show the Analysis of Monetised Costs and Benefits (AMCB) summary table showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses for each junction. Table 8.15 shows the Analysis of Monetised Costs and Benefits (AMCB) summary table showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses for all junctions.
- 8.6 A single monetised noise impact of £0.29m has been calculated by VIA EM Environmental Team (December 2020) using the Core growth traffic forecasts at a Package level rather than for each junction therefore the monetised noise benefit is presented in the combined AMCB table for all three sensitivity growth forecasts. The associated TAG workbook are presented in Appendix GG.
- 8.7 A local air quality impact of £0.013m has been calculated separately for the Core forecasts, using the DfT's Air Quality Monetisation Spreadsheet. The associated TAG workbooks are presented in Appendix HH.
- 8.8 The Air Quality team has also provided a monetised carbon benefit of £0.40m (Lower Estimate), £0.87m (Core) and £1.39m (Upper Estimate) from the Defra Emission Factor Toolkit, using the Environmental Workbook traffic data which were extracted from the Core junction models. The Core value has been inserted into the AMCB Table for the full scheme in preference to the carbon value produced by TUBA. The associated TAG workbooks are presented in Appendix II.

**Table 8.11: Core Scenario - Analysis of Monetised Cost and Benefits (AMCB)-Ollerton**

Impact	With Scheme
Greenhouse Gases	302
Local Air Quality	2
Noise	Not Assessed
Travel Time Savings - Business	5,358
Travel Time Savings – Commuting & Other	13,763
Collisions	-1,644
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>17,781</b>
<b>PVC</b>	<b>6,806</b>
<b>NPV</b>	<b>10,975</b>
<b>BCR</b>	<b>2.61</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

**Table 8.12: Core Scenario - Analysis of Monetised Cost and Benefits (AMCB)-Mickledale Lane**

Impact	With Scheme
Greenhouse Gases	-2
Local Air Quality	0
Noise	Not Assessed
Travel Time Savings - Business	-2,688
Travel Time Savings – Commuting & Other	-4,398
Collisions	2,809
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>-4,280</b>
<b>PVC</b>	<b>4,333</b>
<b>NPV</b>	<b>-8,613</b>
<b>BCR</b>	<b>-0.99</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

**Table 8.13: Core Scenario - Analysis of Monetised Cost and Benefits (AMCB)-Lowdham**

Impact	With Scheme
Greenhouse Gases	216
Local Air Quality	7
Noise	Not Assessed
Travel Time Savings - Business	1,037
Travel Time Savings – Commuting & Other	6,356
Collisions	-2,034
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>5,582</b>
<b>PVC</b>	<b>4,242</b>
<b>NPV</b>	<b>1,340</b>
<b>BCR</b>	<b>1.32</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

**Table 8.14: Core Scenario - Analysis of Monetised Cost and Benefits (AMCB)-Kirk Hill**

Impact	With Scheme
Greenhouse Gases	354
Local Air Quality	4
Noise	Not Assessed
Travel Time Savings - Business	1,449
Travel Time Savings – Commuting & Other	30,170
Collisions	Not Assessed
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>31,976</b>
<b>PVC</b>	<b>3,444</b>
<b>NPV</b>	<b>28,532</b>
<b>BCR</b>	<b>9.28</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

**Table 8.15: Core Scenario - Analysis of Monetised Cost and Benefits (AMCB)-All Junctions**

Impact	With Scheme
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Travel Time Savings - Business	5,155
Travel Time Savings – Commuting & Other	45,890
Collisions	-869
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>51,345</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>32,140</b>
<b>BCR</b>	<b>2.67</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

8.9 The Department for Transport's "Value for Money Guidance" (2017, www.dft.gov.uk), describes how value for money can be categorised in four classes:

Figure 8-1: DfT Value for Money Guidance

**Box 5.1 Standard Categories**  
*(Transport cost outlays exceed revenues or cost savings)*

VfM Category	Implied by...*
Very High	BCR greater than or equal to 4
High	BCR between 2 and 4
Medium	BCR between 1.5 and 2
Low	BCR between 1 and 1.5
Poor	BCR between 0 and 1
Very Poor	BCR less than or equal to 0

*\*Relevant indicative monetised and/or non-monetised impacts must also be considered and may result in a final value for money category different to that which is implied solely by the BCR. This chapter provides guidance on how to select the final value for money category.*

8.10 The BCR summarised in the AMCB table above, shows that the improvements deliver a positive economic case and represents High value for money. Other appraisal objectives, which have not been monetised, should be taken into account during the decision-making process.

8.11 Table 8.16 shows the Analysis of Monetised Costs and Benefits (AMCB) summary table showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses under a High Growth Scenario.

Table 8.16: High Growth Scenario - Analysis of Monetised Cost and Benefits (AMCB) – All Junction

Impact	With Scheme
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Travel Time Savings - Business	31,206
Travel Time Savings – Commuting & Other	97,802
Collisions	-869
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>129,308</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>110,103</b>
<b>BCR</b>	<b>6.73</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.



8.12 The BCR summarised in the AMCB table above, shows that the improvements deliver a positive economic case and represents Very High value for money under a High Growth Scenario. Other appraisal objectives, which have not been monetised, should be taken into account during the decision-making process.

8.13 Table 8.17 shows the Analysis of Monetised Costs and Benefits (AMCB) summary table under a Low Growth Scenario showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses.

**Table 8.17: Low Growth Scenario - Analysis of Monetised Cost and Benefits (AMCB) – All Junctions**

Impact	With Scheme
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Travel Time Savings - Business	-4,176
Travel Time Savings – Commuting & Other	-1,541
Collisions	-869
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>-5,417</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>-24,622</b>
<b>BCR</b>	<b>-0.28</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

8.14 The BCR summarised in the AMCB table above, shows that the improvements deliver a negative economic case and represents Very Poor value for money under a Low Growth Scenario. Other appraisal objectives, which have not been monetised, should be taken into account during the decision-making process.

## 9. OBR Sensitivity Test

- 9.1 The DfT recently published updated versions of both the TAG Data Book (v1.14) and the Wider Impacts Dataset. These versions are consistent with the July 2020 Office for Budget Responsibility (OBR) forecasts and are intended for use as a sensitivity test in scheme appraisals.
- 9.2 The Forthcoming Change notice “TAG Data Book, appraisal software and TAG appraisal worksheets” states the requirement for scheme promoters to conduct sensitivity tests in modelling and appraisal using TAG Data Book v1.14. This requirement is in place until February 2021, when the updated OBR projections will be incorporated into formal guidance.
- 9.3 It is important to note that this appraisal-only sensitivity testing is likely to understate the full impact of the OBR updates, because no account is taken of the impact on demand.
- 9.4 Sensitivity testing has been undertaken by using the DfT’s TUBA software (Version 1.9.14) and applying the economic parameters file ‘Economics\_TAG\_db1\_14\_0.txt’ which is consistent with TAG Data Book v1.14 July 2020.
- 9.5 Table 9.1 to Table 9.3 show, in monetary terms, the change due to the Do-Something, relative to the Do-Minimum scenario for the Low Growth, Core and High Growth scenarios across all junctions. All values in the Transport Economic Efficiency (TEE) table are in 2010 market prices and discounted to a 2010 present value year.

**Table 9.1: Low Growth Scenario -TEE Table (£ thousands) All Junctions**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	4,030		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>365</b>		
Consumer - Other – Travel Time	4,516		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-3,272</b>		
Business – Travel Time	1,139	254	886
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1,124		
<b>NET BUSINESS IMPACT</b>	<b>-4,342</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-7,248</b>		

**Table 9.2: Core Scenario - TEE Table (£ thousands) All Junctions**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	18,506		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>14,841</b>		
Consumer - Other – Travel Time	30,483		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>22,695</b>		
Business – Travel Time	9,083	1,512	7,570
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1124		
<b>NET BUSINESS IMPACT</b>	<b>3,602</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>41,139</b>		

**Table 9.3: High Growth Scenario -TEE Table (£ thousands) All Junctions**

Impact	Total	Personal	Freight
Consumer- Commuting – Travel Time	38,891		
Consumer - Commuting – VOC	Not Assessed		
Consumer - Commuting – During Construction	-3,665		
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>35,226</b>		
Consumer - Other – Travel Time	53,565		
Consumer - Other – VOC	Not Assessed		
Consumer - Other – During Construction	-7,788		
<b>NET CONSUMER IMPACT - OTHER</b>	<b>45,777</b>		
Business – Travel Time	30,981	5,036	25,944
Business - VOC	Not Assessed		
Business – During Construction	-4,357		
Operating Costs	0		
Other Business – Developer contributions	-1124		
<b>NET BUSINESS IMPACT</b>	<b>25,500</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>106,504</b>		

9.6 Table 9.4 shows the Analysis of Monetised Costs and Benefits (AMCB) summary table under a Low Growth, Core and High Growth scenario showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses.

**Table 9.4: Analysis of Monetised Cost and Benefits (AMCB)**

Impact	Low Scenario-With Scheme	Core Scenario-With Scheme	High Scenario-With Scheme
Greenhouse Gases	870	870	870
Local Air Quality	13	13	13
Noise	286	286	286
Travel Time Savings - Business	-4,342	3,602	25,500
Travel Time Savings – Commuting & Other	-2,907	37,536	81,003
Collisions	-869	-869	-869
Vehicle Operating Costs	Not Assessed	Not Assessed	Not Assessed
Indirect tax Revenue	Not Assessed	Not Assessed	Not Assessed
<b>PVB</b>	<b>-6,949</b>	<b>41,438</b>	<b>106,803</b>
<b>PVC</b>	<b>19,205</b>	<b>19,205</b>	<b>19,205</b>
<b>NPV</b>	<b>-26,154</b>	<b>22,233</b>	<b>87,598</b>
<b>BCR</b>	<b>-0.36</b>	<b>2.16</b>	<b>5.56</b>

- 9.7 Under the OBR sensitivity scenario the PVB and BCR summarised in the Table 9.4 above, would reduce slightly in all scenarios from those presented in section 8. The BCR summarised in the AMCB table above, shows that under the OBR sensitivity scenario, the improvements deliver a Very Poor value for money under a Low Growth Scenario, High value for money under a Core Scenario and Very High value for money under a High Growth Scenario. Other appraisal objectives, which have not been monetised, should be taken into account during the decision-making process.

# 10. Induced Investment

## Induced Investment Introduction

- 10.1 The Department for Transport’s appraisal process is based on the principles of the HM Treasury Green Book guidance, which advocates the use of cost-benefit (welfare) analysis to determine the value for money of investment spend. Welfare analysis captures a broad range of impacts, such as economic, environmental and social. The results of welfare analysis are reported in the Economic Case and inform the value for money assessment.
- 10.2 The method to estimate the incremental impact on scheme benefits arising from a transport scheme unlocking a development which would not have been possible in the absence of that investment is set out in TAG unit A2.2, Appraisal of Induced Investment (May 2020).

## Land Value Uplift

- 10.3 TAG Unit A2.2, Appraisal of Induced Investment, May 2020 provides guidance on how to quantify and value induced investments impacts – changes in the level or location of private sector investment as a result of a transport investment – for their inclusion within transport appraisal as part of the value for money assessment; and as non-welfare metrics such as number of jobs and GDP. The assessment of Land Value Uplift associated with Dependent Development sites identified in Section 2 is in accordance with TAG Unit A2.2, Appendix D, Derivation of Land Value Uplift.
- 10.1 The Wider Economic Impacts Report (December 2020) contained in Appendix JJ of this report details:
- The methodology used to assess potential land value uplift associated with the scheme;
  - A summary of the quantum of housing and employment land on the dependent sites;
  - Key assumptions used in the assessment and sensitivity testing.
- 10.2 As noted in Table 3.1, the DfT’s Value for Money Framework states that whilst benefits associated with Induced Investment should not be included in the initial benefit-cost metrics, it may be used to inform the scheme’s value for money assessment. As such, Land Value Uplift benefits are excluded from the initial Analysis of Monetised Costs and Benefits but are presented to support the value for money case.
- 10.3 The Scheme is estimated to deliver £21.5m gross LVU, which is equivalent to £13.3m net additional Land Value Uplift.

**Table 10.1: Land Value Uplift Summary (£millions)**

	Gross impact of Scheme	Net impact of Scheme
Residential Land Value Uplift	£21.0m	£13.0m
Commercial Land Value Uplift	£0.5m	£0.3m
<b>Total LVU</b>	<b>£21.5m</b>	<b>£13.3m</b>

Source: Wider Economic Impacts Report, 2020; Values at 2010 prices

- 10.4 As noted, Land Value Uplift Benefits are excluded from the initial Analysis of Monetised Costs and Benefits but are presented in section 11 to inform the value for money case.

## Transport External Costs

- 10.5 Transport External Costs refer to the impacts imposed by the transport users generated by the dependent development sites on all other transport users, such as increased levels of congestion.
- 10.6 The Dependent Development demand forecasts are detailed in Section 2.

- 10.7 The assessment of transport external costs of the dependent development requires two transport model runs:
- Scenario S - without the new housing but with the transport scheme; and
  - Scenario R - with the new housing and with the transport scheme
- 10.8 The TEC assessment, in accordance with TAG Unit A2.2, paragraph 3.3.10 consisted:
- Scenario S – Core Scenario Demand assigned on to the Do Something junction models
  - Scenario R –Dependent Development Demand assigned onto the Do Something junction models
- 10.9 A TEC analysis was undertaken using the Ollerton and Lowdham ARCADY models as detailed above. Outputs from the junction models for the 2023 opening year (Scenario S and R in 2023), 2037 non-dependent growth (Scenario S) and 2037 dependent growth scenarios (Scenario R).
- 10.10 The methodology as detailed in TAG guidance unit A2.2 (May 2020) and the Department for Transport TUBA software V1.9.14 was used to undertake this analysis, with the TUBA economic parameters file (23/08/2020 v2, TAG Data Book v1.13.1 July 2020).
- 10.11 The TEC are summarised for each junction in Table 1 below.

**Table 10.2: A614 Transport External Costs (£millions)**

	Ollerton TEC	Lowdham TEC	Combined TEC
Consumer User Benefits - Commuting	-0.868	-0.754	-1.622
Consumer User Benefits - Other	-2.652	-0.961	-3.613
Business User Benefits	-1.830	-0.641	-2.471
<b>Net Present Value of Benefits (PVB)</b>	<b>-5.350</b>	<b>-2.356</b>	<b>-7.706</b>
Notes: All entries are in market prices, at present values discounted to 2010, at 2010 market prices, in £ millions.			

- 10.12 The TAG assessment of Transport External Costs results in an overall disbenefit with Present Value of Benefits of -£7.706m.
- 10.13 These TEC impacts represent an increase in costs to existing road users as a result of the addition of new trips from the dependent development sites.
- 10.14 As noted in Table 2.1, the DfT's Value for Money Framework states that whilst benefits associated with Induced Investment should not be included in the initial benefit-cost results, it may be used to inform the scheme's value for money assessment. As such, monetised TEC impacts were excluded from the initial Analysis of Monetised Costs and Benefits but are presented to support the value for money case.

## Land Amenity Value (LAV)

- 10.15 The 'amenity value' of a plot of land refers to the level of pleasantness of the area. TAG Unit A2.2 'Appraisal of Induced Investment, May 2020 provides guidance on how to quantify Land Amenity Value.
- 10.16 The TAG Data Book 'Valuing Dependent Development Workbook', incorporates estimates obtained by Department of Communities and Local Government (2001) and has been used as the basis of the LAV assessment of Thoresby Colliery and Teal Close development sites. The welfare impact from the change in land amenity value has been estimated as the difference between the present value benefits for different land types.
- 10.17 The LAV assessment is presented in the Wider Economic Impacts Report (Dec 2020) contained in Appendix JJ of this report.

- 10.18 At Thoresby Colliery, the development will take place on brownfield land and is anticipated to result in land amenity value gain. However, there is currently limited evidence available on the external amenity impact of development on brownfield land. As a conservative assumption and in line with the DCLG appraisal guide, it is assumed that the change in amenity value on the Thoresby Colliery site is zero.
- 10.19 At Teal Close, development will take place on agricultural land predominantly used to grow crops. This land is considered to have limited amenity value in terms of recreation or pleasantness of the area, and its agricultural uses are restricted to crops due history of site use for sewage sludge. 52 This type of land aligns with the definition for intensive agricultural land, with estimated land amenity value of £29,000 per hectare in perpetuity. The delivery of net additional 8.9ha of residential development at Teal Close is therefore estimated to amount to an amenity loss of £258,000 in present value (in 2010 prices).

## Induced Investment Summary

- 10.20 TAG Unit A2.2, Table 2 sets out the formula for valuing the benefits of Dependent Development:

$$Total\ Benefits = LVU_D + Other - TEC - LAV - NTCI$$

Where:

*LVU<sub>D</sub>*: Land Value Uplift adjusted for displacement (see paragraph 10.3);

*Other*: This includes Environmental Impacts, and Social and Distributional Impacts – TAG units A3 and A4 respectively (Not assessed);

*TEC*: Transport External Costs (see paragraph 10.5);

*LAV*: Land Amenity Value (see paragraph 10.15); and

*NTCI*: This refers to the costs associated with Non-Transport Complementary Interventions – the benefits are assumed to be captured by the land value uplift (no further assessment).

- 10.21 On this basis the total benefits of Dependent Development associated with the A614 Improvements are:

**Table 10.3: A614 Induced Investment Benefits (£millions)**

Induced Investment Benefits	Benefit (£m)
Land Value Uplift	£13.300m
Transport External Costs	-£7.706m
Land Amenity Value	-0.258m
Other	Not Assessed
Non-Transport Complementary Interventions	Not Assessed
<b>Total Induced Investment</b>	<b>£5.336M</b>
Notes: All entries are in market prices, at present values discounted to 2010, at 2010 market prices, in £ millions.	



# 11. Analysis of Monetised Costs and Benefits – Induced Investment

- 11.1 As noted in Table 3.1, the inclusion of indicative monetised impacts such as Induced Investment should be considered after the presentation of established and evolving monetised impacts. Section 8 presents the AMCB tables using the established monetised impacts. No evolving monetised impacts have been assessed at this stage.
- 11.2 Section 10 presents the Land Value Uplift (LVU) benefits and Land Amenity Values associated with the Scheme and the assessment of Transport External Costs (TEC). These were assessed using TAG Unit A2.2, Induced Investment, May 2020 and are both considered to be indicative monetised impacts. As such, the Induced Investment impacts have been excluded from the AMCB table in Section 8 but are included below to inform the Value for Money assessment.
- 11.3 Presented in Table 11.1 is the Analysis of Monetised Costs and Benefits (AMCB) summary table based upon the Core growth forecast assignments, taking the induced investment into account, and showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses.

**Table 11.1: Core Scenario with Induced Investment - Analysis of Monetised Cost and Benefits (AMCB) – All Junctions**

Impact	With Scheme
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Economic Efficiency – Business	5,155
Economic Efficiency – Commuting & Other	45,890
Collisions	-869
Induced Investment	5,336
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>56,681</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>37,476</b>
<b>BCR</b>	<b>2.95</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

- 11.4 The BCR summarised in the AMCB table above, shows that the improvements deliver a positive economic case and represents High value for money under a Core Scenario with Induced Investment considered. Other appraisal objectives, which have not been monetised, should also be taken into account during the decision-making process.

## High Alternative Growth – with Induced Investment

11.5 Table 11.2 shows the AMCB summary table based upon the High Growth Scenario, incorporating the induced investment benefits, and showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses.

**Table 11.2: High Growth Scenario with Induced Investment - Analysis of Monetised Cost and Benefits (AMCB) – All Junctions**

Impact	With Scheme
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Economic Efficiency – Business	31,206
Economic Efficiency – Commuting & Other	97,802
Collisions	-869
Induced Investment	5,336
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>134,644</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>115,439</b>
<b>BCR</b>	<b>7.01</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

11.6 The BCR summarised in the AMCB table above, shows that the improvements deliver a positive economic case and represents Very High value for money under a High Growth Scenario with Induced Investment considered. Other appraisal objectives, which have not been monetised, should be taken into account during the decision-making process.

## Low Alternative Growth – with Induced Investment

11.7 Table 11.3 shows the AMCB summary table based upon the Low Growth Scenario, incorporating the induced investment benefits, and showing the PVB, PVC, NPV and BCR for the 60-year scheme analyses.

**Table 11.3: Low Growth Scenario with Induced Investment - Analysis of Monetised Cost and Benefits (AMCB) – All Junctions**

<b>Impact</b>	<b>With Scheme</b>
Greenhouse Gases	870
Local Air Quality	13
Noise	286
Economic Efficiency – Business	-4,176
Economic Efficiency – Commuting & Other	-1,541
Collisions	-869
Induced Investment	5,336
Vehicle Operating Costs	Not Assessed
Indirect tax Revenue	Not Assessed
<b>PVB</b>	<b>-81</b>
<b>PVC</b>	<b>19,205</b>
<b>NPV</b>	<b>-19,286</b>
<b>BCR</b>	<b>-0.00</b>

Notes: Note: Costs appear as positive numbers. All entries are discounted to 2010 present values, in 2010 market prices; except for the BCR figures. Summary does not include monetised journey time reliability benefits.

11.8 The BCR summarised in the AMCB table above, shows that the improvements deliver a neutral economic case and represents Very Poor value for money under a Low Growth Scenario with Induced Investment considered. Other appraisal objectives, which have not been monetised, should also be taken into account during the decision-making process.

# 12. Summary and Conclusions

## Summary

- 12.1 The economic assessment for the A614/A6097 Major Road Improvement Scheme was undertaken using the TUBA economic appraisal software and the COBALT accident appraisal software, for a 60-year appraisal period of 2023-2082 inclusive.
- 12.2 The economic assessment of the A614/A6097 Major Road Improvement Scheme was based upon the assignment of a forecast Core Growth Scenario, with sensitivity tests using Low alternative growth and High alternative growth assumptions. The Core Growth Scenario traffic forecast is based upon what the most likely land use and traffic growth assumptions.
- 12.3 Outputs from isolated junction models were used in the economic appraisal of the scheme to produce a monetised cost benefit analysis. The monetised cost benefit analysis of the scheme included the assessment of road user benefits and changes in revenues (i.e. indirect taxes), accident costs, and road-user costs during construction.
- 12.4 The assessments of Induced Investment (Land Value Uplift, Transport External Costs and Land Value Uplift) associated with Dependent Development sites identified in the Forecasting Package were documented.

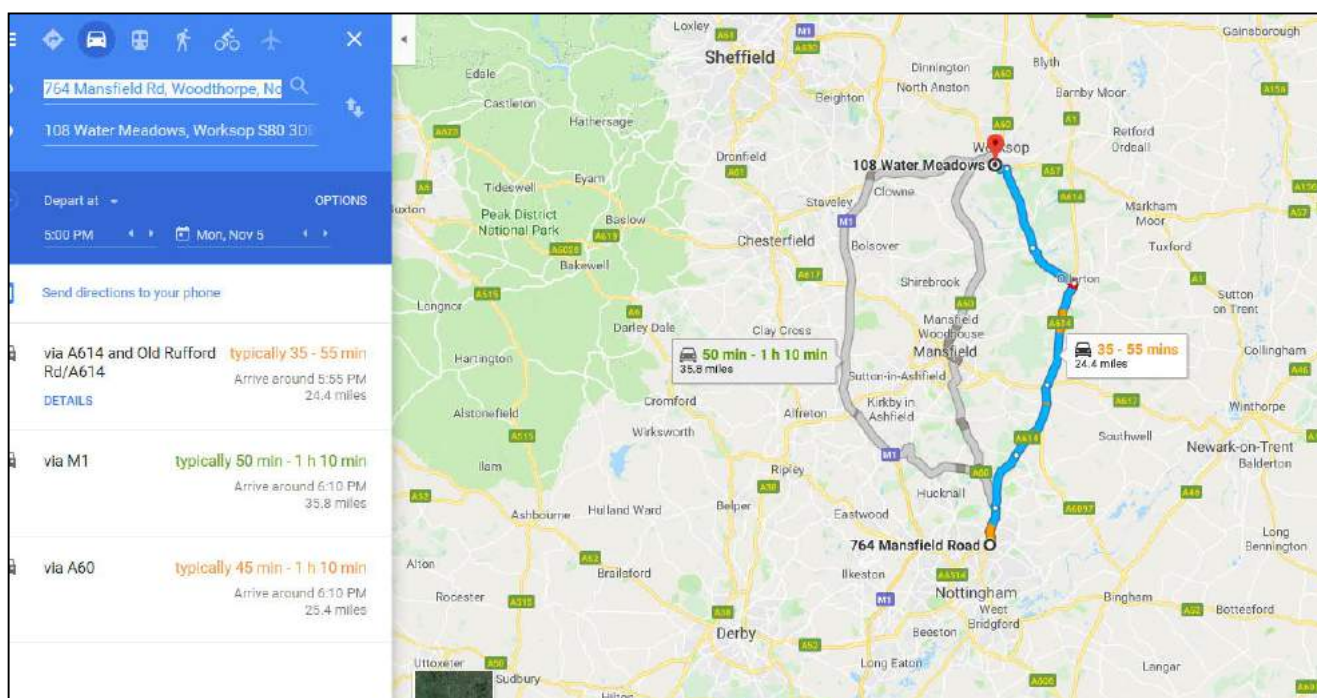
## Conclusions

- 12.5 The Core growth TEE benefits including the delays during construction, excluding accident benefits, carbon benefits, indirect tax revenue impacts and maintenance operations were £51.0 million (Table 4.5- 2010 market prices discounted to a 2010 present value year).
- 12.6 The High growth TEE benefits including the delays during construction, excluding accident benefits, carbon benefits, indirect tax revenue impacts and maintenance operations were £129.0 million (Table 5.5- 2010 market prices discounted to a 2010 present value year).
- 12.7 The Low growth TEE benefits including the delays during construction, excluding accident benefits, carbon benefits, indirect tax revenue impacts and maintenance operations were -£5.7 million (Table 6.5- 2010 market prices discounted to a 2010 present value year).
- 12.8 Accident costs over the appraisal period were appraised using the COBALT accident analysis software. Recorded accident data within Nottinghamshire were used to establish observed accident rates for each junction. For the Do Something assessment, default COBALT rates were applied for the proposed junction types for Ollerton & Lowdham. For Mickledale Lane, an alternative approach was adopted since NCC had recently upgraded a similar priority junction on the A614 (Rose Cottage, directly north of Deerdale Lane) to signal controlled, as proposed at Mickledale Lane.
- 12.9 The accident analysis showed that the implementation of the Scheme would result in a monetised benefit (refer to Table 7.4 ) of £-0.87 million in 2010 market prices discounted to a 2010 present value year.
- 12.10 Scheme cost estimates including developer contributions were provided by Nottinghamshire County Council in the form of a Most Likely Cost Estimate and were referred to as Investment Costs. The Present Value investment cost of the scheme (i.e. in 2010 market prices and discounted to a 2010 present value year) is £19.21 million (refer to Table 8.10).

- 12.11 A combined monetised noise impact of £0.29 million, a local air quality impact of £0.013 million and monetised carbon benefit of £0.87 million have been calculated by the VIA East Midlands and AECOM (December 2020).
- 12.12 The Core growth forecast results, were (all costs in 2010 market prices discounted to a 2010 present value year):
- PVB £51.4M
  - PVC £19.2M
  - NPV £32.1M
  - BCR 2.67
- 12.13 For the Core growth forecast, the TUBA appraisals produced an overall NPV of £32.1 million (refer to Table 8.15) in 2010 market prices discounted to a 2010 present value year. This NPV included accident benefits, carbon benefits, construction delay disbenefits and indirect tax impacts. The BCR is 2.67, which the DfT would categorise as High value for money.
- 12.14 In addition to an assessment of the Core growth forecast, and in line with TAG advice, uncertainty in the forecasting process was considered through the preparation of two alternative growth forecasts referred to as Low and High alternative growth scenarios.
- 12.15 For the High growth forecast, the TUBA appraisals produced an overall NPV of £110.1 million (refer to Table 8.16) in 2010 market prices discounted to a 2010 present value year. This NPV included accident benefits, carbon benefits, construction delay disbenefits and indirect tax impacts. The BCR is 6.73, which the DfT would categorise as Very High value for money.
- 12.16 For the Low growth forecast, the TUBA appraisals produced an overall NPV of £-24.6 million (refer to Table 8.17) in 2010 market prices discounted to a 2010 present value year. This NPV included accident benefits, carbon benefits, construction delay disbenefits and indirect tax impacts. The BCR is negative, which the DfT would categorise as Very Poor value for money.
- 12.17 Sensitivity testing has been undertaken to review the impact of the July 2020 Office for Budget Responsibility (OBR) forecasts by using the DfT's TUBA software (Version 1.9.14) and applying the economic parameters file 'Economics\_TAG\_db1\_14\_0.txt' which is consistent with TAG Data Book v1.14 July 2020. Under an OBR forecast scenario the PVB and BCR would reduce slightly in all scenarios.
- 12.18 In accordance with DfT Value for Money Guidance, the benefits associated with Induced Assessment (Land Value Uplift, Transport External Costs and Land Amenity Value) were excluded from the initial analysis of monetised costs and benefits.
- 12.19 The Scheme is estimated to deliver £5.336m additional induced Investment benefits (Table 10.3).
- 12.20 For the Core growth forecast, including Induced Investment impacts, the appraisals produced an overall NPV of 37.5 million (refer to Table 11.1) in 2010 market prices discounted to a 2010 present value year. This NPV included accident benefits, carbon benefits, construction delay disbenefits, indirect tax impacts, land value uplift, Transport External Costs and Land Amenity Value.
- 12.21 The Core growth forecast results, with induced investment, were (all costs in 2010 market prices discounted to a 2010 present value year):
- PVB £56.7M
  - PVC £19.2M
  - NPV £37.5M
  - BCR 2.95

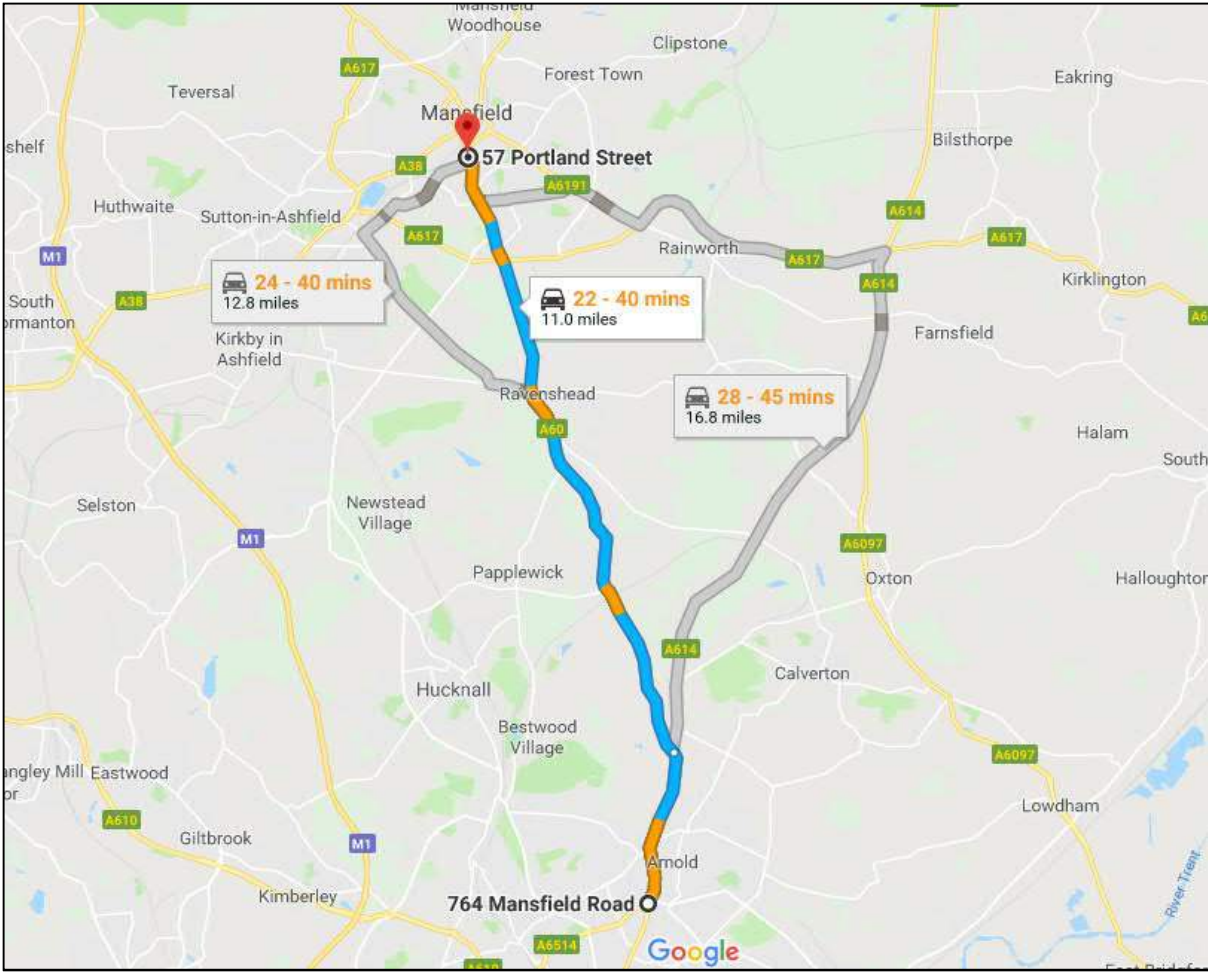
- 12.22 With the inclusion of Induced Investment, the Scheme's economic appraisals, using the High alternative growth and Low alternative growth forecasts resulted in positive BCR values of 7.01 and 0.00 respectively (Table 11.2 and Table 11.3).
- 12.23 In transport economy terms, the combined package of improvements would provide high value for money under a Core and High growth scenario.

# Appendix A – Route Choice Comparisons

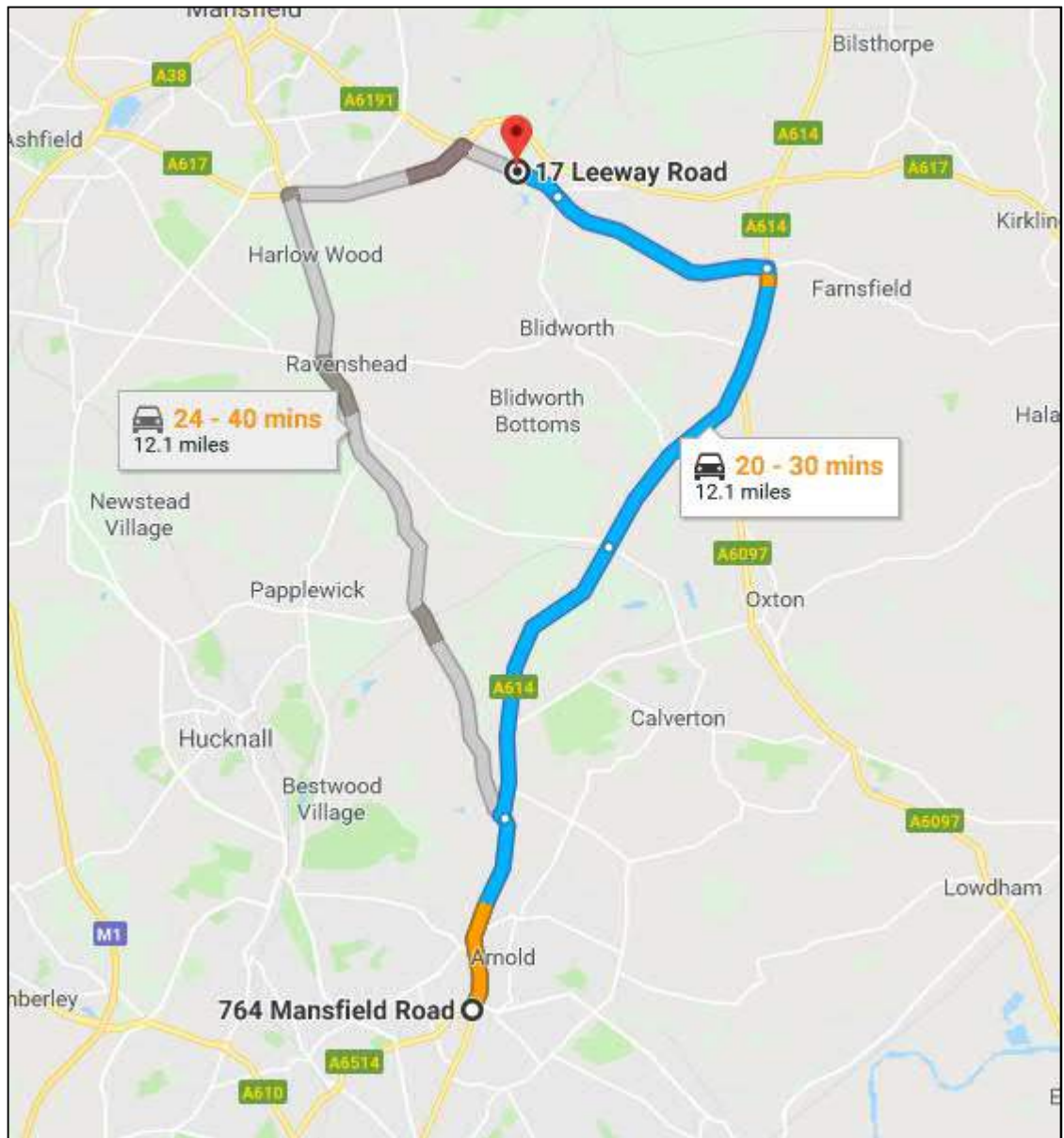


Whilst the A60 does provide an alternative route between Worksop and Nottingham, there is typically a 10 minute difference in predicted journey times in peak periods. In addition, the A60 route requires trips to route through the centre of Mansfield, which adds uncertainty to the journey time reliability of the A60. This is reflected in the wider range of predicted journey times shown above.





Between Mansfield and Nottingham, the shortest and quickest route is via the A60. The A614 is 4 miles longer and typically at least 6 minutes longer.



For trips with an origin or destination to the east of the MARR/Southwell Road roundabout, the A614 is the quicker route, although the A60 is same distance.

# Appendix B – Sensitivity testing MCHM

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Project:	<b>A614 / A6097 MRN Improvement Scheme</b>	Job No:	<b>60625845</b>
Subject:	<b>A614 Strategic Assessment</b>		
Prepared by:	<b>Tom Greaves</b>	Date:	<b>29/9/20</b>
Checked by:	<b>Clive Posford</b>	Date:	<b>29/9/20</b>
Approved by:	<b>Adam Hall</b>	Date:	<b>30/9/20</b>

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## A614 Strategic Assessment

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The A614/A6097 MRN Improvement Scheme is a series of junction improvements along the A614 corridor in Nottinghamshire being promoted by Nottinghamshire County Council (NCC). An Options Assessment Report (OAR) has been prepared in accordance with Stage 1 of the Transport Appraisal Process - Option Development.

A methodology using a simple fixed trip forecasting approach and isolated junction models was pre-approved by the Department for Transport (DfT) in December 2018. This was on the basis that there is minimal route choice and the improvements are relatively modest capacity improvements. In addition, given the original programme constraints there was no time to develop a traffic assignment model for the improvement corridor.

Following a DfT review of the Outline Business Case, DfT has requested a more in-depth analysis particularly around the schemes, Variable Demand Model (VDM) impacts and the potential for reassignment.

DfT's specific comments are:

*"#37: Given the scale of the scheme spatially (approximately 14 miles of road network), the scheme cost and the current and forecast levels of congestion, a variable demand approach is warranted based on guidance on TAG Unit M2.*

*"Additional: Notwithstanding earlier engagement with DfT, the methodology employed to model and appraise the effects of the scheme (excluding the impacts of re-routing and variable demand responses) are a significant departure from guidance. This will lead to a low level of assurance of the analysis supporting the scheme appraisal and we want to work with you to investigate how we can best mitigate this issue. Some limited evidence has been provided about the potential impacts; however, it would be helpful to discuss what further evidence you may have available and/or what further analysis/sensitivity tests could be undertaken. Any thoughts you might have on this would be helpful and this is an issue we would wish to discuss further with you once you have had a chance to consider."*

Modelling the scheme within the Midlands Connect Highway Model (MCHM) is proposed in order to address the above comments. To this end, a review of the performance of the MCHM along the A614/A6097 corridor has been undertaken. This included a simple local base year validation exercise along the corridor to demonstrate the model's suitability and robustness for testing the scheme.

The exercise has involved the examination of the existing model validation in the area of the scheme corridor, and a count comparison exercise looking at a number of count sites

in the local area of the scheme corridor. A comparison of modelled and observed journey times has also been undertaken. No additional model calibration has been undertaken.

The model used is a SATURN model, and is a variant of the Highways England Midlands Regional Transport Model, which was developed using data from March 2015. It has been run in SATURN version 11.3.12U – the version in which it was validated.

Following the model review, the scheme has been tested within the MCHM, with the purpose of checking that there is no major reassignment impact as a result of the scheme.

The forecast model years in the MCHM are 2026, 2031 and 2041. The A614 scheme economic case is based on the forecast years 2023 (opening year) and 2037 (design year). To reconcile these differences in forecast years, the 2031 MCHM forecast year has been used, as a mid-way point between the two appraisal years, for the sensitivity assignments. Both the reassignment and VDM were conducted for 2031 and presented in the main body of the technical note.

# Existing Model Validation

## Background

The MCHM is a variant of the Highways England Midlands Regional Traffic Model. The model as a whole is validated and has its own model validation report. The model has a wide geographical coverage including the whole of the Midlands region and therefore the report was examined in order to check specifically for how well the model validates in the area of the scheme corridor and its surrounds.

## Journey Times

A standard approach using journey times and flows was adopted when producing the model validation report for the Midlands Regional Transport Model.

In terms of journey times, the model validation report examined a number of journey time routes, which are then broken down in to shorter journey time groups. The performance of these against TAG acceptability criteria is summarised in the table below, which is taken from Tables 10.19, 10.20 and 10.21 of the model validation report. TAG acceptability criteria dictate that “modelled times along routes should be within 15% of surveyed times (or 1 minute, if higher than 15%).”

**Table 1 - Model Validation Report journey time summary**

	Number of routes/groups	AM	IP	PM
<b>All Routes</b>				
Journey Time Routes Difference <15%	144	83%	88%	77%
Journey Time Routes Difference <25%	144	94%	96%	92%
Journey Time Groups Difference <15%	700	77%	81%	77%
Journey Time Groups Difference <25%	700	89%	93%	89%
<b>Motorways Only</b>				
Journey Time Groups Difference <15%	125	87%	90%	88%
Journey Time Groups Difference <25%	125	98%	98%	98%

This shows that generally, the model as a whole performs well, with 83%, 88% and 77% of journey time routes in the AM, IP and PM peaks meeting the TAG acceptability criteria. This improves when looking at journey time groups on motorways, where 87%, 90% and 88% of journey time groups pass the TAG acceptability criteria. Given the main function of the model is for strategic forecasting, this is important.

One of the journey time routes used includes the proposed scheme corridor and is looked at specifically here. The route runs along the A6097 from its junction with the A46 near East Bridgford, then joins the A614 at Warren Hill and continues along it to its junction with the A1 and A57 near Upper Morton.

The differences between observed and modelled journey time are summarised in the table below, having been taken from the model validation dashboard.

**Table 2 - Model Validation Report A614 journey time route summary**

A614/A6097 Time and Direction	Modelled/Observed Journey Time Differences
AM Northbound	10.3%
AM Southbound	0.7%
IP Northbound	3.4%
IP Southbound	-1.7%
PM Northbound	1.7%
PM Southbound	1.1%

It can be seen that for all periods and all directions, the TAG acceptability criteria are met on this route. Positive percentages indicate that the model is slightly slower in relation to observed journey times, which the route is in all cases, except for southbound in the interpeak. All of the modelled journey times are within 15% of the observed times.

This is reflected in some of the journey time plots extracted from the appendices of the model validation report, shown below and cropped down to focus on the study area and its surrounds. Green lines show links for which modelled time is within 15% of observed time (and therefore meets the TAG acceptability criteria), while yellow lines indicate a 15-20% difference, orange a 20-25% difference and red a 25% plus difference. The blue dashed line highlights the scheme corridor area.



Figure 1 - AM journey times A614/A6097 area (from model validation report)

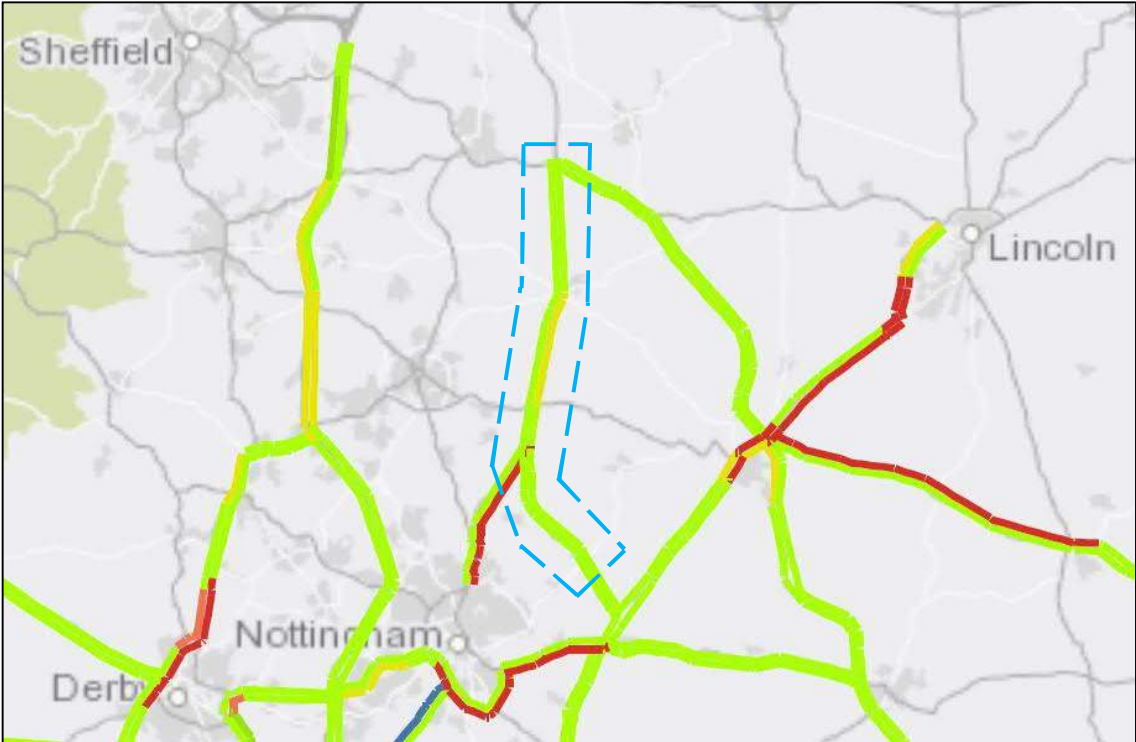
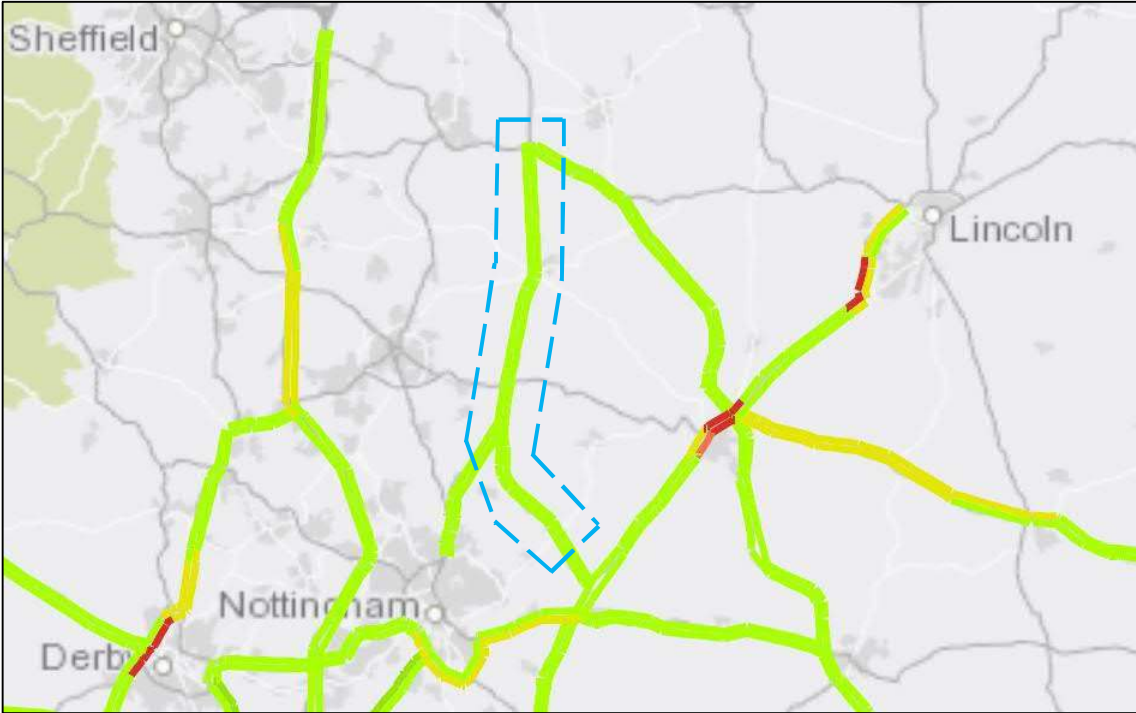
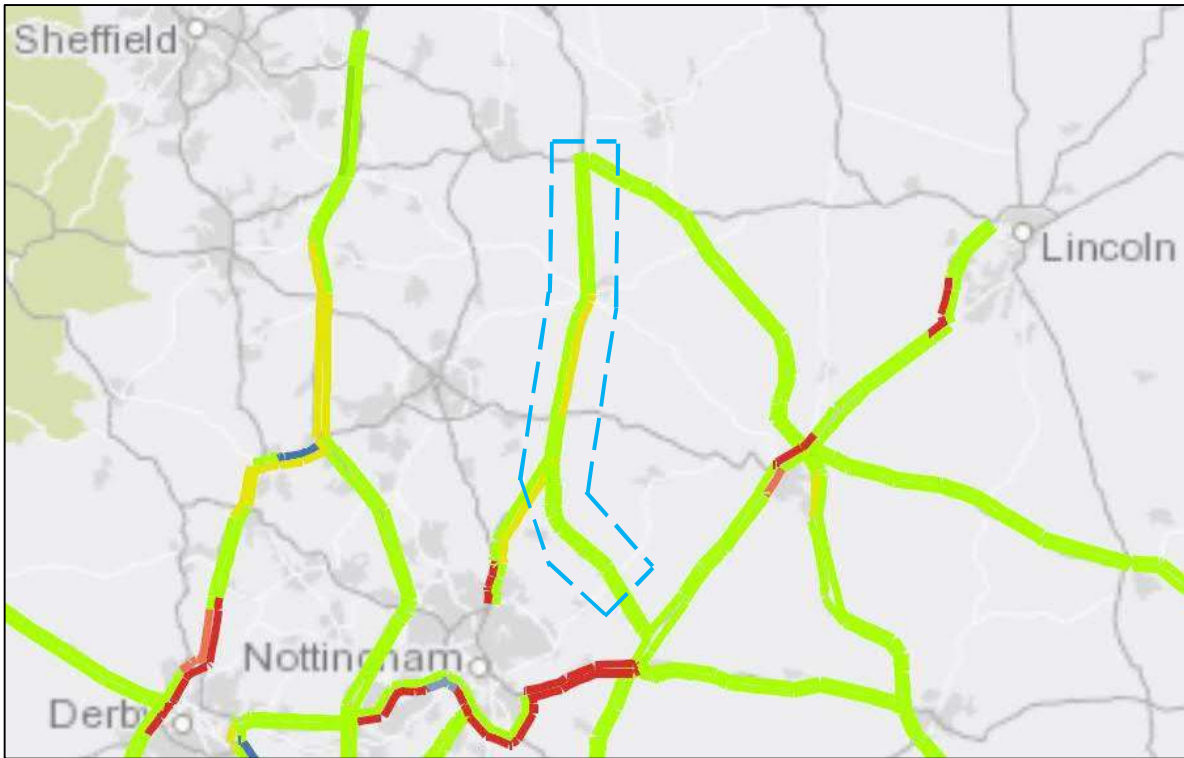


Figure 2 - IP journey times A614/A6097 area (from model validation report)





**Figure 3 - PM journey times A614/A6097 area (from model validation report)**



In some sections, marked in yellow on southbound sections of the A614, the model timings are slower than the observed times by between 15% and 20%. Otherwise, the majority of the scheme corridor is coloured green, demonstrating that modelled journey times are within 15% of the observed journey time – the critical threshold for TAG acceptability. In the AM peak, the red section southbound along the A614 from Warren Hill indicates a section that is more than 25% slower in the model than is observed.

**Traffic Counts**

The plots below, also taken from the model validation report, show the GEH statistic for links included in the model validation. Green lines indicate the GEH is below five, and therefore meets the TAG acceptability criteria, while various shades of blue show differing degrees of modelled flow being less than the observed, and various shades of red showing the modelled flow being more than the observed flow all with GEH values greater than minus or plus 5.0. The plots show GEH calculated for all flow on the link. The blue dashed line highlights the scheme corridor area.

**Figure 4 - AM GEH (from model validation report)**



**Figure 5 - IP GEH (from model validation report)**

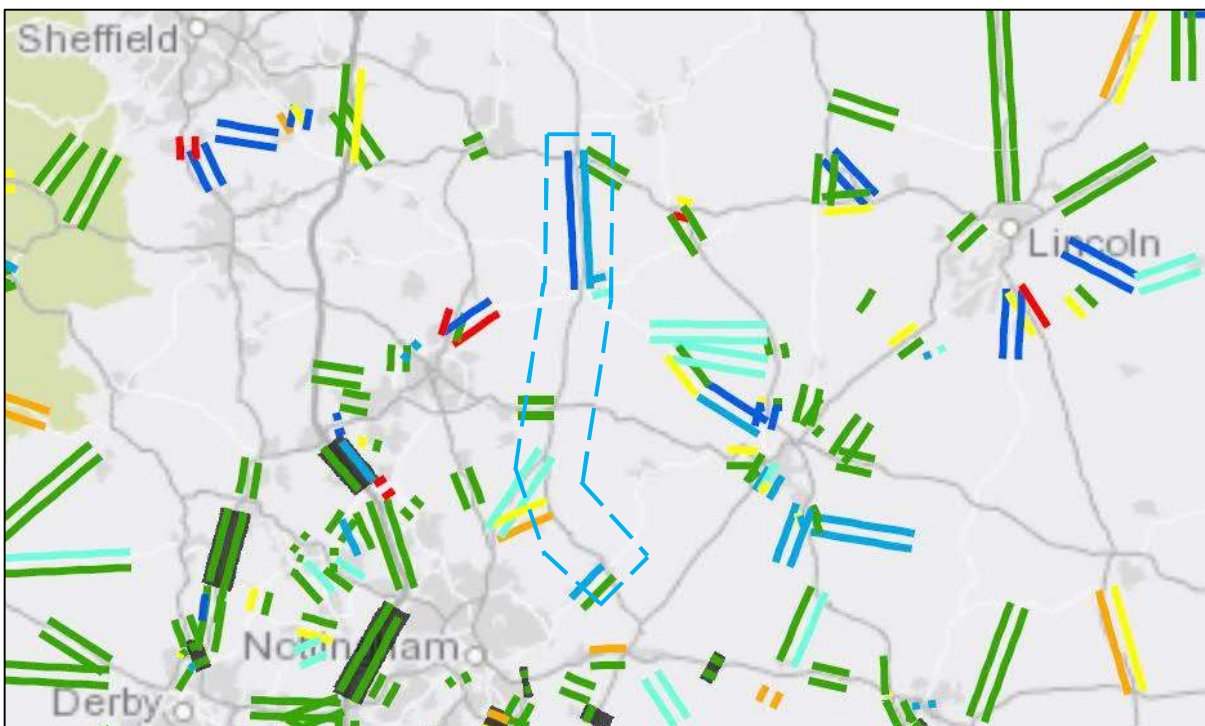
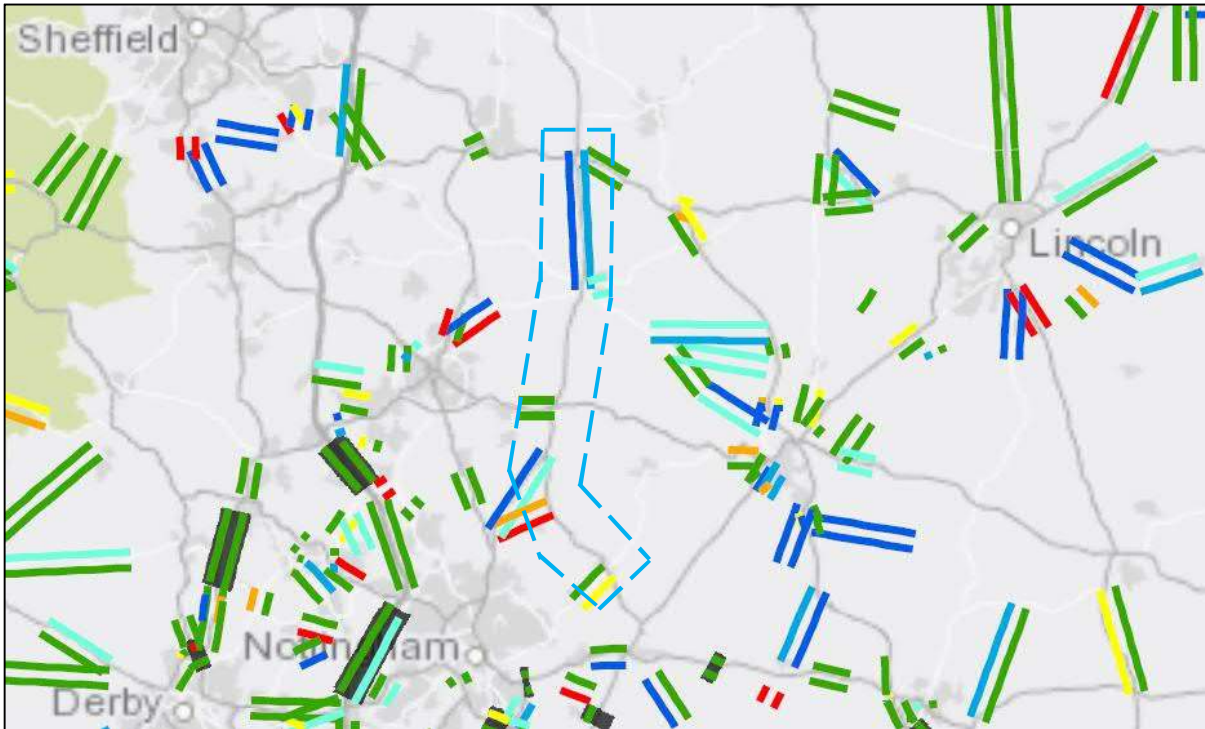


Figure 6 - PM GEH (from model validation report)

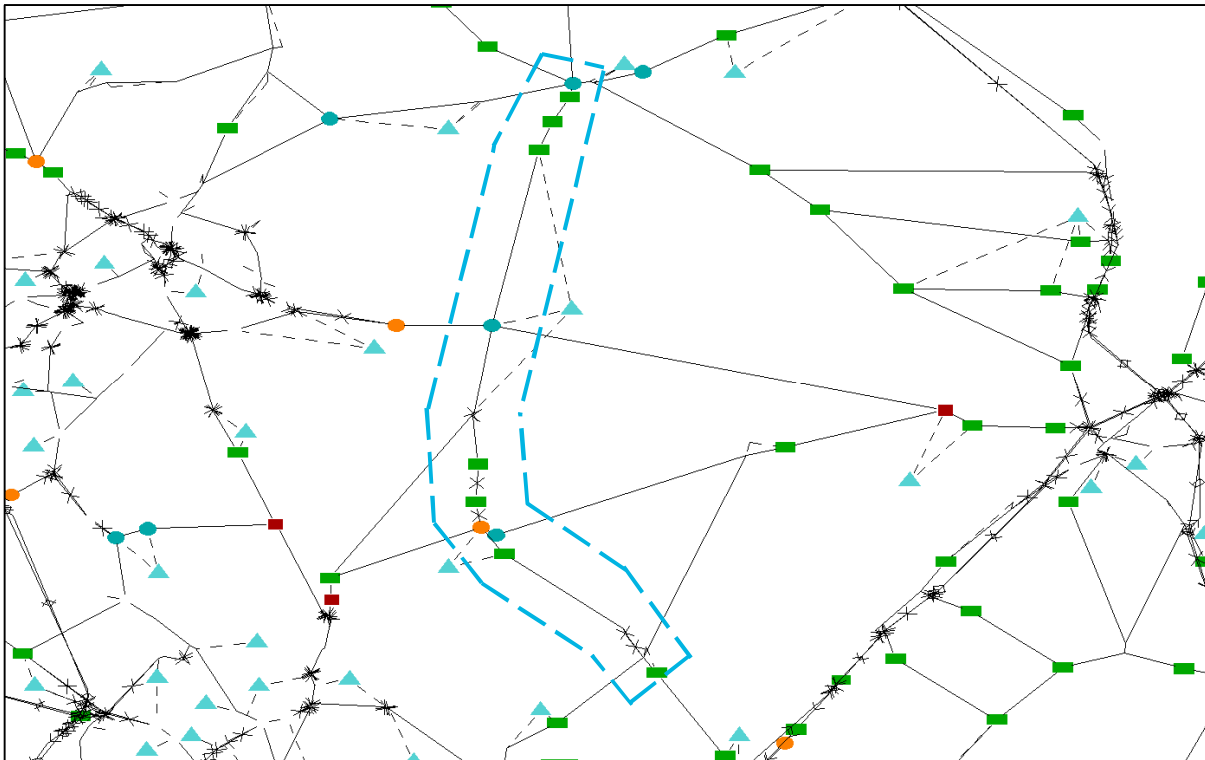


It is noticeable that, across all time periods, the modelled flows are less than observed on the A614 south of Warren Hill, but higher than observed on the B6386, which links the A614 and A6097. This indicates a possible routing issue in terms of the choice between these two routes, although, due to spider connectors loading traffic from zones on to links in the area, it would be expected that it would be more difficult to validate counts.

In terms of alternative routes, generally the M1 performs better, which was to be expected knowing the model performs strongly on the strategic road network. Alternative corridors to the east have the same issues referenced above with regard to zone loading in areas away from the strategic road network.

In order to illustrate the issues referenced above with regard to zone loading, the plot below shows the SATURN network on the scheme corridor and its surrounds, which illustrates the use of spider connectors for zone loading which span multiple nodes in most areas away from the motorway network. Blue triangles indicate model zones.

**Figure 7 - Midlands Connect Model network structure**



There are two validation counts on the A614 itself included in the model validation dashboard – one to the south of Warren Hill, and one to the north of the Ollerton roundabout. The percentage difference in flow for each time period is shown here, alongside the relevant GEH statistic.

**Table 3 - A614 validation counts from RTM validation dashboard**

Location	SATURN link	AM Difference	AM GEH	IP Difference	IP GEH	PM Difference	PM GEH
A614 North of Ollerton (NB)	42060_42132	-42.3%	13.4	-37.1%	10.5	-37.7%	11.5
A614 North of Ollerton (SB)	42132_42060	-36.3%	11.2	-30.7%	8.6	-34.1%	10.6
A614 South of Warren Hill (SB)	41758_41708	-33.7%	10.6	-34.2%	7.6	-30.1%	8.3
A614 South of Warren Hill (NB)	41708_41758	-48.0%	14.0	-34.9%	7.7	-54.2%	18.2

It can be seen that across all time periods and count sites, the modelled flow is less than the observed flow. Validation on the corridor is particularly compromised by the zone to the east of the A614, taken to represent the village of Bilsthorpe and the surrounding area, which employs spider connectors spanning three nodes along the scheme corridor in order to load and unload traffic from the network. Indeed, one of the spider connectors loads directly in to the Warren Hill junction, which is one of the junctions to be improved as part of the scheme.



## Comparison to Existing Counts

The modelled data in various areas were compared to a number of additional counts, drawn from two different sources:

- Highways England WebTRIS counts; and
- Nottinghamshire County Council's C2Web traffic count database.

Counts were selected in order to take into account the main scheme corridor (A6097 and A614), parallel routing options (like the A46 and A1 via Newark, the M1, and the A60 via Mansfield), and east-west routes crossing the main scheme corridor.

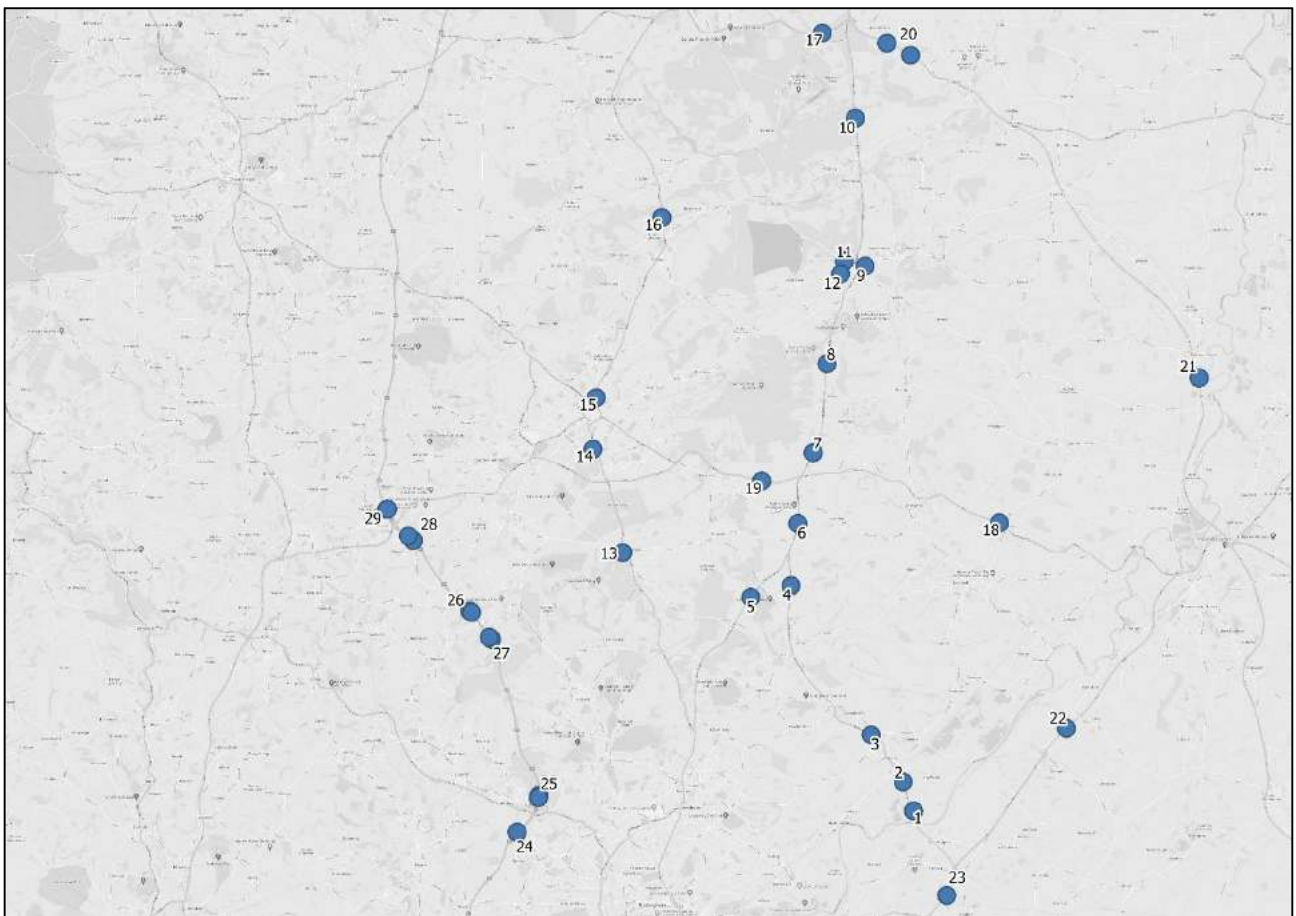
A diagram table showing the various site locations and a map showing their placement is shown below.

**Table 4 - Location of counts**

Location	Site	Date
Gunthorpe	1	Mar-15
South of A612	2	Mar-15
North of A613	3	Mar-15
A6079 South of Warren Head	4	Mar-15
A614 South of Warren Head	5	Mar-15
North of Warren Head/South of A617	6	Mar-15
North of A617	7	Mar-15
A614 South of Ollerton	8	Mar-15
A616 East of Ollerton	9	Mar-15
A614 North of Ollerton	10	Mar-15
A616 Northwest of Ollerton	11	Mar-15
A6075 Southwest of Ollerton	12	Mar-15
A60 South of A617	13	Mar-15
A60 North of A617	14	Mar-15
A60 North of Mansfield	15	Mar-15
A60 South of A616	16	Mar-15
A57 Worksop/A1	17	Mar-15
East of A614	18	Jul-17
West of A614	19	Jun-15
A1 Upper Morton	20	Mar-15
A1 Sutton on Trent	21	Jun-15
A46 Newark on Trent/East Bridgeford	22	Mar-15

A46 Bingham/East Bridgeford	23	Mar-15
South of J26	24	Mar-15
North of J26	25	Mar-15
North of J27	26	Mar-15
South of J27	27	Mar-15
South of J28	28	Mar-17
North of J28	29	Mar-17

**Figure 8 - Location of counts**



There were 29 additional count sites included – which, when taken in either direction, involved a total of 58 counts used as part of this analysis. For most sites, counts for March 2015 (the same as the model base) was obtained. For those sites where March 2015 data could not be obtained one of the following options (ordered) was used:

- The nearest neutral month of data was selected if available;
- March of the closest year to 2015 which could be factored by an NTEM growth factor taken from TEMPRO for car driver and passenger in Nottinghamshire for the relevant peak period; or
- Any remaining date for survey were used applying growth factor as above if necessary.

The validation criteria used comes from TAG (Transport Appraisal Guidance) Unit 3.1 for link flows are defined in the table below.

**Figure 9 - TAG validation criteria (TAG Unit M3.1)**

Criteria	Description of Criteria	Guideline
1	Individual flows within 100 veh/h of counts for flows less than 700 veh/h	> 85% of cases
	Individual flows within 15% of counts for flows from 700 to 2,700 veh/h	
	Individual flows within 400 veh/h of counts for flows more than 2,700 veh/h	
2	GEH < 5 for individual flows	> 85% of cases

Link flows that meet *either* criterion were regarded as satisfactory.

A summary of the number of sites for each time period in the base model that met the TAG validation criteria is shown in the table below.

**Table 5 - Count comparison summary table**

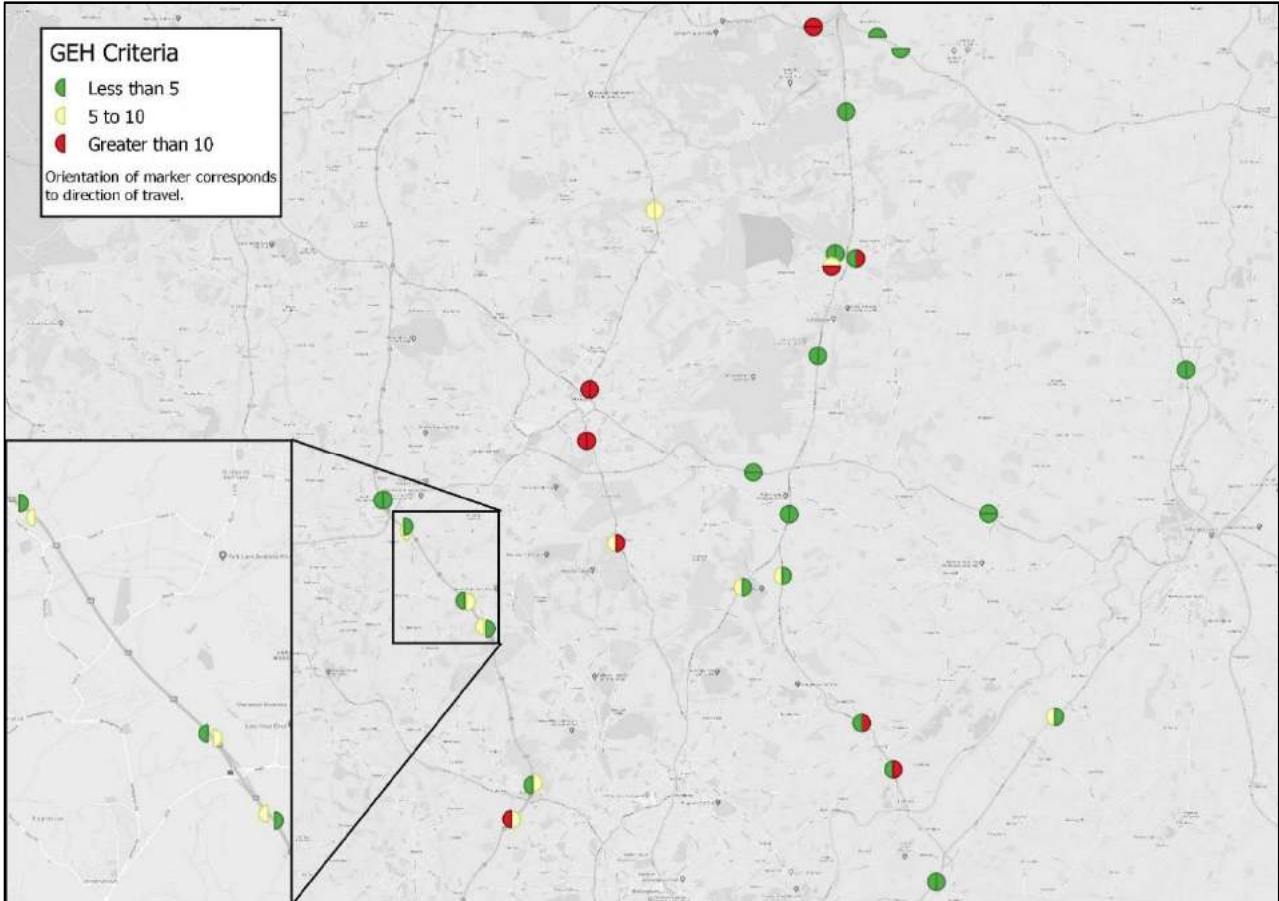
Peak	Sites Meeting Criteria	Total Sites	Total Criteria Met %
AM	33	58	57%
IP	34	58	59%
PM	19	58	33%

The proportion of counts meeting the criteria in this area is low, particularly in the PM peak. It falls short of the TAG acceptability guideline of 85% of cases meeting one of the two criteria in all three peaks.

Full tables showing modelled and observed counts, alongside GEH and flow criteria values, are included in **Appendix A**.

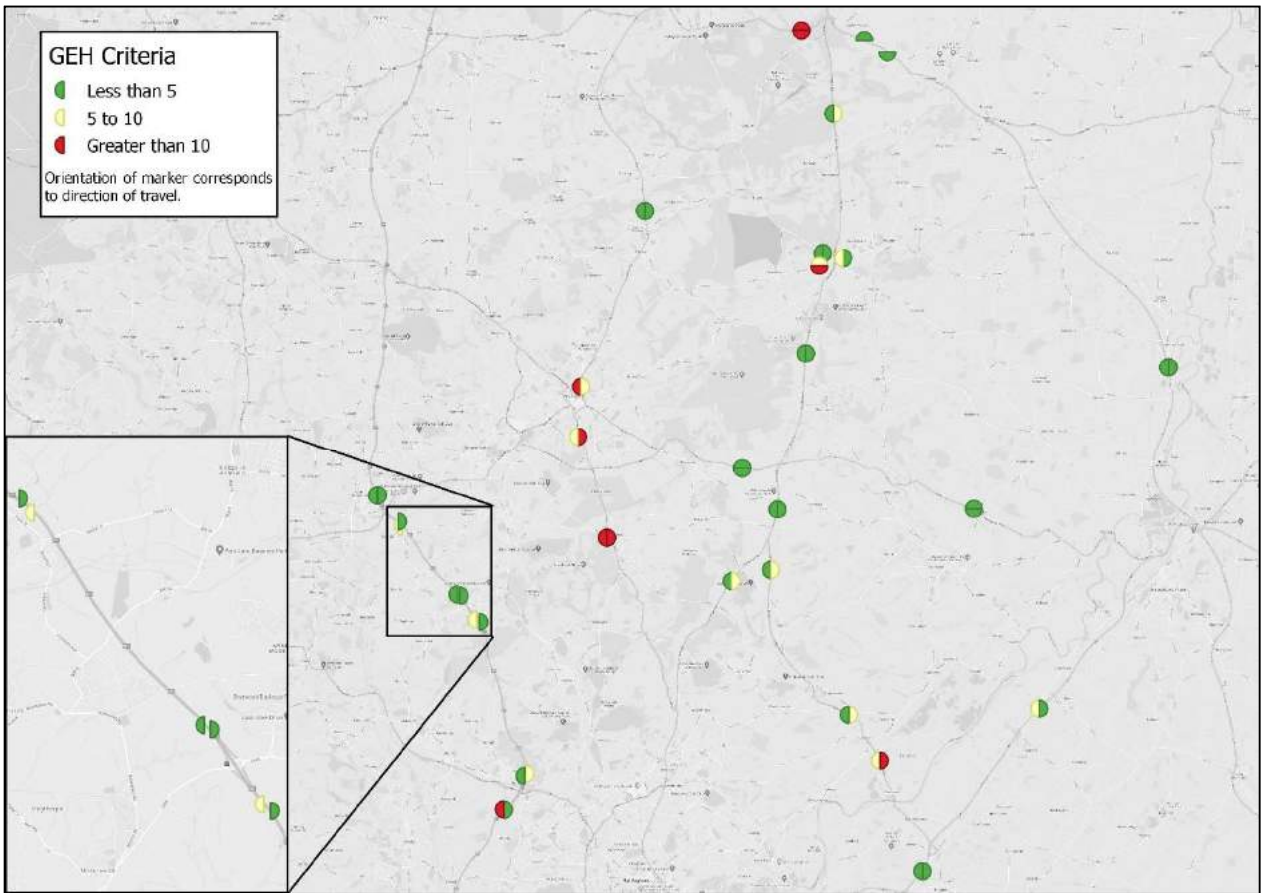
The maps below show the GEH for each site in each time period. Generally, along the scheme corridor, counts have GEH's of below 5 and therefore meet this TAG validation criterion.

**Figure 10 - AM count site GEH's**

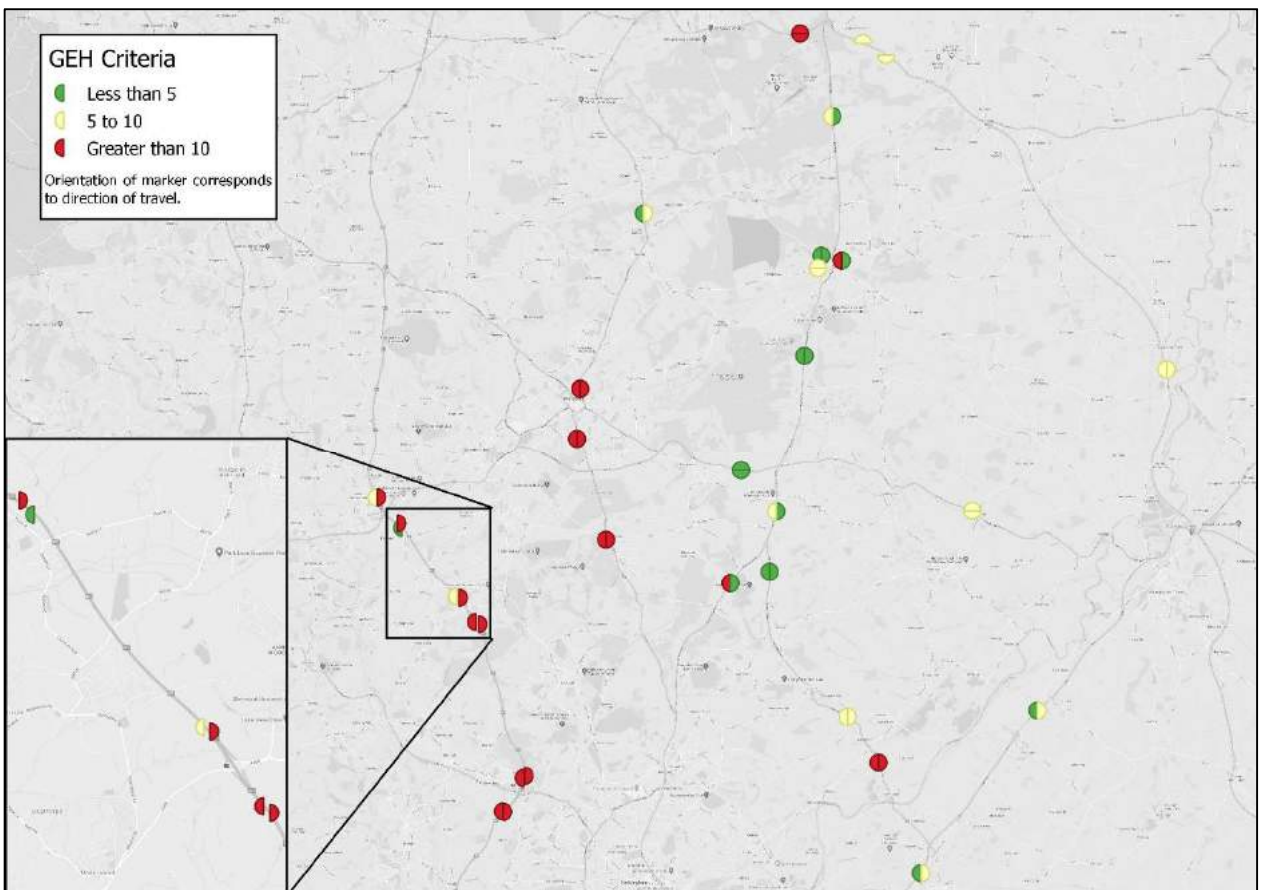




**Figure 11 - IP count site GEH's**



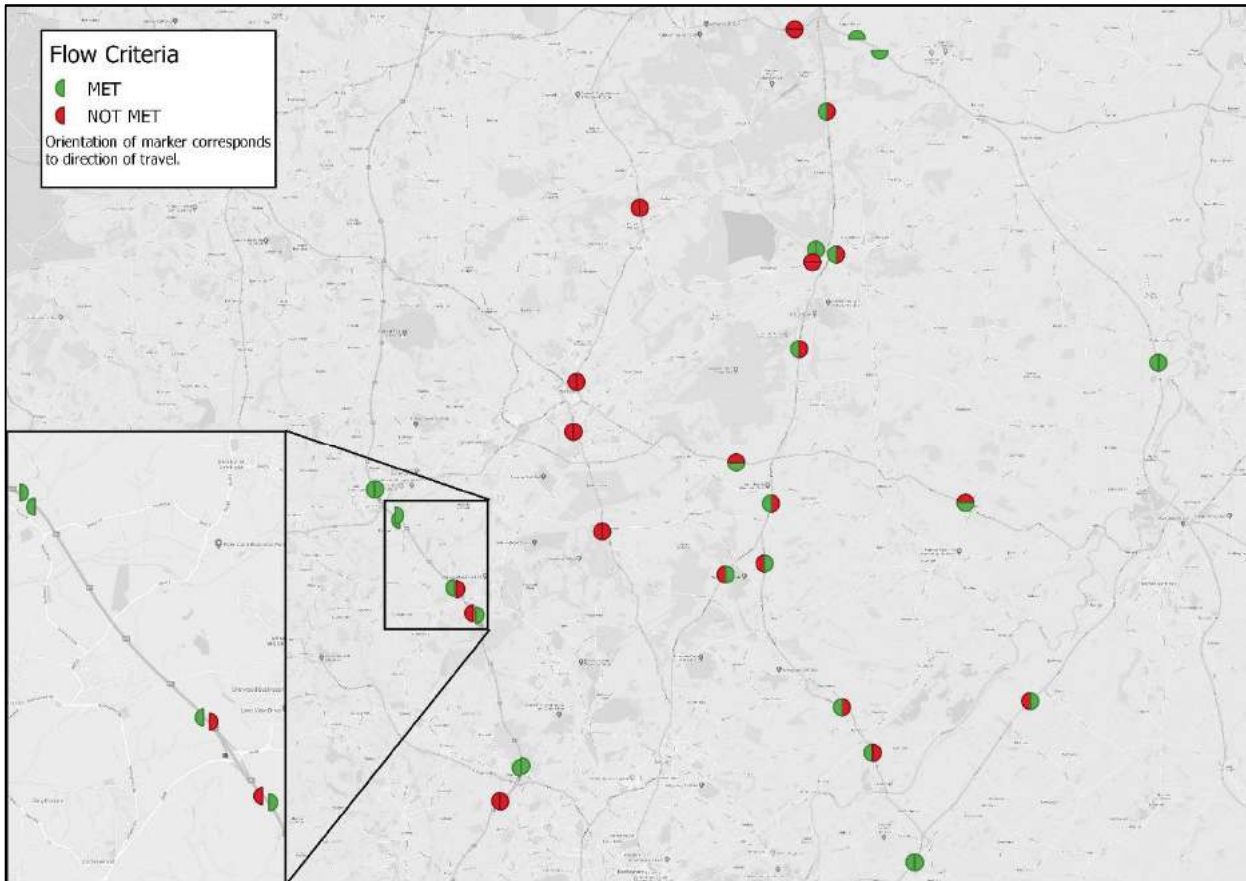
**Figure 12 - PM count site GEH's**



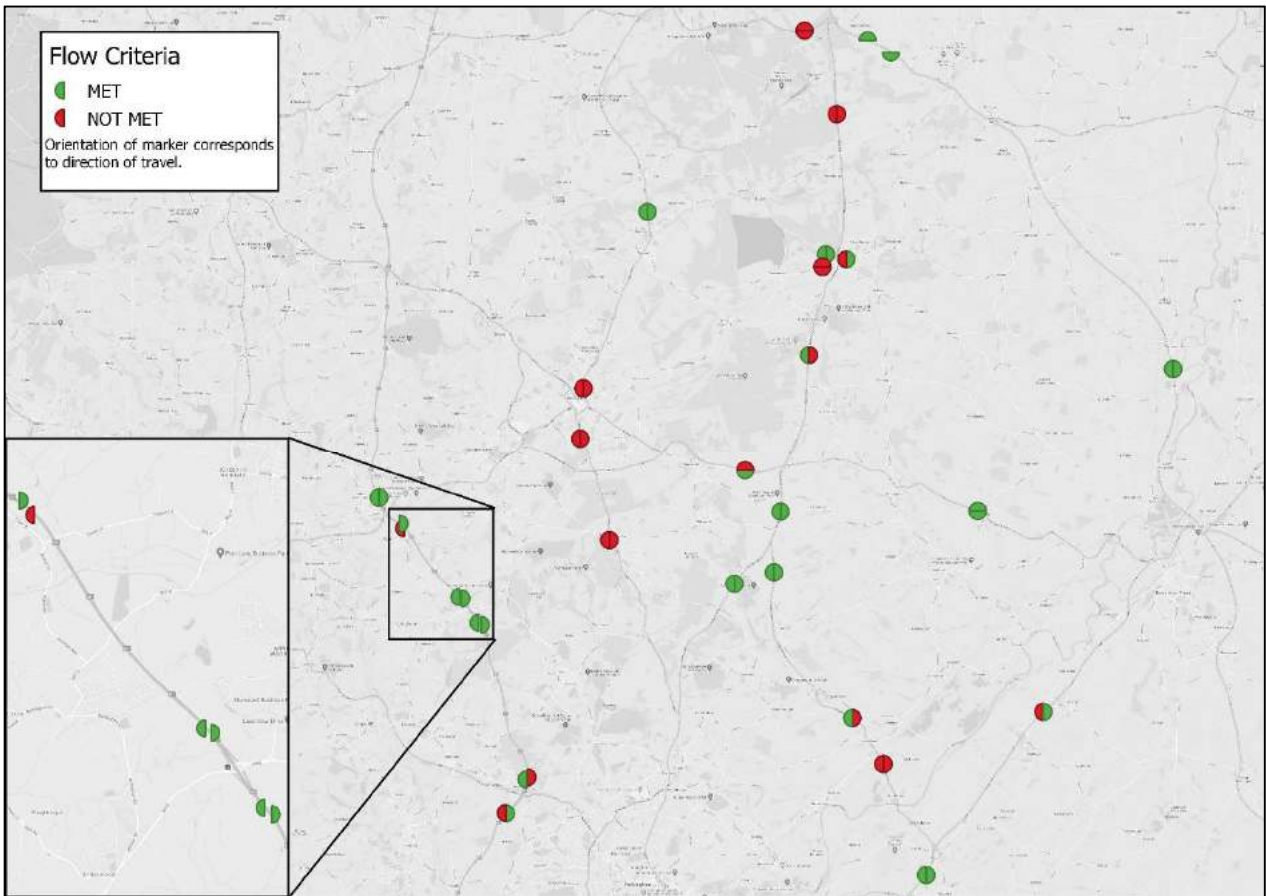
The PM model does not perform as well in this respect as the AM or IP models – with many counts on the scheme corridor having a GEH of between 5 and 10, and others on parallel routes having a GEH of over ten.

The maps below show whether the count has met its relevant flow criteria or not.

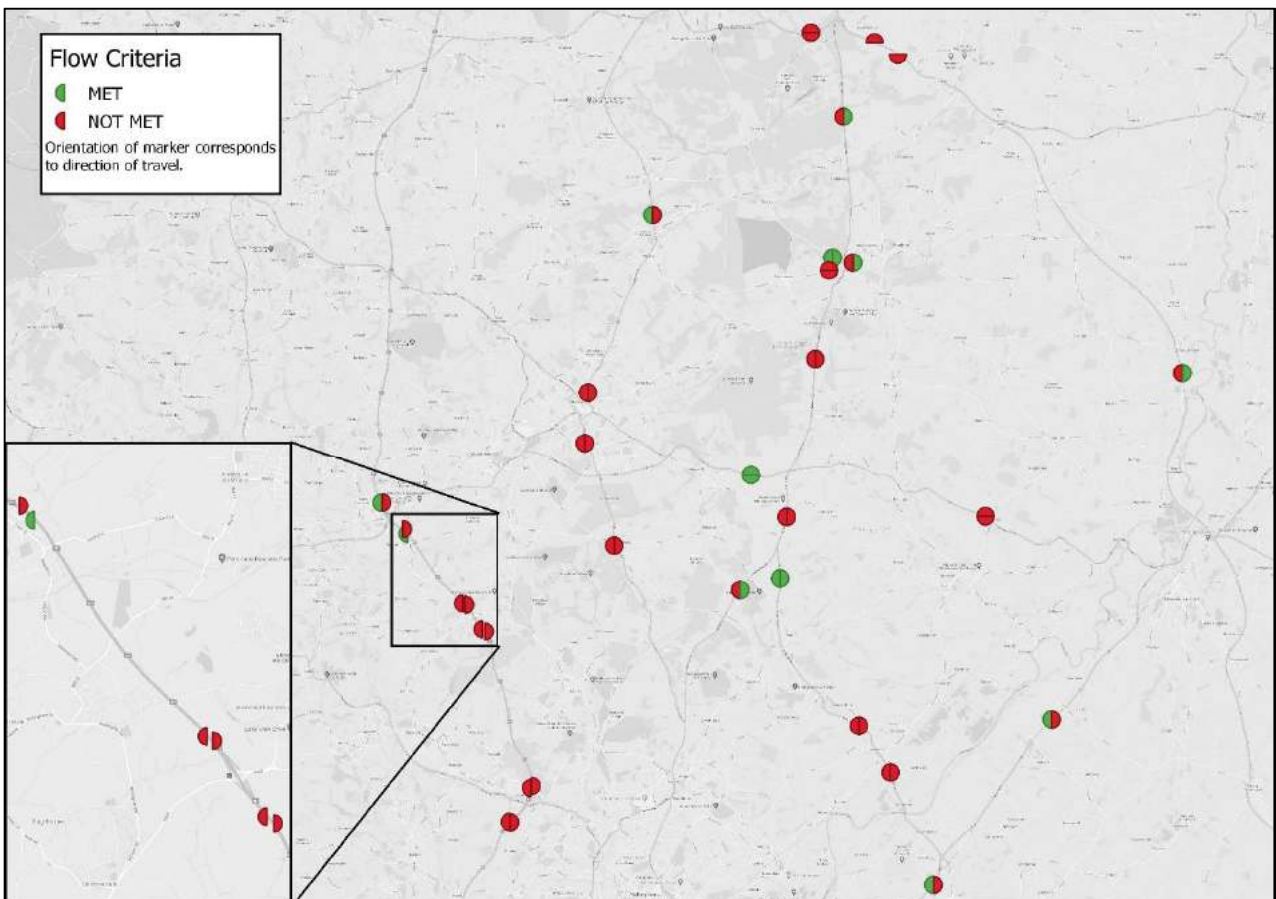
**Figure 13 - AM flow criteria**



**Figure 14 - IP flow criteria**



**Figure 15 - PM flow criteria**





TAG determines suitability if a site meets either one or both of the two criteria detailed above. Hence, the maps below show whether the site meets the criteria by meeting one or both of the criteria, or not.

**Figure 16 - AM criteria summary**

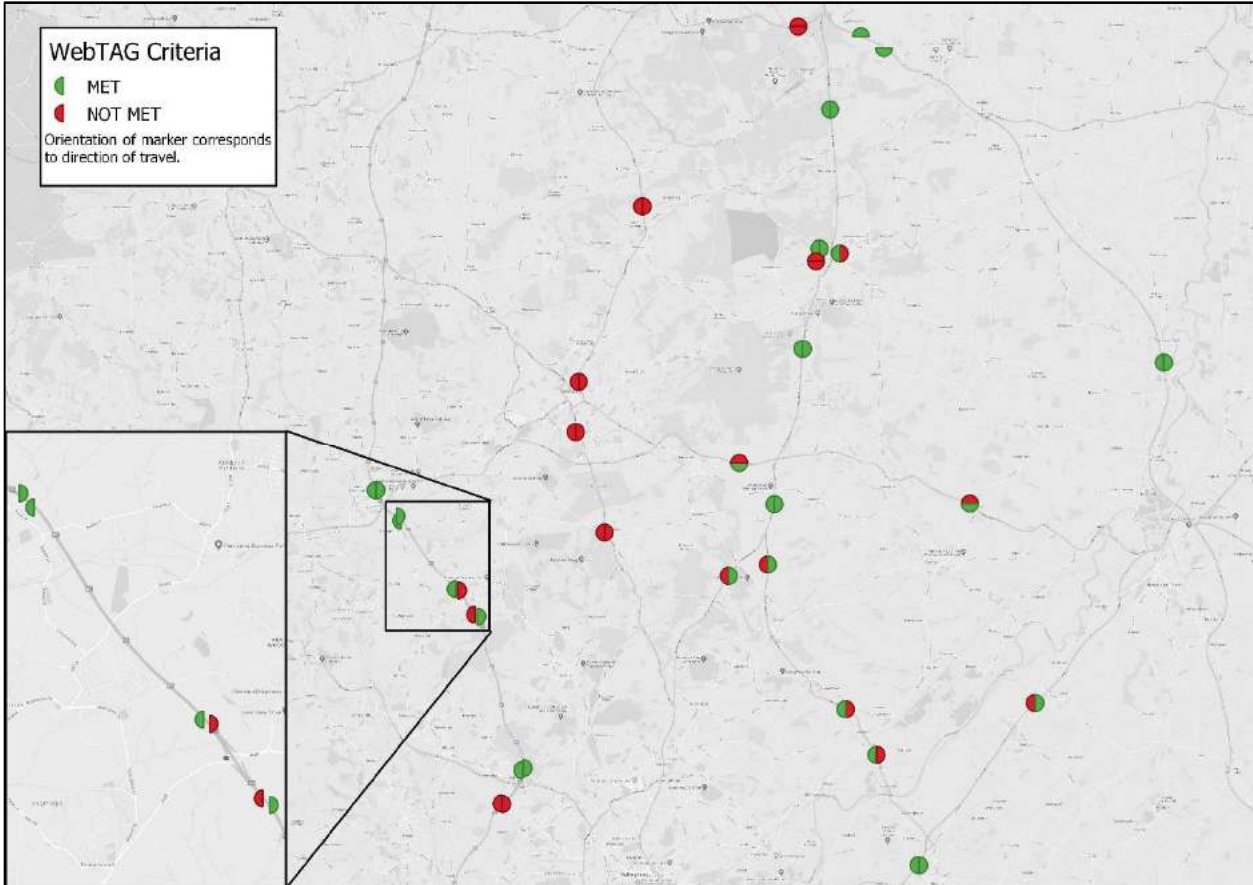


Figure 17 - IP criteria summary

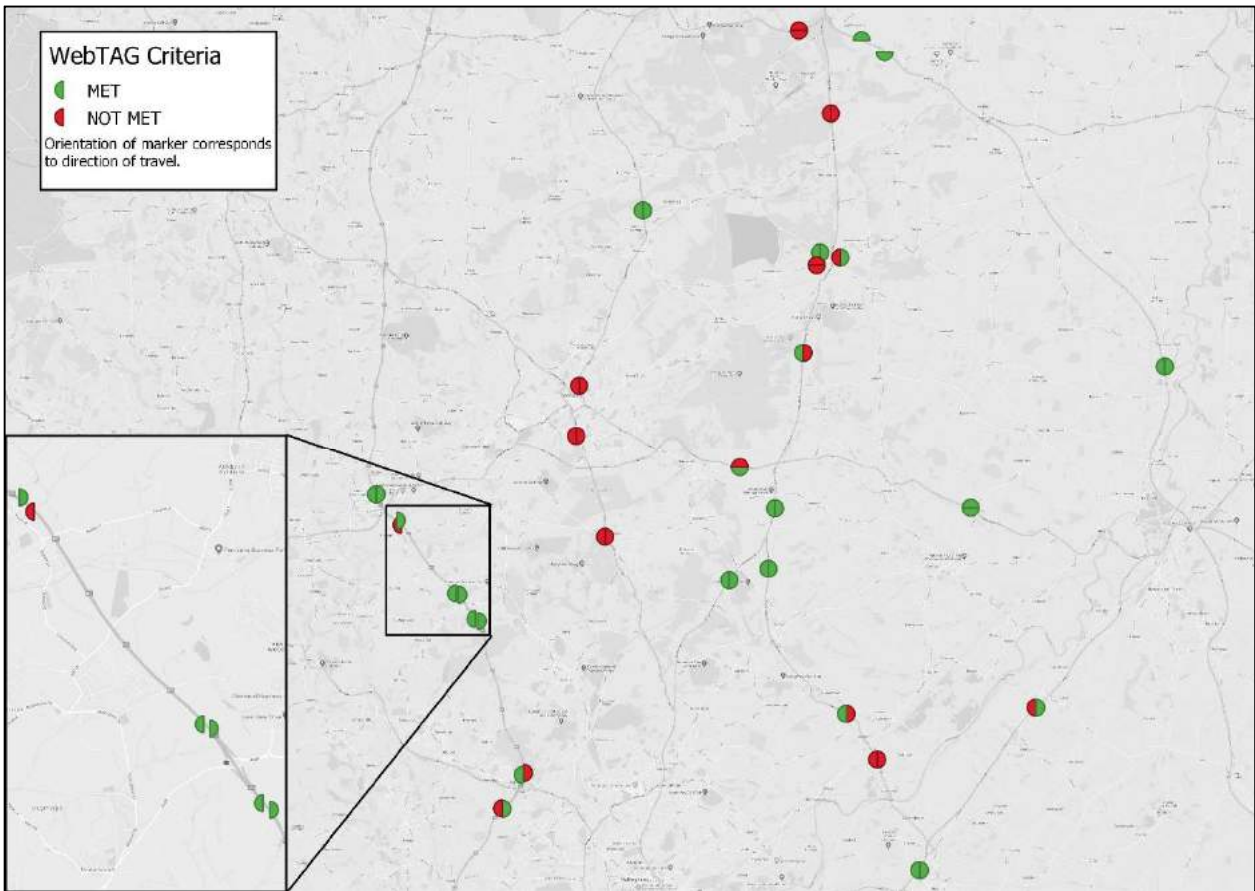
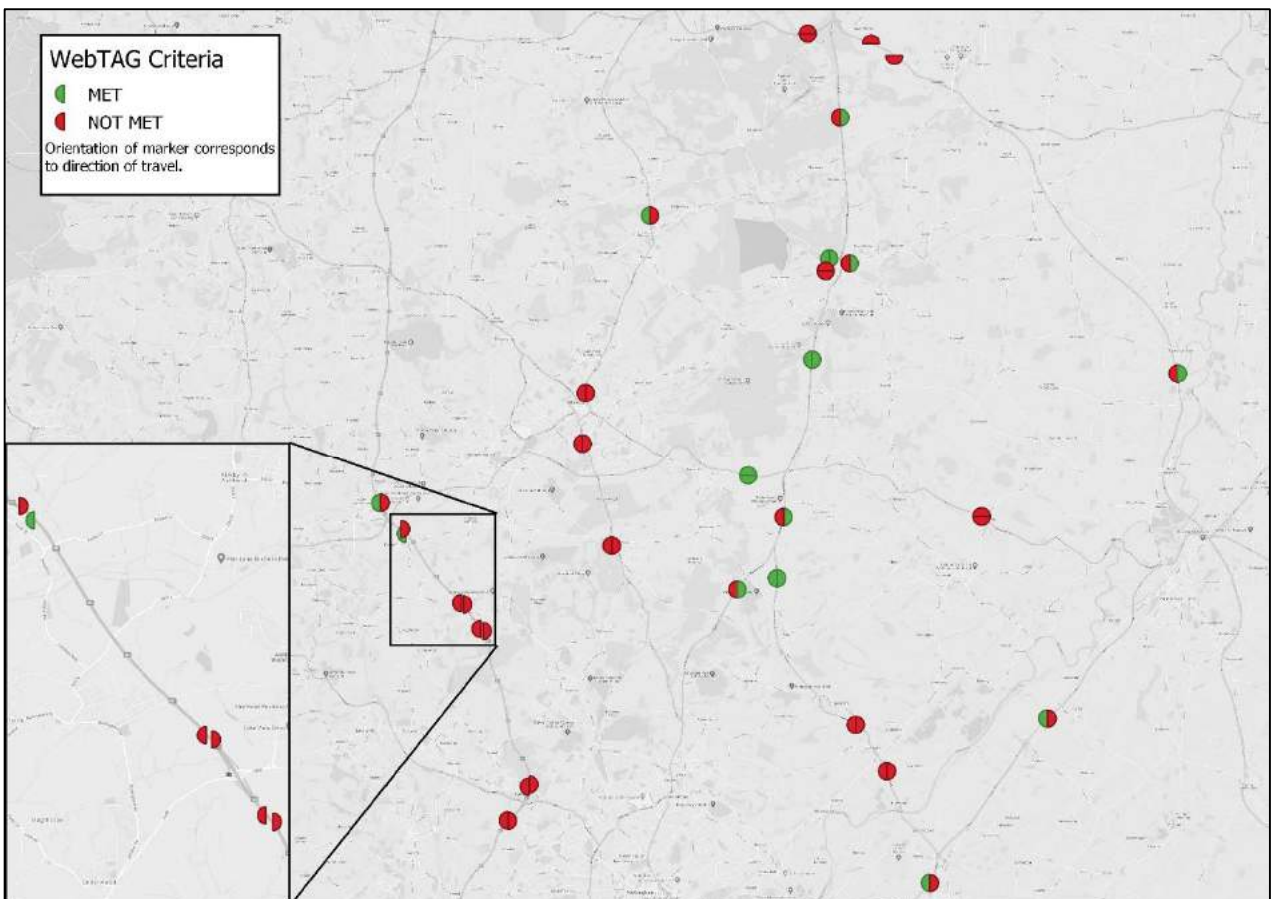


Figure 18- PM criteria summary



The AM and IP models have considerably more sites meeting TAG criteria than the PM model. Generally, across the AM and IP models, many of the sites on the scheme corridor meet the acceptability criteria, as well as the parallel routes on the M1 and A46/A1. The alternative route that does not have sites meeting the acceptability criteria consistently across the three time periods is the A60 through Mansfield – although it should be noted that this is an expected outcome, given that within the Regional Traffic Models, urban areas, such as Mansfield, are coded as fixed speed links, as such may not perform as well during any kind of validation.



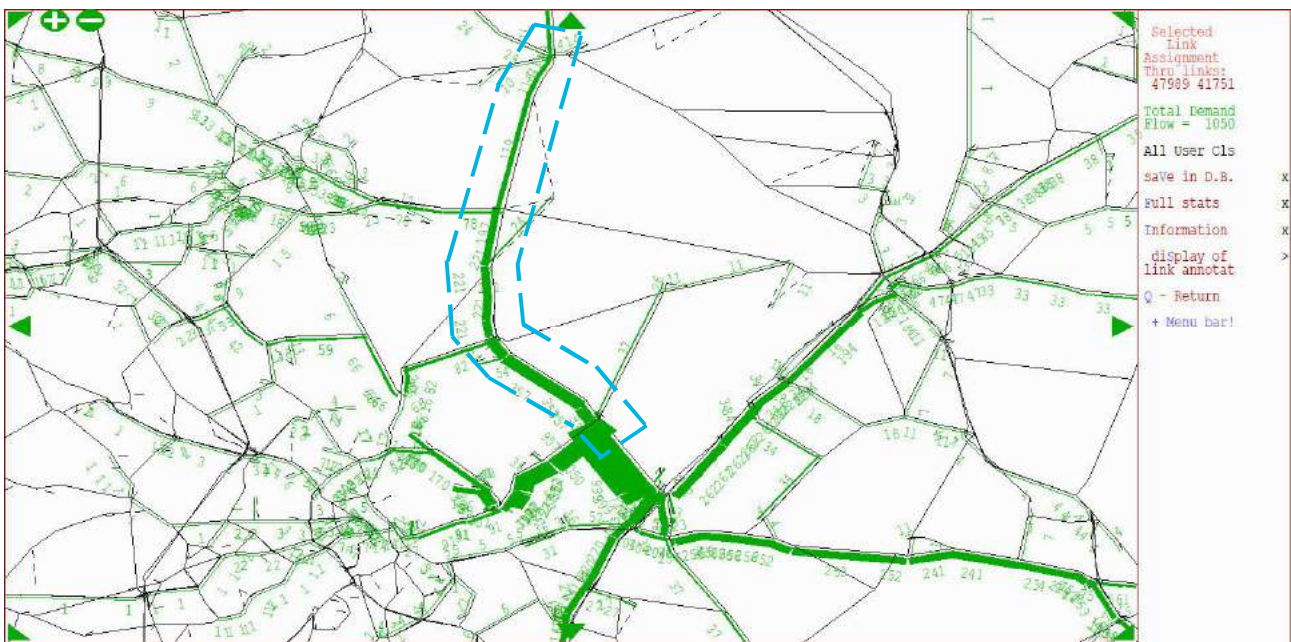
## Select Link Analysis

Select link analysis has also been performed upon two links in the base year model, in order to provide assurance around routing choices and patterns around the scheme corridor.

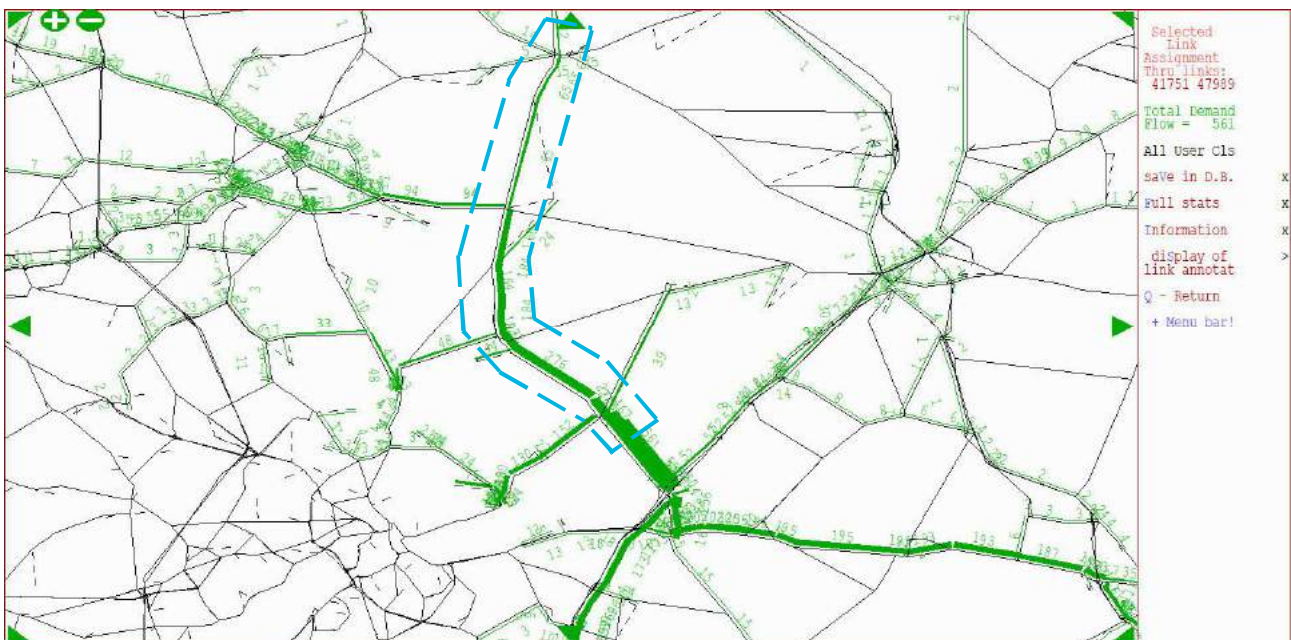
Two links have had this analysis undertaken: the link on the A6097 representing Gunthorpe Bridge, crossing the River Trent, and the link immediately south west the Warren Hill junction on the A614.

The base year AM and PM select link plots for the Gunthorpe Bridge link demand flows are shown below in equivalent passenger car units (PCUs). The scheme corridor is also highlighted in blue dotted lines.

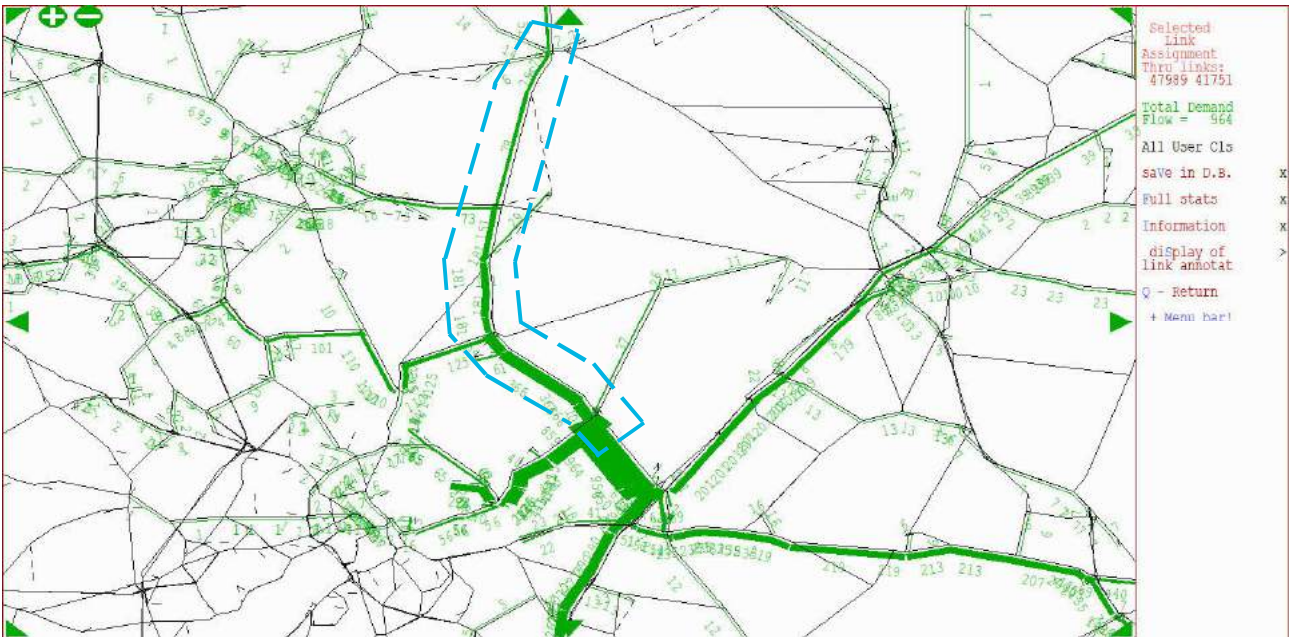
**Figure 19 - Base Year AM Gunthorpe Bridge northbound select link (demand, PCUs)**



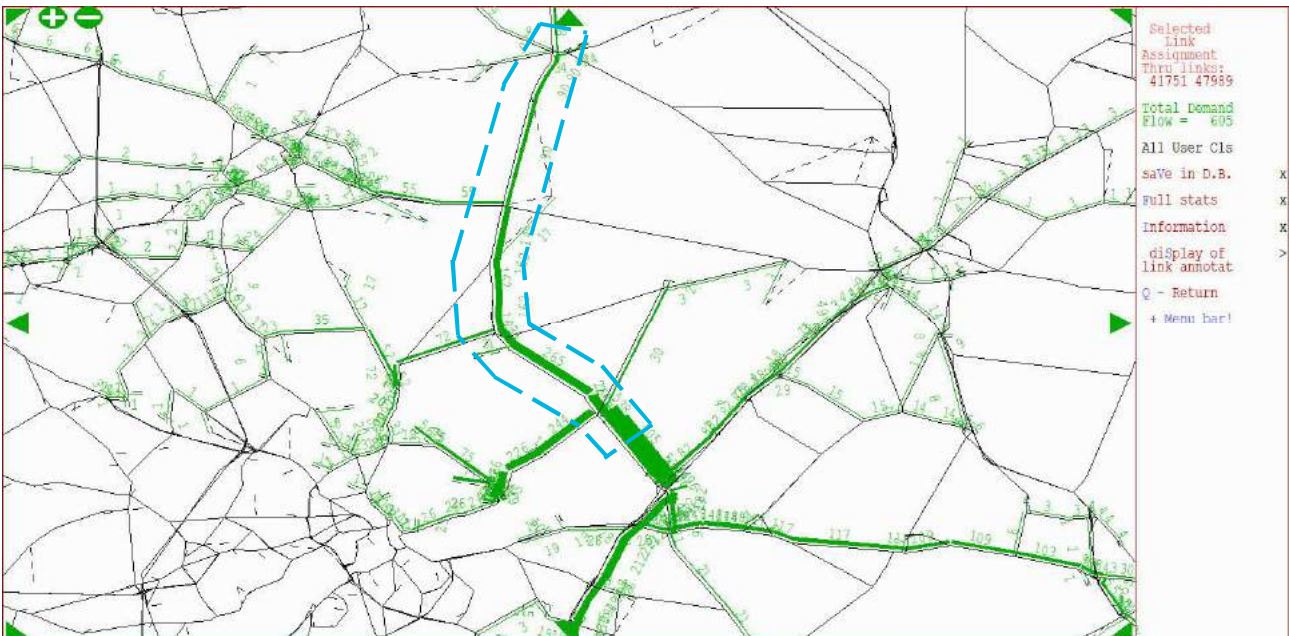
**Figure 20 - Base Year AM Gunthorpe Bridge southbound select link (demand, PCUs)**



**Figure 21 - Base Year PM Gunthorpe Bridge northbound select link (demand, PCUs)**



**Figure 22 - Base Year PM Gunthorpe Bridge southbound select link (demand, PCUs)**



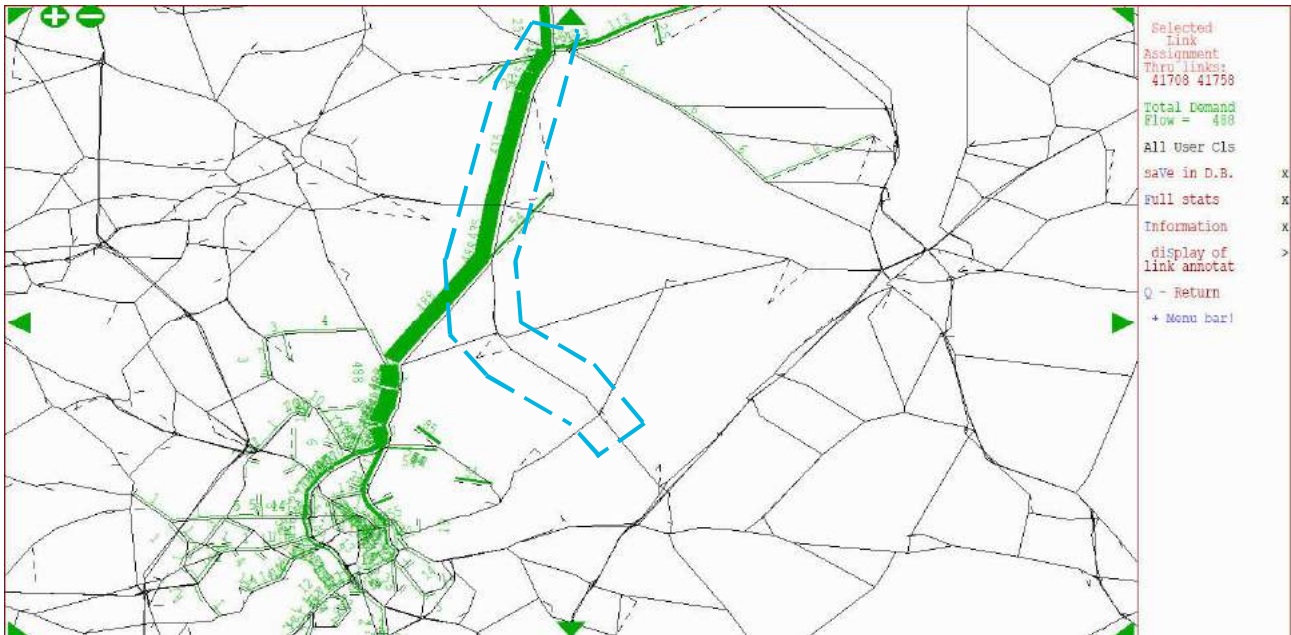
It can be seen in the link plots that traffic demand using this section of the corridor is largely comprised of the following movements:

- south of the River Trent to/from areas along the A46 towards Newark, along the A52 towards Grantham and along the A46 towards Leicester; and
- north of the River Trent to/from Nottingham, Mansfield and to a lesser extent the A1.

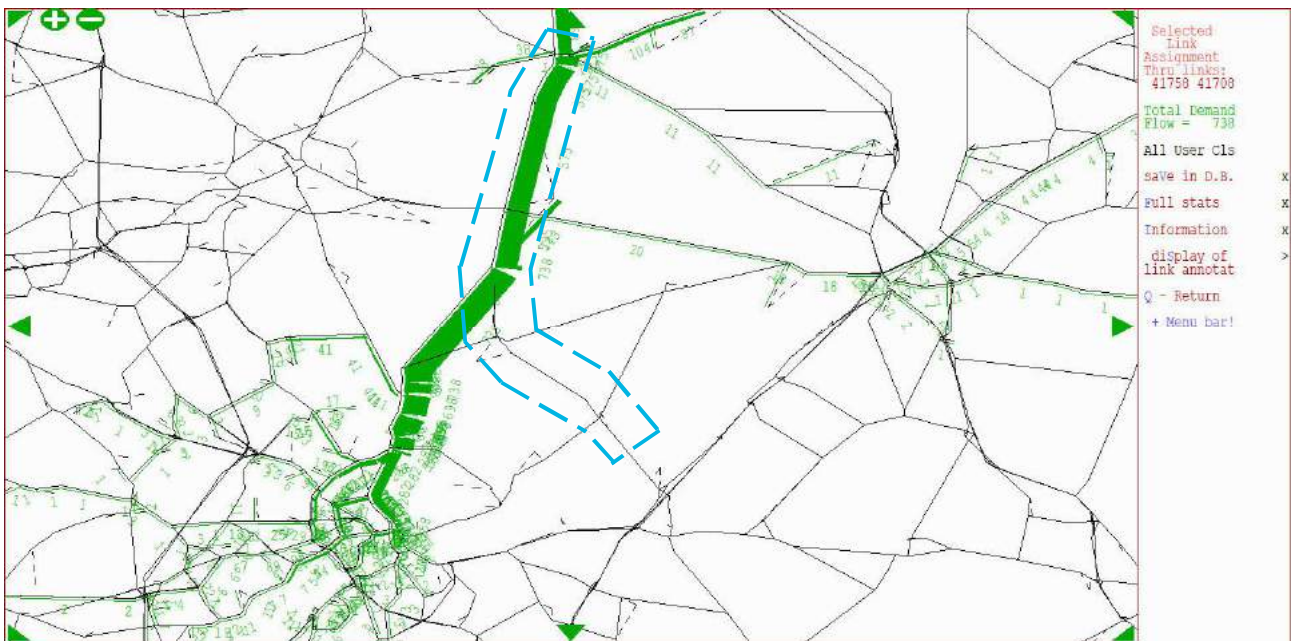


Plots for the select link analysis performed on the A614 south west of Warren Hill are shown below. Demand flows are shown below in passenger car units (PCUs). The scheme corridor is also highlighted in blue dotted lines.

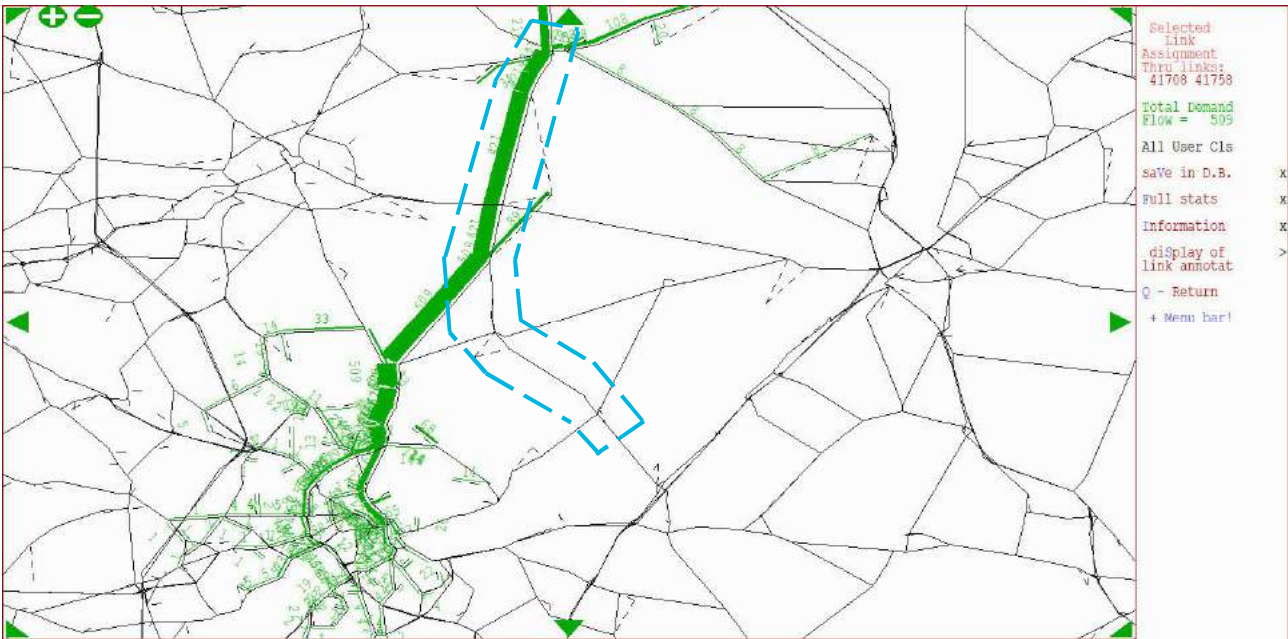
**Figure 23 - Base Year AM A614 northbound select link (demand, PCUs)**



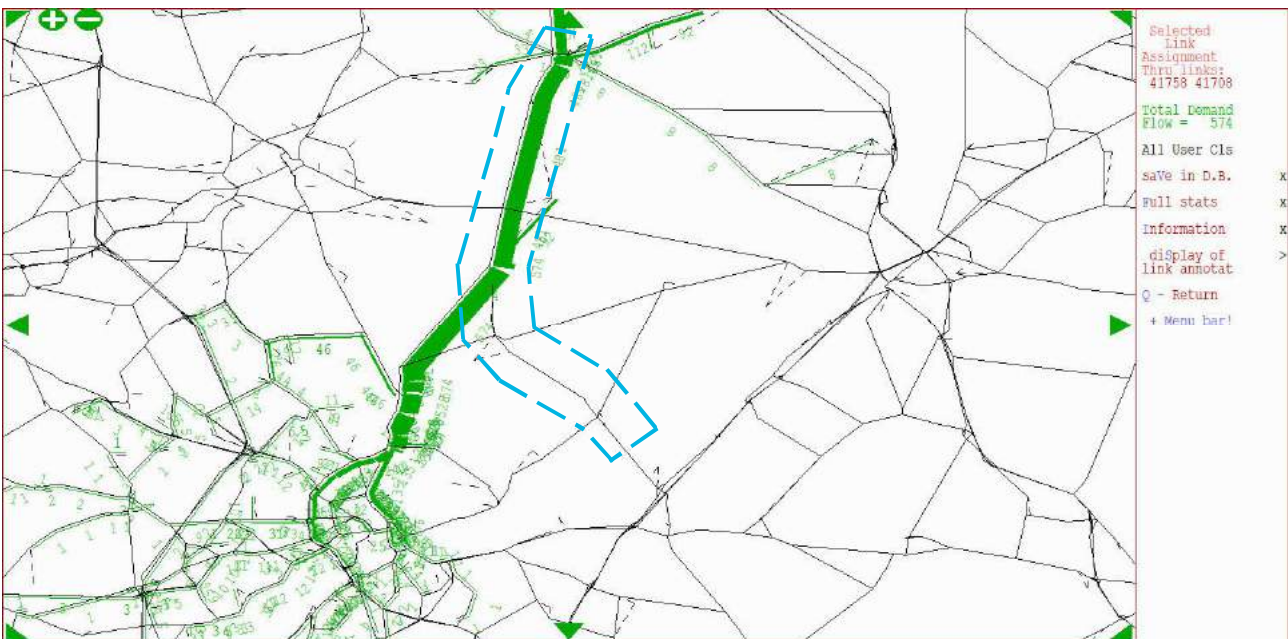
**Figure 24 - Base Year AM A614 southbound select link (demand, PCUs)**



**Figure 25 - Base Year PM A614 northbound select link (demand, PCUs)**



**Figure 26 - Base Year PM A614 southbound select link analysis (demand, PCUs)**



The plots show that most of the traffic using this link is all travelling between the north end of the corridor and Nottingham.

Given the above, route choice in the model is as expected, and demonstrates the lack of route choice for crossing the River Trent.

## Convergence

The table below shows the final line of the convergence summary table of the base year assignments.

**Table 6 - Base year model convergence statistics**

Peak	Loops	Ass.	Sim.	A/S Step	%FLOWS	%DELAYS	%V.I.	%GAP
AM	27	0.0043/16	0.001/ 3	0.528/ 3	99.1	99.5	0.00002	0.0044
IP	18	0.0024/23	0.001/ 4	0.976/ 2	99.3	99.8	0.00000	0.0042
PM	29	0.0033/16	0.002/ 4	0.619/ 2	99.0	99.5	0.00002	0.0037

The model converges in 27 loops in the AM peak, 18 loops in the IP peak and 29 loops in the PM peak. The percentage change in flows and delays in the model are over 99% across the board for the final loop. The changes in flow and delay for the final four loops in each time period are shown in the table below.

**Table 7 - Flow and delay changes in final four loops of assignment**

	AM % Flows	AM % Delays	IP % Flows	IP % Delays	PM % Flows	PM % Delays
Loop N-3	99.2	99.5	99.2	99.8	99.1	99.6
Loop N-2	99.0	99.4	99.4	99.8	99.2	99.5
Loop N-1	99.2	99.4	99.3	99.8	99.3	99.5
Final loop (N)	99.1	99.5	99.3	99.8	99.0	99.5

This shows a demonstrates a good level of convergence for a strategic model covering a large geographical area. The model shows notably strong stability in terms of delay over the final four loops of the assignment and meets TAG criteria of need four consecutive iterations that are greater than 98%.

## Summary

- The model as a whole performs well in terms of its validation on major links including motorways and the strategic road network.
- Validation has particular 'challenges' along the scheme corridor and nearby competing routes given the use of spider connectors for traffic to leave and enter the network and zones. In particular, there is a zone with three spider connectors for entry and exit joining on to the network directly on to the scheme corridor.
- However, along the scheme corridor, the modelled journey times compare reasonably well to the observed journey times and are within the TAG acceptability criteria.
- Model convergence is suitable and presents no issues for the use of the model for the purpose proposed.
- The MCHM model is suitable for use in the proposed sensitivity tests but does not contain sufficient detail along the A614/A6097 corridor to support scheme appraisal directly.



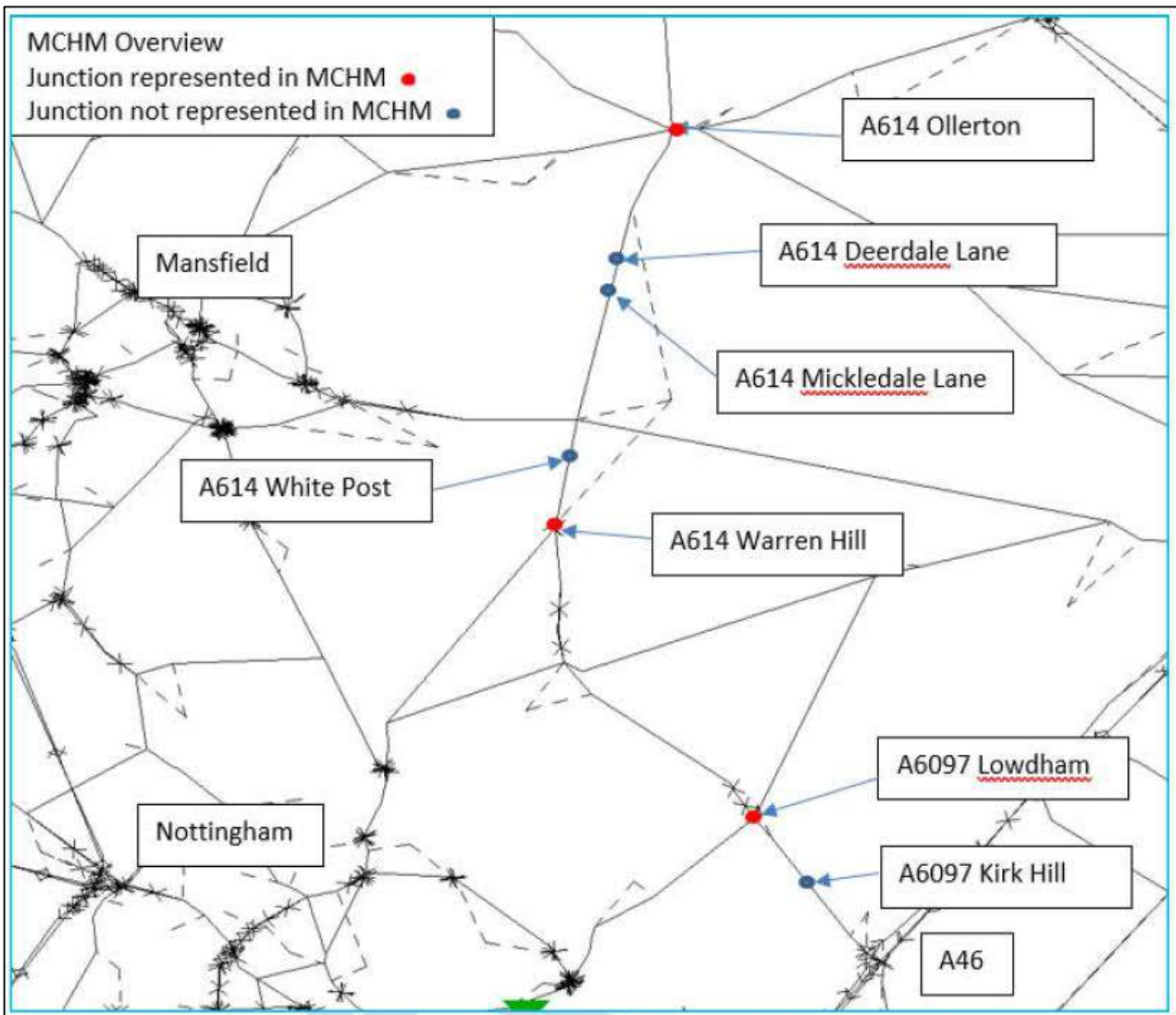
# Model Runs

## Methodology

### Improvements Coding

The plot below shows the junctions being improved and their location in the MCHM SATURN model.

**Figure 27 - Model Overview Plot**



As is shown above, only three of the seven junctions being improved as part of the scheme are included within the model. The table below describes the approach taken to simulating these in the model:

**Figure 28 - Model Coding Summary**

Junction	Status in Model	Approach
A614 Ollerton	Represented	Capacity improvements directly coded at this node.
A614 Deerdale Lane	Not represented	'Time penalty' coded onto the link to represent additional delay from adding a signal junction.
A614 Mickledale Lane	Not represented	'Time penalty' coded onto the link to represent additional delay from adding a signal junction
A614 White Post	Not represented	This is a white lining and safety scheme where there is no perceived change to journey times, and hence this element was not coded into the model.
A614 Warren Hill	Represented	Junction configuration changed to simulate an exploded roundabout junction.
A6097 Lowdham	Represented	Capacity improvements directly coded at this node.
A6097 Kirk Hill	Not represented	Alterations made to the speed / flow curve on the link to represent the time savings due to the extra capacity and reduced delay at this signalised junction.

Detail of the specifics of the updates to the junction coding / representation is given below.

- Ollerton and Lowdham – both are represented as roundabout nodes in the MCHM SATURN model. Hence, to simulate the improvements, the entry saturation flows and circulating capacities were increased, and gap acceptance shortened, where relevant and in line with the Regional Transport Model Coding Manual.
- Warren Hill – the junction is represented as a series of give way junctions. This was converted into an 'exploded' roundabout junction (i.e. linked 'give-way' junctions), in line with the guidance from the Regional Transport Model Coding Manual.
- Deerdale Lane and Mickledale Lane – these junctions are not explicitly represented in the model. Hence, additional delay as a result of signalisation was taken from the Linsig junction modelling for each of the two junctions, aggregated, and applied as a time penalty on the link where the junctions were located.
- Kirk Hill – this junction is also not represented in the model. The improvement is forecast to result in a reduction of delay. The time saving drawn from the Linsig junction modelling has been used to calculate the average increase in speed over the whole link where the junction is located, and the speed flow curve for that link altered appropriately – hence, 2kph has been added to the free flow and at-capacity speed for the relevant speed flow curve on that link.

## Fixed Demand Modelling

A number of fixed demand model run assignments were carried out in the first instance, in order to check the rerouting impacts of the scheme. There were three tests carried out, each building on top of the previous one, in order to assess the impact of the re-routing impact of the various scheme elements. The tests included the following components:

- Test 1: Improvements coded-in to the Ollerton, Warren Hill and Lowdham junctions (i.e. the junctions explicitly represented in the model).
- Test 2: Elements from Test 1, plus a 'time penalty' coded on a link to represent the combined delay from inserting signal junctions at Mickledale Road and Deerdale Lane (junctions not represented in the model, which would increase overall journey time).
- Test 3: Elements from both Test 1 and Test 2, plus an increase in speed coded in to the speed flow curve on the link to represent the junction with Kirk Hill having extra lanes and capacity added to it (junctions not coded in to the model, where the change would elicit an overall journey time saving along the link).

The above tests were carried out in the 2026, 2031 and 2041 future year MCHM. The reassignment tests for 2031 are present in the following sections and the runs undertaken for 2026 and 2041 are summarised in **Appendix B**.

The expected result is that there would be minimal rerouting, given the nature of the scheme and the lack of alternative route choice for crossing the River Trent through Nottingham and to the east of Nottingham.

## Variable Demand Modelling

The network for Test 3 (including simulations of all parts of the schemes) was then carried forward, in order to be tested using Variable Demand Modelling (VDM). A VDM run was performed for 2031 only.

The expected result is that the VDM will have minimal impact. The scheme corridor is a rural route, where the dominant mode is car, and it is not anticipated that the scheme would elicit any material mode change from public transport. It should be noted that goods vehicle elements of the matrix remain fixed as part of the VDM process.

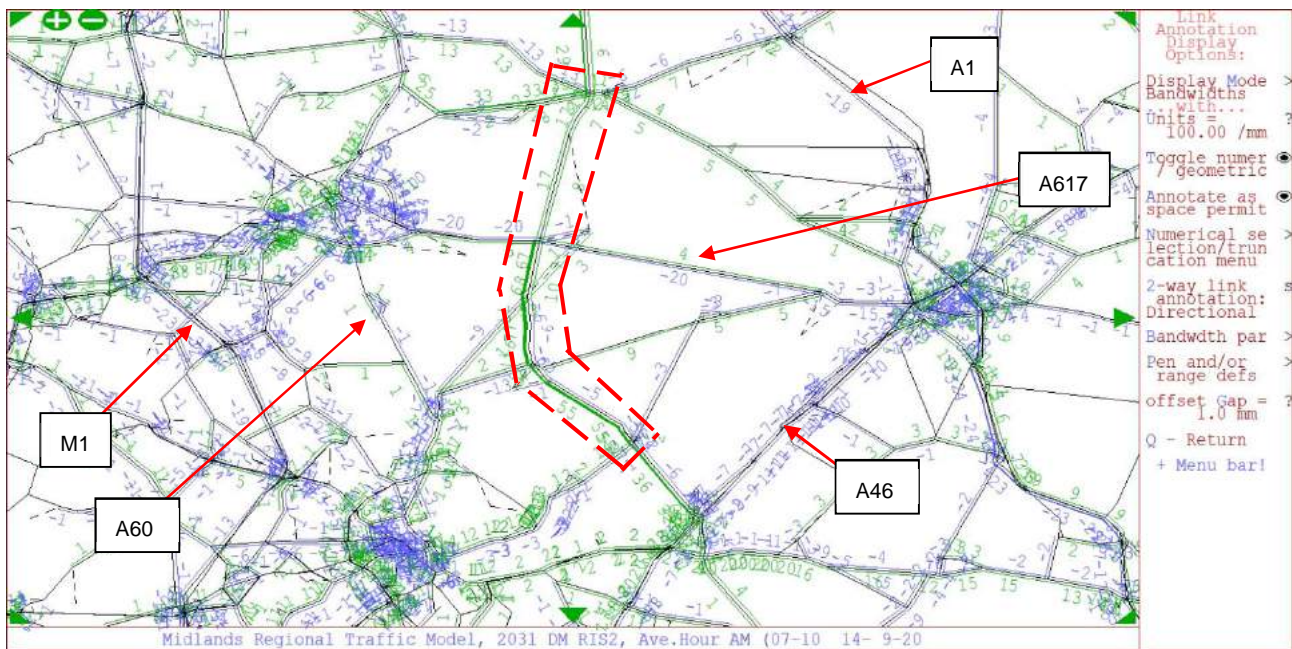
# Results

## Fixed Demand Modelling

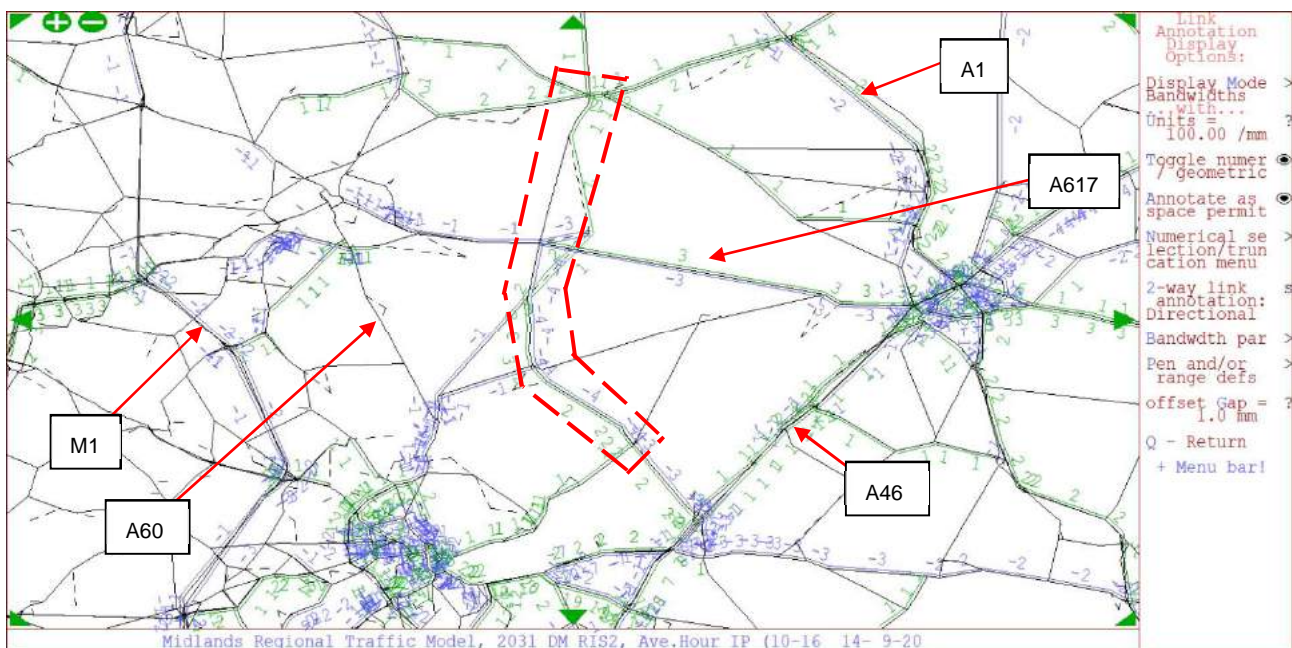
Results for the fixed assignment, for the year 2031, are shown below. Equivalent plots for the other forecast years (2026 and 2041) and other fixed demand tests, are included as appendices.

The following plots, from the SATURN model, show the demand flow difference between the do-minimum and Test 1 scenario. Green bandwidths indicate an increase, while blue indicate a decrease. The scheme corridor and other main routes are marked.

**Figure 29 - 2031 AM Demand Flow Difference (Test 1)**

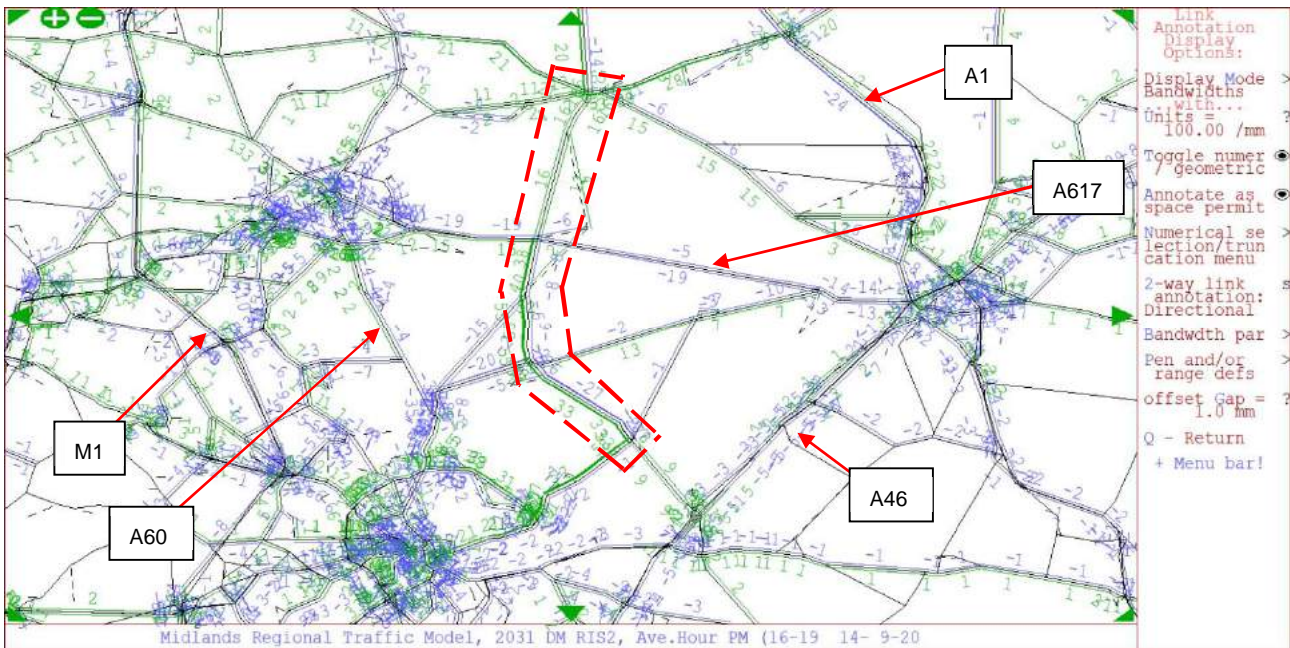


**Figure 30 - 2031 IP Demand Flow Difference (Test 1)**





**Figure 31 - 2031 PM Demand Flow Difference (Test 1)**

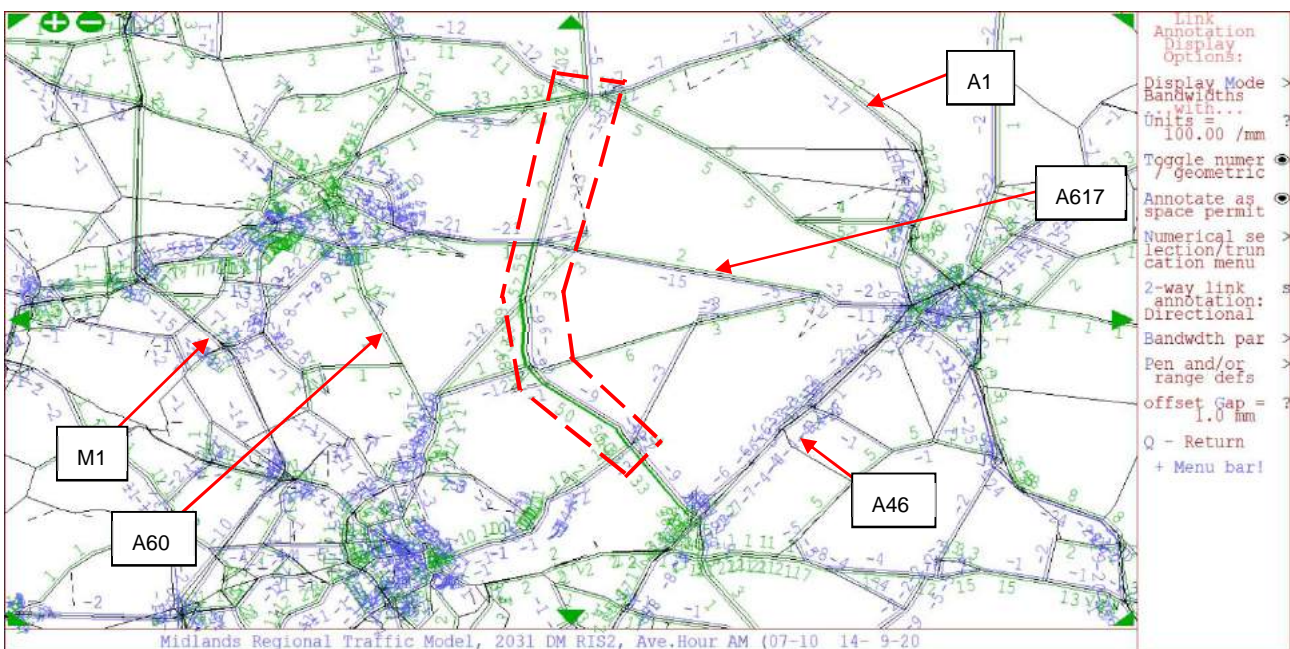


Changes are more prevalent northbound than southbound. This is particularly due to the changes at the Warren Hill junction. Northbound movements from the A6097 to the A616 must wait at two priority junctions given the current configuration. Given the layout is to be changed to a roundabout, there is now only one give way line for this movement.

Conversely, movements in the opposite southbound direction currently have no give way lines to stop at when moving from the A616 to the A6097 under the existing configuration. There is a give way line introduced for this movement under the proposal to change the junction into a conventional roundabout.

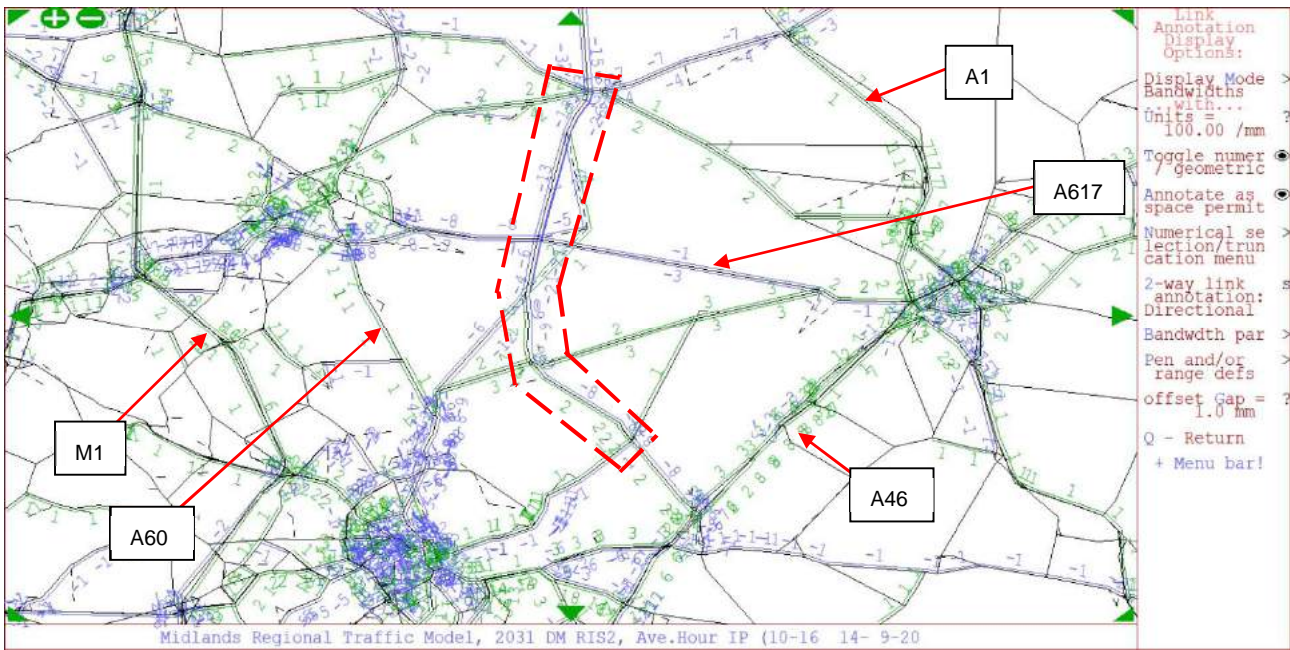
The following plots, from the SATURN model, show the demand flow difference between the do-minimum and Test 2 scenario. Green bandwidths indicate an increase, while blue indicate a decrease.

**Figure 32 - 2031 AM Demand Flow Difference (Test 2)**

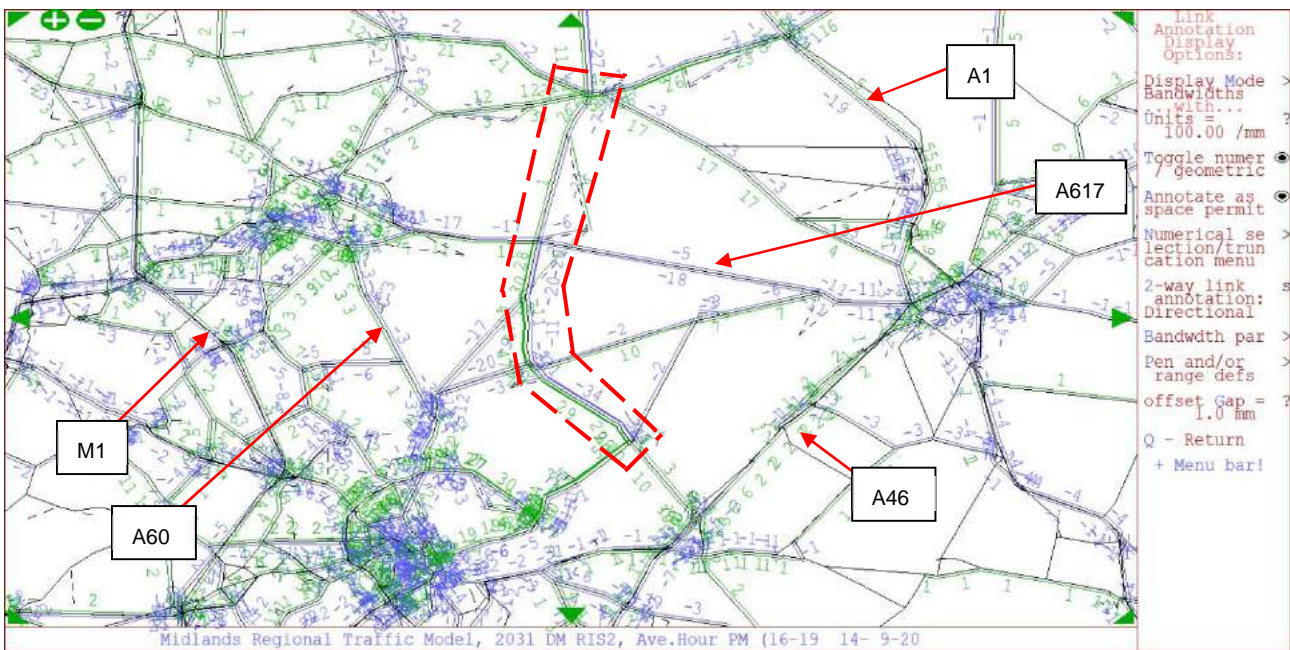




**Figure 33 - 2031 IP Demand Flow Difference (Test 2)**



**Figure 34 - 2031 PM Demand Flow Difference (Test 2)**

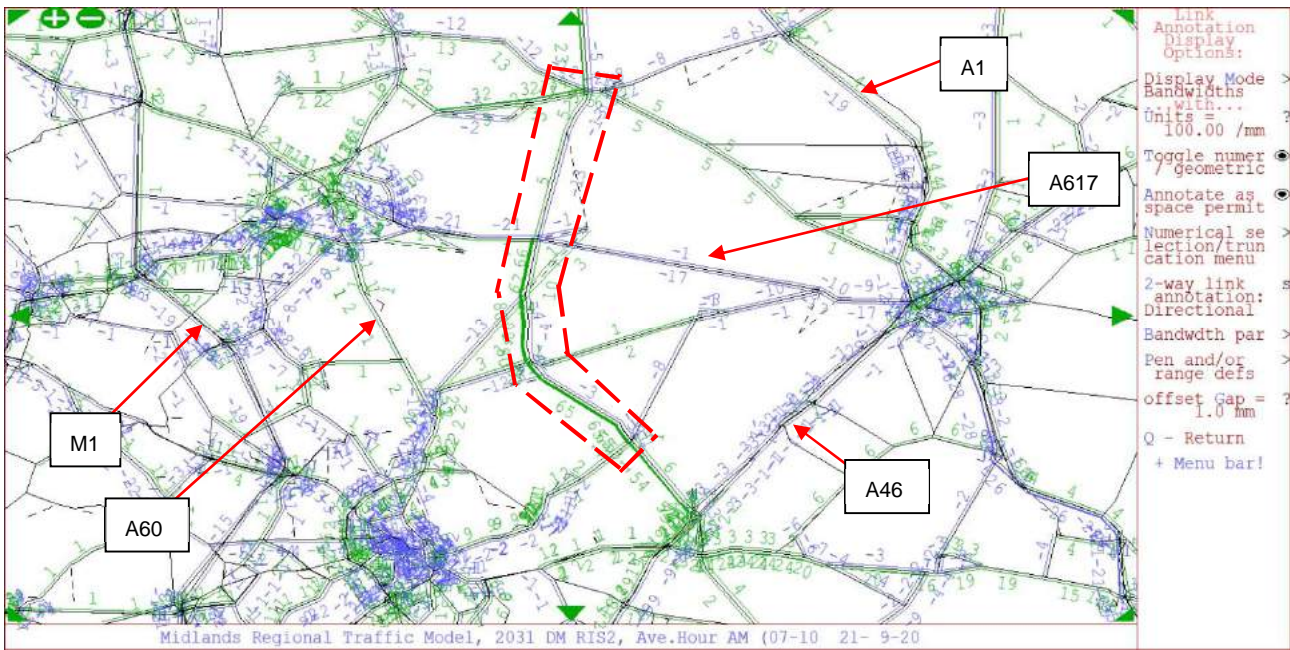


While impacts from Test 1 remain prevalent, the time penalties added to simulate extra delay at the junctions with Mickledale Lane and Deerdale Lane appear to make no material difference to flows on that section of the scheme corridor.

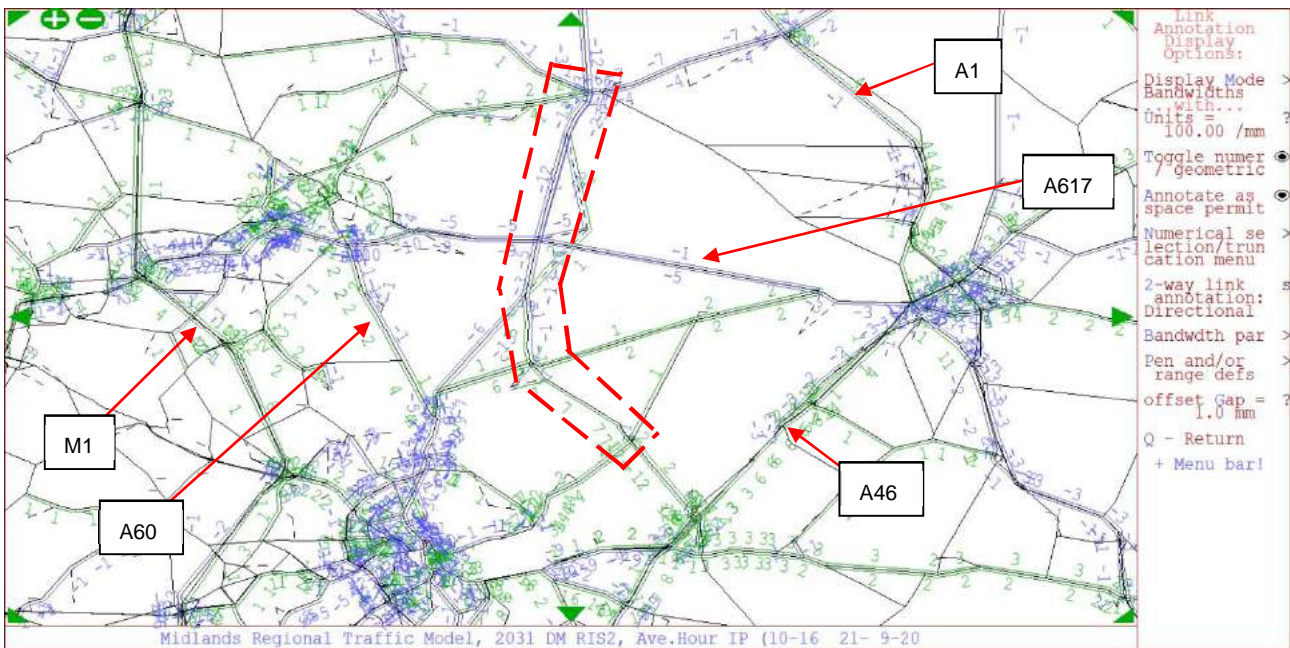
The following plots, from the SATURN model, show the demand flow difference between the do-minimum and Test 3 scenario. Green bandwidths indicate an increase, while blue indicate a decrease.



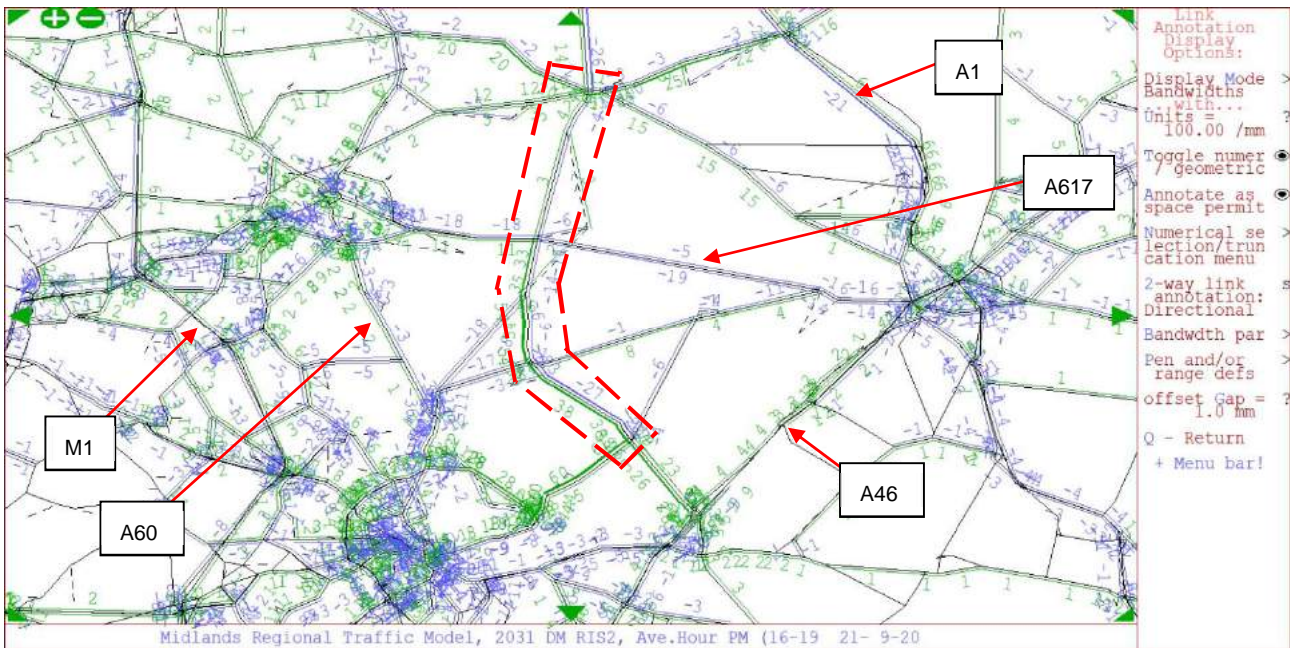
**Figure 35 - 2031 AM Demand Flow Difference (Test 3)**



**Figure 36 - 2031 IP Demand Flow Difference (Test 3)**



**Figure 37 - 2031 PM Demand Flow Difference (Test 3)**



In the AM peak, the largest differences along the scheme corridor are in the range of 60-70 equivalent passenger car units (PCUs) per hour. In the PM, they are in the region of 30-40 pcus/hr. In the inter-peak period, flow changes are less than 20 pcus/hr in all cases. These differences are not considered material.

Impacts from Test 1 and Test 2 still remain prevalent.

There is no clear rerouting on to the scheme corridor from parallel corridors such as the M1, A46/A1, or the A60.

There is a very small amount of re-routing for traffic leaving Nottingham, from the A616 to the A612, which is then joining the scheme corridor at Lowdham. This is due to two factors: firstly, that a give way line on the northbound A616 movement is introduced when implementing a roundabout at Warren Hill, and secondly, that amendments to the capacity on the A612 arm of the Lowdham roundabout cause a decrease in delay on that arm.

In order to give an impression of the scale of the changes, the tables shown below show the demand flow on six key links along the scheme corridor numerically for each fixed demand test variant, alongside the percentage change from the do-minimum, for the AM and PM peaks.

**Table 8 - 2031 AM Northbound key link demand flows (PCUs)**

Location		DM	Test 1	Diff to DM	Test 2	Diff to DM	Test 3	Diff to DM
A6097 Gunthorpe Bridge	NB	1,106	1,142	3%	1,139	3%	1,160	5%
A6097 North of Lowdham	NB	654	709	8%	704	8%	719	10%
A6097 Oxton Bypass	NB	481	559	16%	550	14%	561	17%
A614 White Post	NB	905	972	7%	960	6%	971	7%
A614 Bilsthorpe	NB	920	938	2%	922	0%	926	1%
A614 North of Ollerton	NB	585	614	5%	605	3%	609	4%

**Table 9 - 2031 AM Southbound key link demand flows (PCUs)**

Location		DM	Test 1	Diff to DM	Test 2	Diff to DM	Test 3	Diff to DM
A6097 Gunthorpe Bridge	SB	788	783	-1%	779	-1%	794	1%
A6097 North of Lowdham	SB	643	638	-1%	634	-1%	640	0%
A6097 Oxton Bypass	SB	534	528	-1%	525	-2%	531	-1%
A614 White Post	SB	1,041	1,048	1%	1,041	0%	1,049	1%
A614 Bilsthorpe	SB	845	852	1%	832	-2%	832	-2%
A614 North of Ollerton	SB	682	687	1%	676	-1%	677	-1%



**Table 10 - 2031 PM Northbound key link demand flows (PCUs)**

Location		DM	Test 1	Diff to DM	Test 2	Diff to DM	Test 3	Diff to DM
A6097 Gunthorpe Bridge	NB	1,138	1,147	1%	1,148	1%	1,164	2%
A6097 North of Lowdham	NB	703	736	5%	732	4%	741	5%
A6097 Oxtun Bypass	NB	474	528	12%	521	10%	527	11%
A614 White Post	NB	835	873	5%	863	3%	868	4%
A614 Bilsthorpe	NB	914	930	2%	916	0%	917	0%
A614 North of Ollerton	NB	532	552	4%	543	2%	546	3%

**Table 11 - 2031 PM Southbound key link demand flows (PCUs)**

Location		DM	Test 1	Diff to DM	Test 2	Diff to DM	Test 3	Diff to DM
A6097 Gunthorpe Bridge	SB	754	763	1%	757	0%	776	3%
A6097 North of Lowdham	SB	580	553	-5%	546	-6%	553	-5%
A6097 Oxtun Bypass	SB	454	448	-1%	443	-2%	448	-1%
A614 White Post	SB	952	943	-1%	932	-2%	937	-2%
A614 Bilsthorpe	SB	870	883	1%	859	-1%	863	-1%
A614 North of Ollerton	SB	656	642	-2%	628	-4%	630	-4%

The tables demonstrate that the scale of absolute changes noted on the difference plots are very small in the context of the total flows on the links. The largest changes from the do-minimum in percentage terms are on the northbound A6097 Oxtun Bypass – this is approaching the Warren Hill junction. It is expected that the most significant changes will happen here because of the change in priorities entailed by the improvements, explained above.

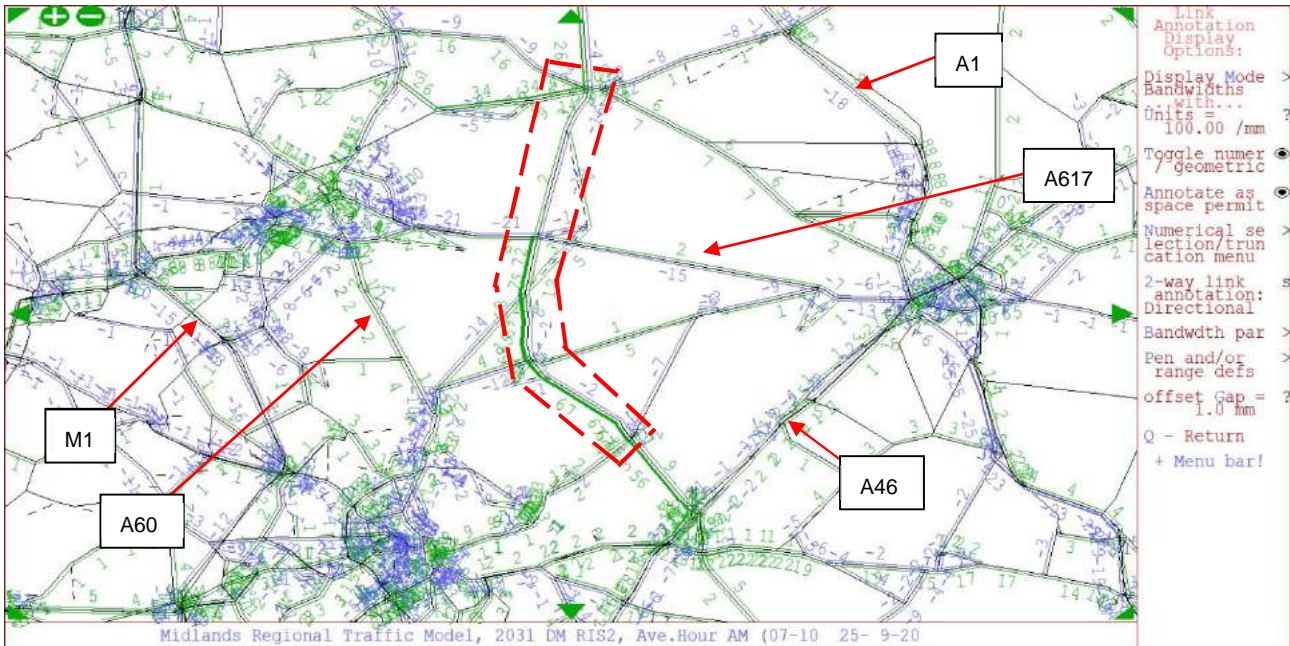
Outside of that, any changes in demand on these particular links are less than 7%. As noted in the plots, southbound changes are far smaller than those going northbound.

## Variable Demand Modelling

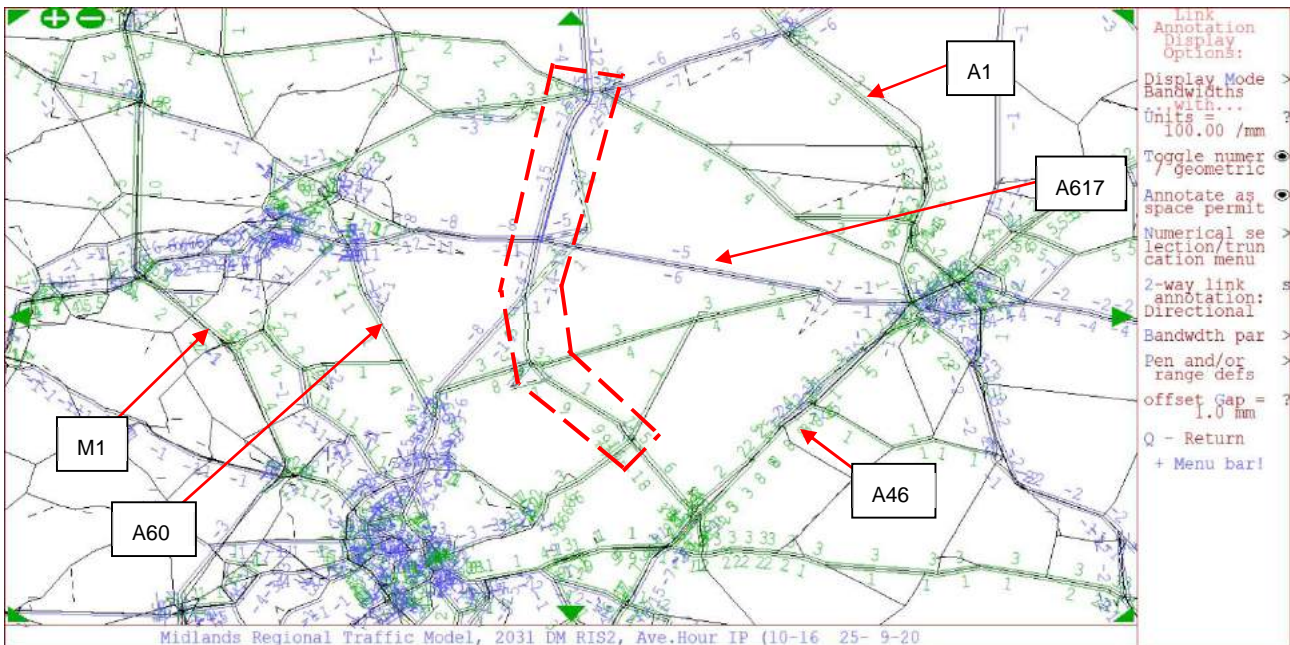
Another test was carried out using matrices that had been put through the variable demand modelling process, on the basis of the network used for fixed assignment Test 3.

Difference plots for the VDM test against the do-minimum test are shown below. The scheme corridor and other main routes are marked.

**Figure 38 - 2031 AM demand flow difference plot (VDM Test)**

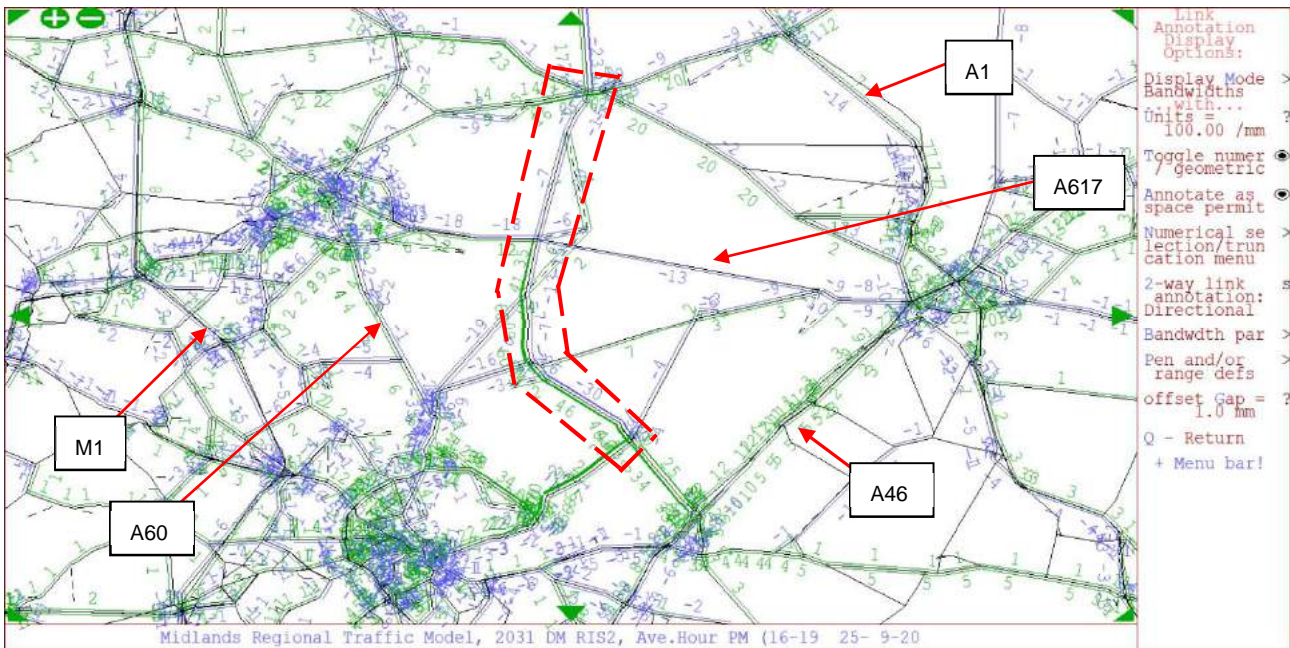


**Figure 39 - 2031 IP demand flow difference (VDM Test)**





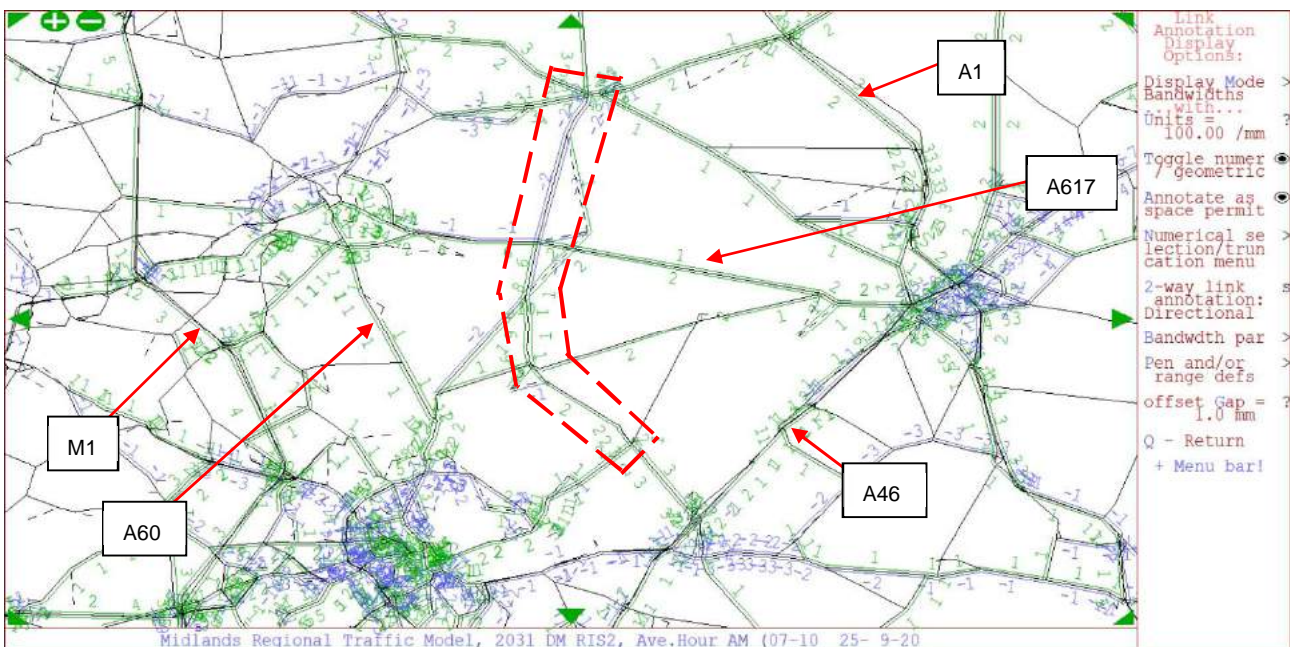
**Figure 40 - 2031 PM demand flow difference (VDM Test)**



These plots show a type and scale of difference which is very much comparable to the fixed demand assignment results.

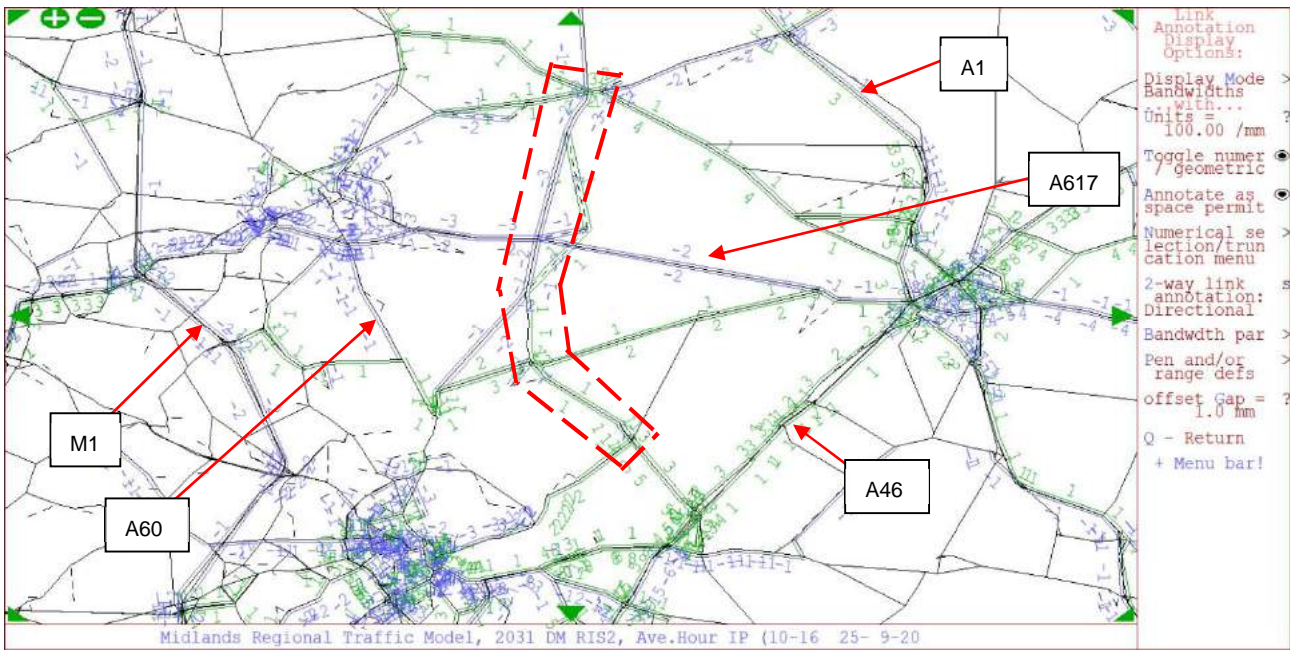
To demonstrate the impact of the VDM process, difference plots have been extracted to show the change between assignments using the pre (Test 3 fixed assignment) and post VDM matrices.

**Figure 41 – 2031 AM Pre vs Post VDM demand flow difference plot**

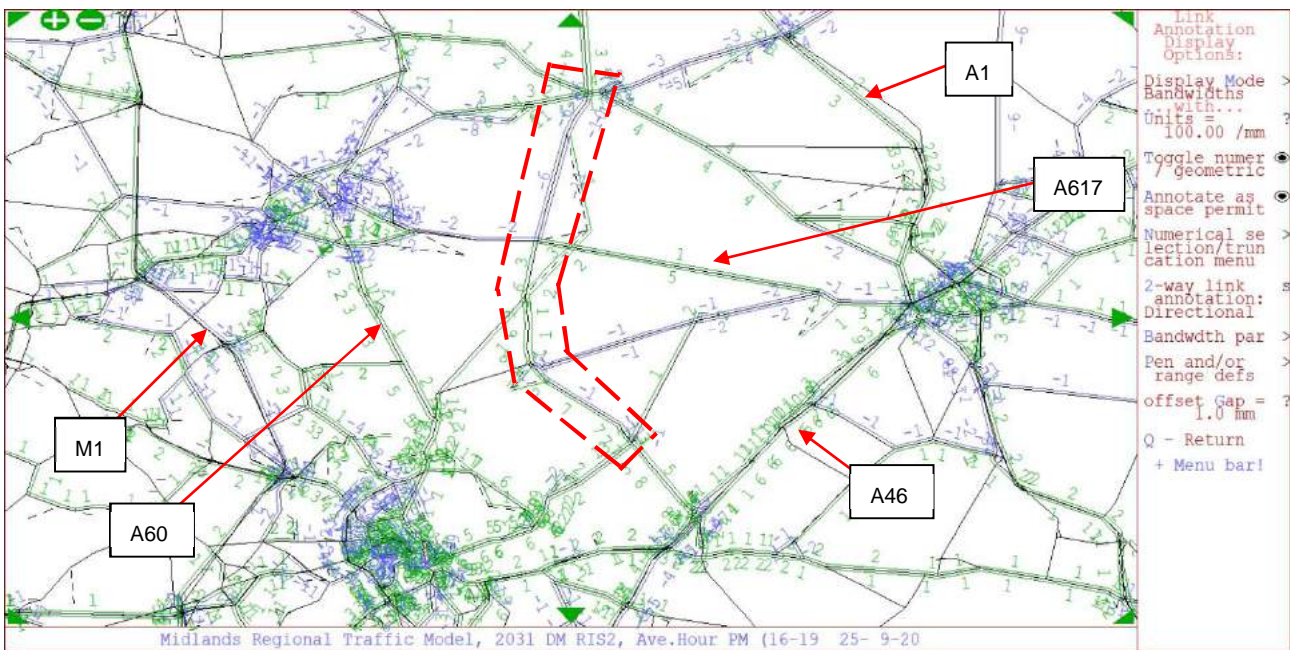




**Figure 42 - 2031 IP Pre vs Post VDM demand flow difference plot**



**Figure 43 - 2031 PM Pre vs Post VDM demand flow difference plot**



The plots demonstrate that there are no significant changes in the outcome of the modelling as a result of the VDM process. Changes in demand across the board are small and insignificant.

This is reflected further in the tables below showing a comparison of demand flow on six key links along the scheme corridor, against both the do-minimum and pre-VDM scenario (Test 3 fixed assignment).

**Table 12 - AM Northbound VDM demand flow comparison**

Location		DM	Test 3	VDM	Diff to DM	Diff to Test 3
A6097 Gunthorpe Bridge	NB	1,106	1,160	1,163	5%	0%
A6097 North of Lowdham	NB	654	719	721	10%	0%
A6097 Oxton Bypass	NB	481	561	570	18%	2%
A614 White Post	NB	905	971	977	8%	1%
A614 Bilsthorpe	NB	920	926	923	0%	0%
A614 North of Ollerton	NB	585	609	611	4%	0%

**Table 13 - AM Southbound VDM demand flow comparison**

Location		DM	Test 3	VDM	Diff to DM	Diff to Test 3
A6097 Gunthorpe Bridge	SB	788	794	797	1%	0%
A6097 North of Lowdham	SB	643	640	640	0%	0%
A6097 Oxton Bypass	SB	534	531	532	0%	0%
A614 White Post	SB	1,041	1,049	1,047	1%	0%
A614 Bilsthorpe	SB	845	832	829	-2%	0%
A614 North of Ollerton	SB	682	677	677	-1%	0%

**Table 14 - PM Northbound VDM demand flow comparison**

Location		DM	Test 3	VDM	Diff to DM	Diff to Test 3
A6097 Gunthorpe Bridge	NB	1,138	1,164	1,172	3%	1%
A6097 North of Lowdham	NB	703	741	748	6%	1%
A6097 Oxton Bypass	NB	474	527	534	13%	1%
A614 White Post	NB	835	868	871	4%	0%
A614 Bilsthorpe	NB	914	917	911	0%	-1%
A614 North of Ollerton	NB	532	546	550	3%	1%

**Table 15 - PM Southbound VDM demand flow comparison**

Location		DM	Test 3	VDM	Diff to DM	Diff to Test 3
A6097 Gunthorpe Bridge	SB	754	776	781	4%	1%
A6097 North of Lowdham	SB	580	553	552	-5%	0%
A6097 Oxton Bypass	SB	454	448	448	-1%	0%
A614 White Post	SB	952	937	937	-2%	0%
A614 Bilsthorpe	SB	870	863	851	-2%	-1%
A614 North of Ollerton	SB	656	630	633	-3%	1%

On these key links in the scheme corridor, the difference between the pre and post VDM assignments exceeds no more than 2%. When compared to the do-minimum, the scale of change is similar to the change in the fixed demand assignment tests.

To further demonstrate the small change that the VDM process has made, the table below shows the matrix totals for each time period, before and after the process.

**Table 16 - Pre and Post VDM 2031 matrix totals**

Time Period	Pre-VDM Matrix Total	Post-VDM Matrix Total	Change
AM	6,697,648	6,697,664	+16
IP	5,796,734	5,796,719	-15
PM	7,376,223	7,376,222	-1

As can be seen, there is minimal change in the trip matrices totals as a result of the VDM.

## Summary

- The MCHM explicitly contains three of the junctions that are part of the scheme.
- Fixed demand assignment testing of the improvements produces very little re-routing response along the scheme corridor, principally due to the lack of other routing options to cross the River Trent.
- Increases in demand along the scheme corridor arising from the fixed demand assignments are small, but most prominent on the A6097 Oxtun Bypass.
- VDM elicits minimal change in either the matrices or the assignment, when the pre and post VDM matrices are assigned and the model outputs compared.

## Conclusions

- A review of the MCHM model local validation was undertaken to determine the suitability of the MCHM for use in the strategic model testing. It was concluded that the MCHM was appropriate for use in the proposed sensitivity tests but does not contain sufficient detail along the A614/A6097 corridor to support scheme appraisal directly.
- The results of the reassignment and Variable Demand Model tests show no material impact along the A614/A6097 corridor. Notwithstanding, the largest impacts are in the AM peak. The largest differences along the scheme corridor are in the range of 60-70 equivalent passenger car units (PCUs) per hour. This equates to an average increase of approximately 1 pcu per minute.
- In the inter-peak period, flow changes are less than 20 pcus/hr in all cases. Given the inter-peak periods represent the majority of the day and represent the largest proportion of the annualisation process, used to derive AADT and AAWT flows.
- Given this the reassignment and VDM impacts are not considered material in either the economic or environmental appraisal. As such, the original fixed-trip assessment used is considered appropriate and additional work to rework the traffic forecasts and appraisal is not considered proportionate.

# APPENDIX A

## Modelled / Observed Counts Comparison

# AM Counts Comparison

Location	Direction	PCUs per peak hour			% Diff	AM GEH	AM Flow	AM Criteria
		AM Observed	AM Modelled	Diff				
Gunthorpe	Northwestbound	937	872	-65	-7%	2	MET	MET
Gunthorpe	Southeastbound	1,014	462	-553	-54%	20	NOT met	NOT met
South of A612	Northbound	788	872	85	11%	3	MET	MET
South of A612	Southbound	979	462	-517	-53%	19	NOT met	NOT met
North of A613	Southeastbound	707	435	-273	-39%	11	NOT met	NOT met
North of A613	Northwestbound	551	506	-45	-8%	2	MET	MET
A6097 South of Warren Head	Northbound	272	378	106	39%	6	NOT met	NOT met
A6097 South of Warren Head	Southbound	312	375	63	20%	3	MET	MET
A614 South of Warren Head	Northeastbound	524	334	-189	-36%	9	NOT met	NOT met
A614 South of Warren Head	Southwestbound	638	550	-87	-14%	4	MET	MET
North of Warren Head/South of A617	Southbound	867	740	-127	-15%	4	NOT met	MET
North of Warren Head/South of A617	Northbound	722	632	-90	-12%	3	MET	MET
North of A617	Southwestbound	759	646	-113	-15%	4	NOT met	MET
North of A617	Northeastbound	716	677	-40	-6%	1	MET	MET
A614 South of Ollerton	Northbound	707	677	-31	-4%	1	MET	MET
A614 South of Ollerton	Southbound	779	646	-133	-17%	5	NOT met	MET
A616 East of Ollerton	Southeastbound	692	1,048	357	52%	12	NOT met	NOT met
A616 East of Ollerton	Northwestbound	774	904	131	17%	5	MET	MET
A614 North of Ollerton	Southbound	393	496	103	26%	5	NOT met	MET
A614 North of Ollerton	Northbound	434	458	24	6%	1	MET	MET
A616 Northwest of Ollerton	Southeastbound	286	326	39	14%	2	MET	MET
A616 Northwest of Ollerton	Northwestbound	237	258	22	9%	1	MET	MET
A6075 Southwest of Ollerton	Eastbound	375	523	148	40%	7	NOT met	NOT met
A6075 Southwest of Ollerton	Westbound	287	527	240	84%	12	NOT met	NOT met
A60 South of A617	Northbound	663	427	-236	-36%	10	NOT met	NOT met
A60 South of A617	Southbound	1,042	672	-369	-35%	13	NOT met	NOT met
A60 North of A617	Southbound	534	1,311	777	146%	26	NOT met	NOT met
A60 North of A617	Northbound	554	1,258	703	127%	23	NOT met	NOT met
A60 North of Mansfield	Northbound	298	868	570	191%	24	NOT met	NOT met

A60 North of Mansfield	Southbound	594	1,509	915	154%	28	NOT met	NOT met
A60 South of A616	Northbound	253	367	114	45%	6	NOT met	NOT met
A60 South of A616	Southbound	207	370	163	79%	10	NOT met	NOT met
A57 Worksop/A1	Eastbound	542	1,083	541	100%	19	NOT met	NOT met
A57 Worksop/A1	Westbound	611	1,023	412	67%	14	NOT met	NOT met
East of A614	Southeastbound	451	349	-103	-23%	5	NOT met	NOT met
East of A614	Northwestbound	373	330	-44	-12%	2	MET	MET
West of A614	Westbound	727	804	77	11%	3	MET	MET
West of A614	Eastbound	691	838	146	21%	5	NOT met	NOT met
A1 Upper Morton	Northbound	1,613	1,577	-36	-2%	1	MET	MET
A1 Upper Morton	Southbound	1,694	1,633	-60	-4%	1	MET	MET
A1 Sutton on Trent	Northbound	1,496	1,434	-63	-4%	2	MET	MET
A1 Sutton on Trent	Southbound	1,712	1,612	-99	-6%	2	MET	MET
A46 Newark on Trent/East Bridgeford	Northbound	1,233	1,005	-228	-18%	7	NOT met	NOT met
A46 Newark on Trent/East Bridgeford	Southbound	1,406	1,335	-71	-5%	2	MET	MET
A46 Bingham/East Bridgeford	Northbound	1,258	1,269	11	1%	0	MET	MET
A46 Bingham/East Bridgeford	Southbound	1,406	1,335	-71	-5%	2	MET	MET
South of J26	Southbound	4,076	4,534	458	11%	7	NOT met	NOT met
South of J26	Northbound	3,319	4,084	765	23%	13	NOT met	NOT met
North of J26	Southbound	3,960	4,359	399	10%	6	MET	MET
North of J26	Northbound	3,607	3,827	220	6%	4	MET	MET
North of J27	Northbound	3,874	3,781	-93	-2%	2	MET	MET
North of J27	Southbound	4,529	3,983	-545	-12%	8	NOT met	NOT met
South of J27	Southbound	4,674	4,359	-315	-7%	5	MET	MET
South of J27	Northbound	3,353	3,827	474	14%	8	NOT met	NOT met
South of J28	Northbound	4,138	3,781	-357	-9%	6	MET	MET
South of J28	Southbound	3,954	3,983	30	1%	0	MET	MET
North of J28	Northbound	3,494	3,688	195	6%	3	MET	MET
North of J28	Southbound	4,027	3,764	-264	-7%	4	MET	MET



## IP Counts Comparison

Location	Direction	PCUs per peak hour			% Diff	IP GEH	IP Flow	IP Criteria
		IP Observed	IP Modelled	Diff				
Gunthorpe	Northwestbound	636	516	-119	-19%	5	NOT met	MET
Gunthorpe	Southeastbound	589	315	-274	-47%	13	NOT met	NOT met
South of A612	Northbound	667	516	-151	-23%	6	NOT met	NOT met
South of A612	Southbound	641	315	-326	-51%	15	NOT met	NOT met
North of A613	Southeastbound	447	302	-145	-32%	8	NOT met	NOT met
North of A613	Northwestbound	462	375	-86	-19%	4	MET	MET
A6097 South of Warren Head	Northbound	200	240	40	20%	3	MET	MET
A6097 South of Warren Head	Southbound	189	275	86	46%	6	MET	MET
A614 South of Warren Head	Northeastbound	353	265	-88	-25%	5	MET	MET
A614 South of Warren Head	Southwestbound	370	270	-100	-27%	6	MET	MET
North of Warren Head/South of A617	Southbound	543	475	-67	-12%	3	MET	MET
North of Warren Head/South of A617	Northbound	527	429	-98	-19%	5	MET	MET
North of A617	Southwestbound	570	447	-123	-22%	5	NOT met	NOT met
North of A617	Northeastbound	584	526	-58	-10%	2	MET	MET
A614 South of Ollerton	Northbound	573	526	-46	-8%	2	MET	MET
A614 South of Ollerton	Southbound	561	447	-115	-20%	5	NOT met	NOT met
A616 East of Ollerton	Southeastbound	693	739	46	7%	2	MET	MET
A616 East of Ollerton	Northwestbound	629	819	190	30%	7	NOT met	NOT met
A614 North of Ollerton	Southbound	324	464	140	43%	7	NOT met	NOT met
A614 North of Ollerton	Northbound	310	411	101	33%	5	NOT met	NOT met
A616 Northwest of Ollerton	Southeastbound	209	145	-64	-31%	5	MET	MET
A616 Northwest of Ollerton	Northwestbound	220	256	36	16%	2	MET	MET
A6075 Southwest of Ollerton	Eastbound	293	435	143	49%	7	NOT met	NOT met
A6075 Southwest of Ollerton	Westbound	299	534	235	79%	12	NOT met	NOT met
A60 South of A617	Northbound	668	401	-268	-40%	12	NOT met	NOT met
A60 South of A617	Southbound	681	339	-342	-50%	15	NOT met	NOT met
A60 North of A617	Southbound	615	1053	438	71%	15	NOT met	NOT met
A60 North of A617	Northbound	720	987	268	37%	9	NOT met	NOT met
A60 North of Mansfield	Northbound	568	945	377	66%	14	NOT met	NOT met

A60 North of Mansfield	Southbound	640	882	242	38%	9	NOT met	NOT met
A60 South of A616	Northbound	213	228	15	7%	1	MET	MET
A60 South of A616	Southbound	207	294	87	42%	5	MET	MET
A57 Worksop/A1	Eastbound	444	824	380	85%	15	NOT met	NOT met
A57 Worksop/A1	Westbound	450	820	370	82%	15	NOT met	NOT met
East of A614	Southeastbound	336	276	-60	-18%	3	MET	MET
East of A614	Northwestbound	358	274	-84	-24%	5	MET	MET
West of A614	Westbound	590	581	-9	-2%	0	MET	MET
West of A614	Eastbound	593	723	130	22%	5	NOT met	NOT met
A1 Upper Morton	Northbound	1,645	1697	52	3%	1	MET	MET
A1 Upper Morton	Southbound	1,531	1556	25	2%	1	MET	MET
A1 Sutton on Trent	Northbound	1,663	1617	-46	-3%	1	MET	MET
A1 Sutton on Trent	Southbound	1,530	1437	-93	-6%	2	MET	MET
A46 Newark on Trent/East Bridgeford	Northbound	1,029	859	-170	-17%	6	NOT met	NOT met
A46 Newark on Trent/East Bridgeford	Southbound	963	976	13	1%	0	MET	MET
A46 Bingham/East Bridgeford	Northbound	1,128	1,024	-104	-9%	3	MET	MET
A46 Bingham/East Bridgeford	Southbound	963	976	13	1%	0	MET	MET
South of J26	Southbound	3,269	3,560	291	9%	5	MET	MET
South of J26	Northbound	3,150	3,853	703	22%	12	NOT met	NOT met
North of J26	Southbound	3,003	3,535	532	18%	9	NOT met	NOT met
North of J26	Northbound	3,460	3,768	308	9%	5	MET	MET
North of J27	Northbound	3,759	3,635	-124	-3%	2	MET	MET
North of J27	Southbound	3,508	3,401	-106	-3%	2	MET	MET
South of J27	Southbound	3,604	3,535	-68	-2%	1	MET	MET
South of J27	Northbound	3,410	3,768	358	11%	6	MET	MET
South of J28	Northbound	4,044	3,635	-409	-10%	7	NOT met	NOT met
South of J28	Southbound	3,266	3,401	136	4%	2	MET	MET
North of J28	Northbound	3,687	3,649	-38	-1%	1	MET	MET
North of J28	Southbound	3,561	3,474	-88	-2%	1	MET	MET

# PM Count Comparison

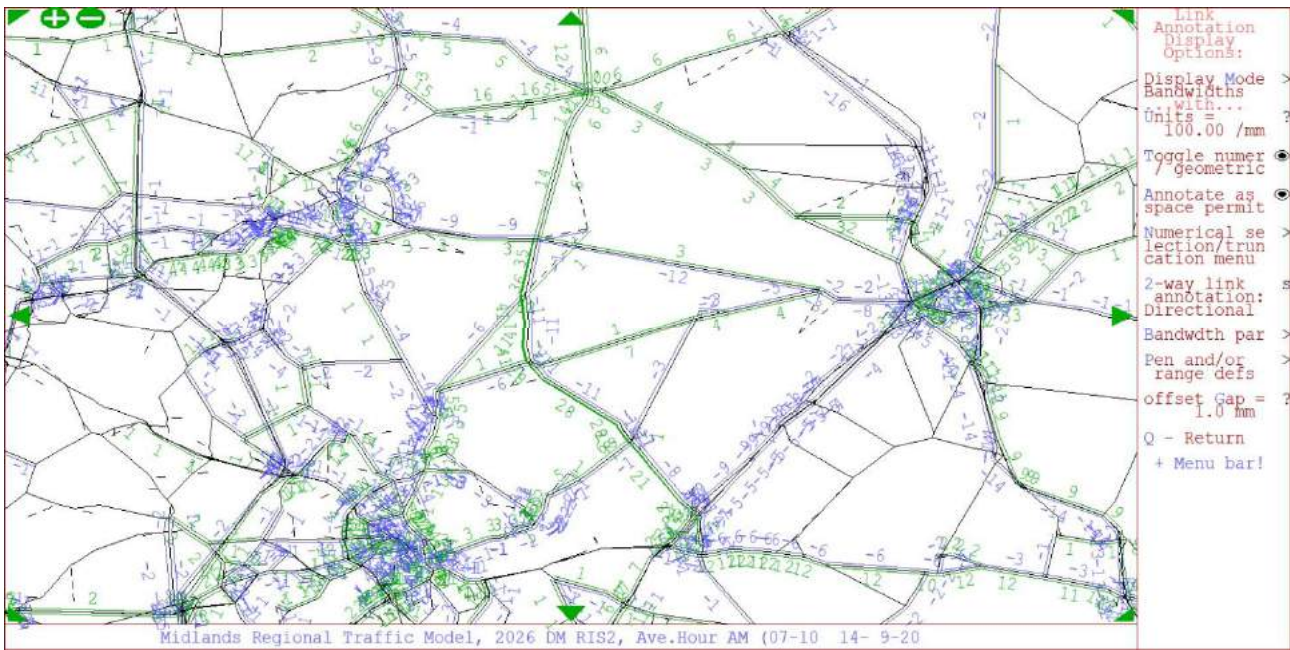
Location	Direction	PCUs per peak hour			% Diff	PM GEH	PM Flow	PM Criteria
		PM Observed	PM Modelled	Diff				
Gunthorpe	Northwestbound	1,140	792	-348	-31%	11	NOT met	NOT met
Gunthorpe	Southeastbound	884	539	-344	-39%	13	NOT met	NOT met
South of A612	Northbound	1,126	792	-333	-30%	11	NOT met	NOT met
South of A612	Southbound	919	539	-380	-41%	14	NOT met	NOT met
North of A613	Southeastbound	639	419	-220	-34%	10	NOT met	NOT met
North of A613	Northwestbound	802	531	-271	-34%	10	NOT met	NOT met
A6097 South of Warren Head	Northbound	321	360	38	12%	2	MET	MET
A6097 South of Warren Head	Southbound	252	322	70	28%	4	MET	MET
A614 South of Warren Head	Northeastbound	657	375	-282	-43%	12	NOT met	NOT met
A614 South of Warren Head	Southwestbound	544	453	-91	-17%	4	MET	MET
North of Warren Head/South of A617	Southbound	782	664	-118	-15%	4	NOT met	MET
North of Warren Head/South of A617	Northbound	861	599	-262	-30%	10	NOT met	NOT met
North of A617	Southwestbound	820	689	-131	-16%	5	NOT met	MET
North of A617	Northeastbound	844	684	-161	-19%	6	NOT met	NOT met
A614 South of Ollerton	Northbound	812	684	-128	-16%	5	NOT met	MET
A614 South of Ollerton	Southbound	796	689	-108	-14%	4	NOT met	MET
A616 East of Ollerton	Southeastbound	876	869	-6	-1%	0	MET	MET
A616 East of Ollerton	Northwestbound	657	1,062	405	62%	14	NOT met	NOT met
A614 North of Ollerton	Southbound	433	523	91	21%	4	MET	MET
A614 North of Ollerton	Northbound	350	471	120	34%	6	NOT met	NOT met
A616 Northwest of Ollerton	Southeastbound	246	195	-51	-21%	3	MET	MET
A616 Northwest of Ollerton	Northwestbound	284	327	43	15%	2	MET	MET
A6075 Southwest of Ollerton	Eastbound	329	454	126	38%	6	NOT met	NOT met
A6075 Southwest of Ollerton	Westbound	391	566	176	45%	8	NOT met	NOT met
A60 South of A617	Northbound	911	462	-449	-49%	17	NOT met	NOT met
A60 South of A617	Southbound	981	570	-410	-42%	15	NOT met	NOT met
A60 North of A617	Southbound	726	1,315	589	81%	18	NOT met	NOT met
A60 North of A617	Northbound	816	1,293	477	59%	15	NOT met	NOT met
A60 North of Mansfield	Northbound	670	1,554	885	132%	27	NOT met	NOT met
A60 North of Mansfield	Southbound	592	1,026	434	73%	15	NOT met	NOT met
A60 South of A616	Northbound	267	295	28	11%	2	MET	MET
A60 South of A616	Southbound	317	431	114	36%	6	NOT met	NOT met
A57 Worksop/A1	Eastbound	562	1,003	440	78%	16	NOT met	NOT met

A57 Worksop/A1	Westbound	564	963	400	71%	14	NOT met	NOT met
East of A614	Southeastbound	375	249	-127	-34%	7	NOT met	NOT met
East of A614	Northwestbound	426	302	-124	-29%	6	NOT met	NOT met
West of A614	Westbound	777	793	16	2%	1	MET	MET
West of A614	Eastbound	751	824	73	10%	3	MET	MET
A1 Upper Morton	Northbound	1,492	1,831	339	23%	8	NOT met	NOT met
A1 Upper Morton	Southbound	1,316	1,692	375	29%	10	NOT met	NOT met
A1 Sutton on Trent	Northbound	1,557	1,894	337	22%	8	NOT met	NOT met
A1 Sutton on Trent	Southbound	1,433	1,675	243	17%	6	MET	MET
A46 Newark on Trent/East Bridgeford	Northbound	1,135	1,173	38	3%	1	MET	MET
A46 Newark on Trent/East Bridgeford	Southbound	958	1,220	262	27%	8	NOT met	NOT met
A46 Bingham/East Bridgeford	Northbound	1,281	1,465	184	14%	5	MET	MET
A46 Bingham/East Bridgeford	Southbound	958	1,220	262	27%	8	NOT met	NOT met
South of J26	Southbound	3,092	3,864	772	25%	13	NOT met	NOT met
South of J26	Northbound	3,230	4,881	1651	51%	26	NOT met	NOT met
North of J26	Southbound	2,897	4,056	1159	40%	20	NOT met	NOT met
North of J26	Northbound	3,475	4,518	1042	30%	16	NOT met	NOT met
North of J27	Northbound	3,671	4,261	590	16%	9	NOT met	NOT met
North of J27	Southbound	3,239	3,909	670	21%	11	NOT met	NOT met
South of J27	Southbound	3,365	4,056	691	21%	11	NOT met	NOT met
South of J27	Northbound	3,359	4,518	1159	35%	18	NOT met	NOT met
South of J28	Northbound	4,093	4,261	168	4%	3	MET	MET
South of J28	Southbound	2,877	3,909	1032	36%	18	NOT met	NOT met
North of J28	Northbound	3,650	4,015	365	10%	6	MET	MET
North of J28	Southbound	3,168	3,905	737	23%	12	NOT met	NOT met

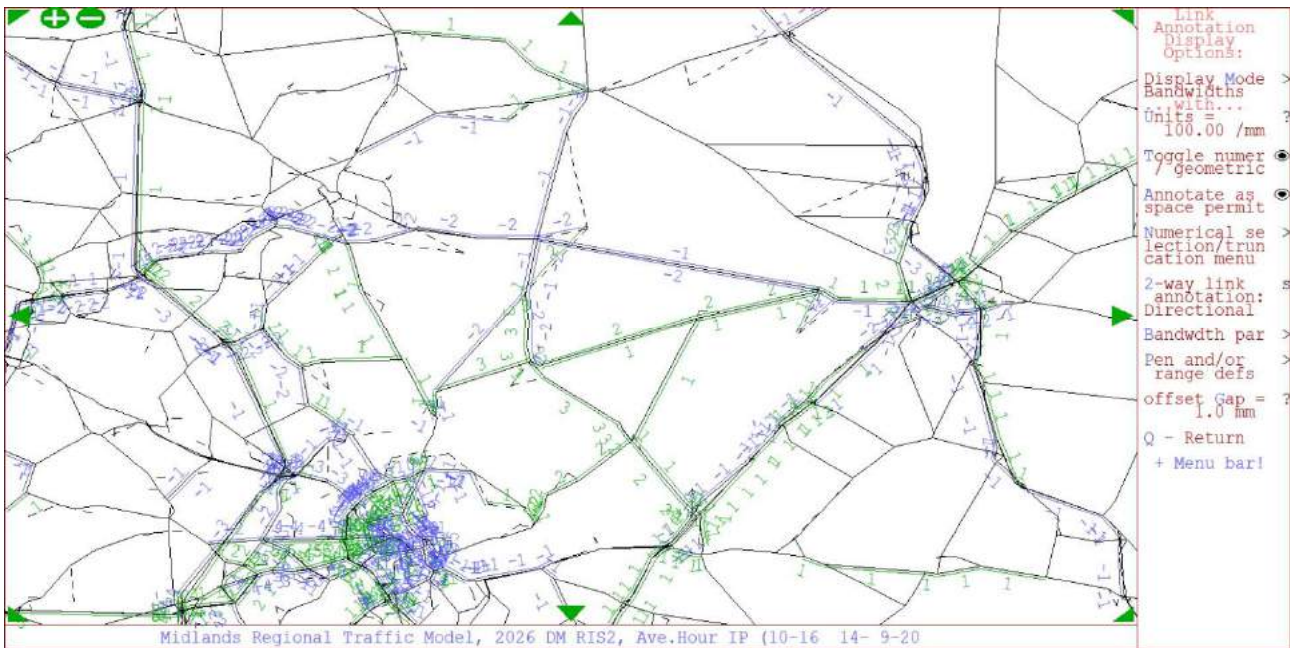
# APPENDIX B

## Demand Flow Difference Plots

**Figure 44 - 2026 AM Demand Flow Difference (Test 1)**

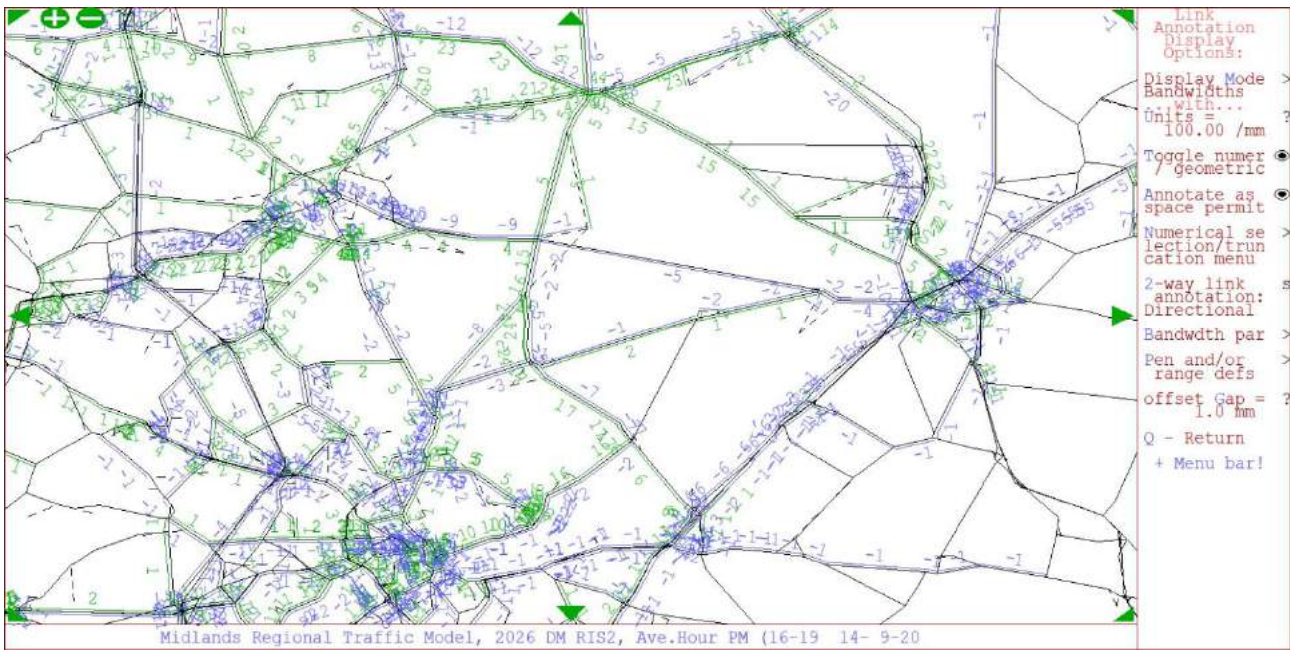


**Figure 45 - 2026 IP Demand Flow Difference (Test 1)**

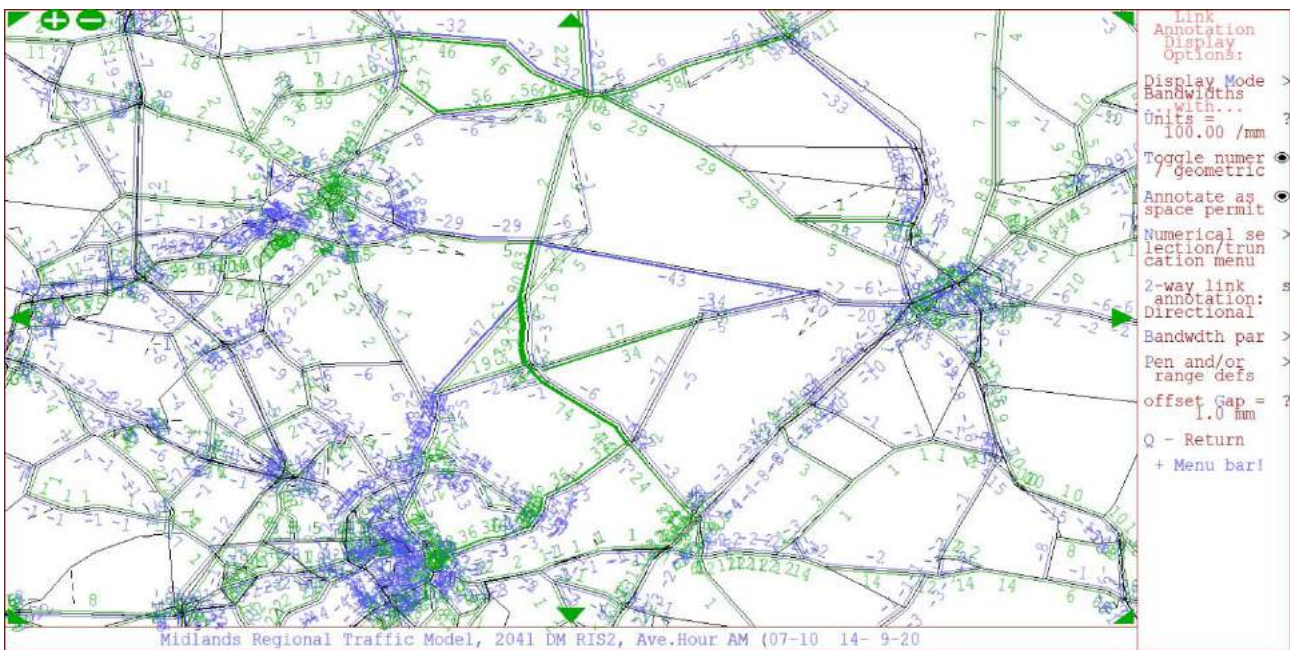




**Figure 46 - 2026 PM Demand Flow Difference (Test 1)**

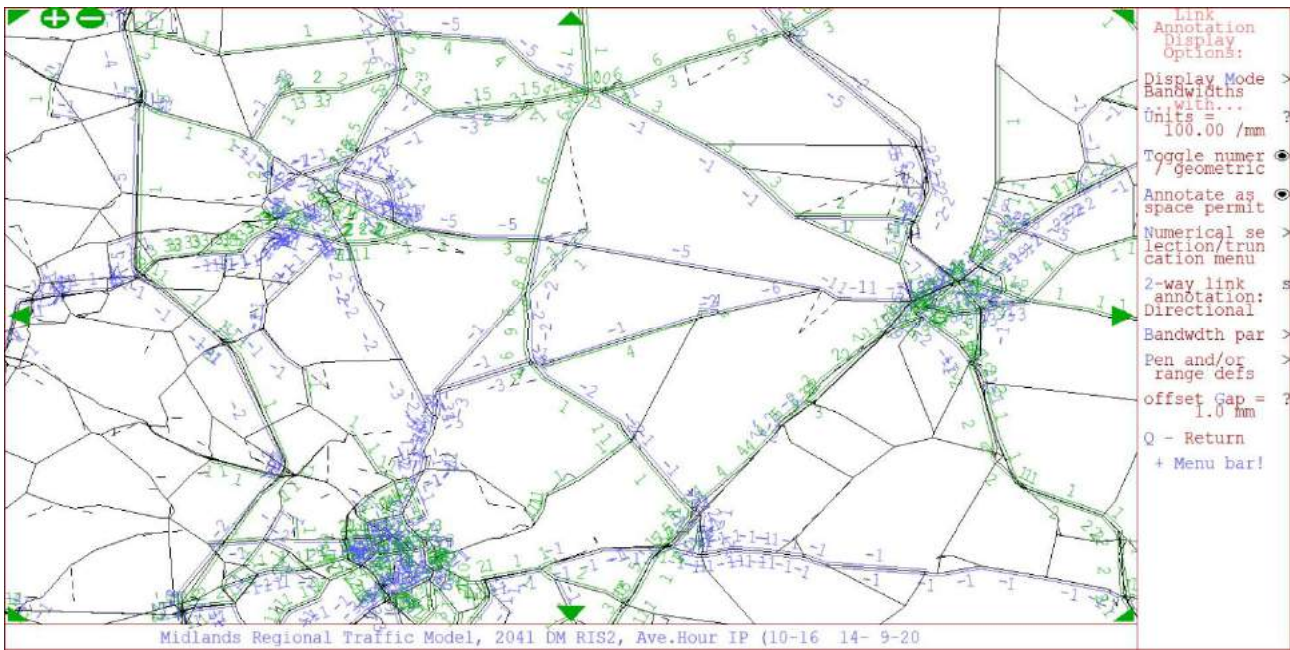


**Figure 47 - 2041 AM Demand Flow Difference (Test 1)**

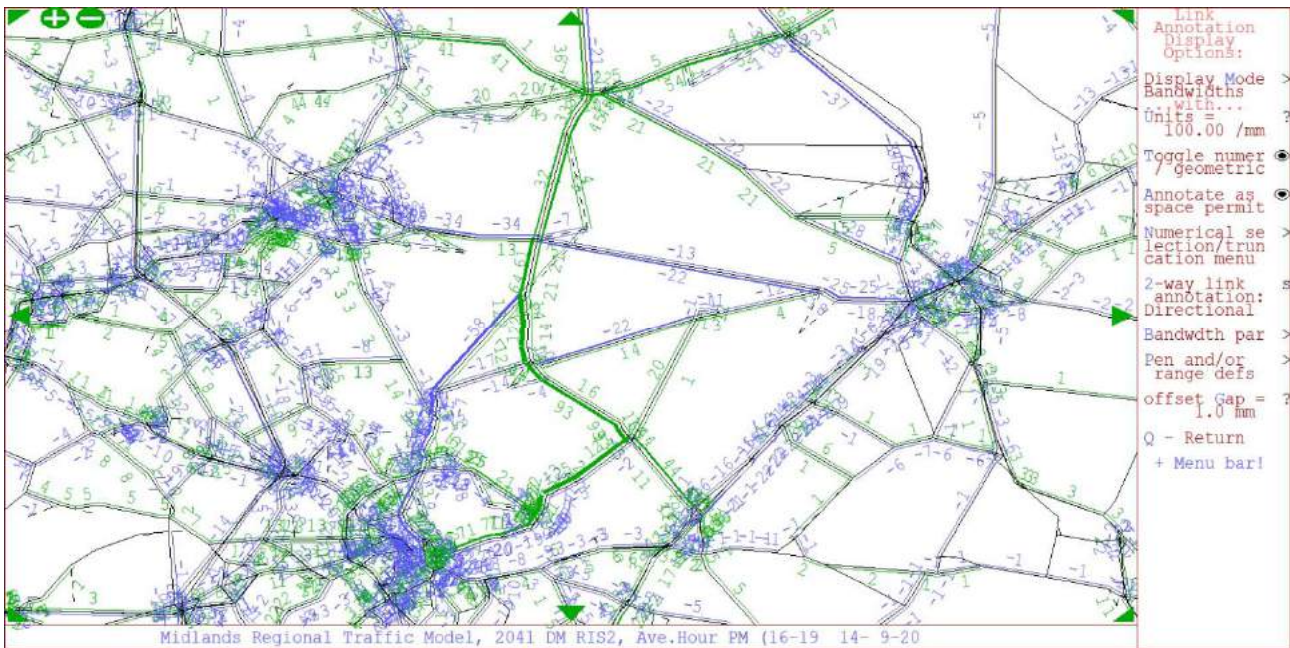




**Figure 48 - 2041 IP Demand Flow Difference (Test 1)**

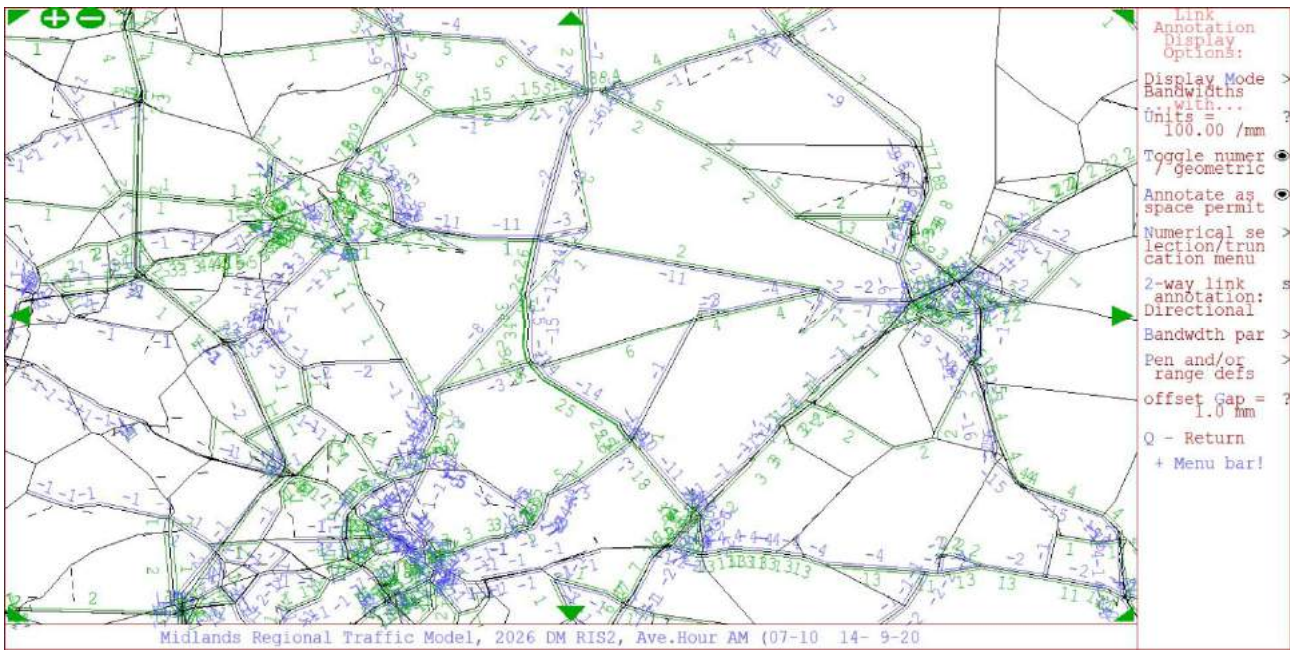


**Figure 49 - 2041 PM Demand Flow Difference (Test 1)**

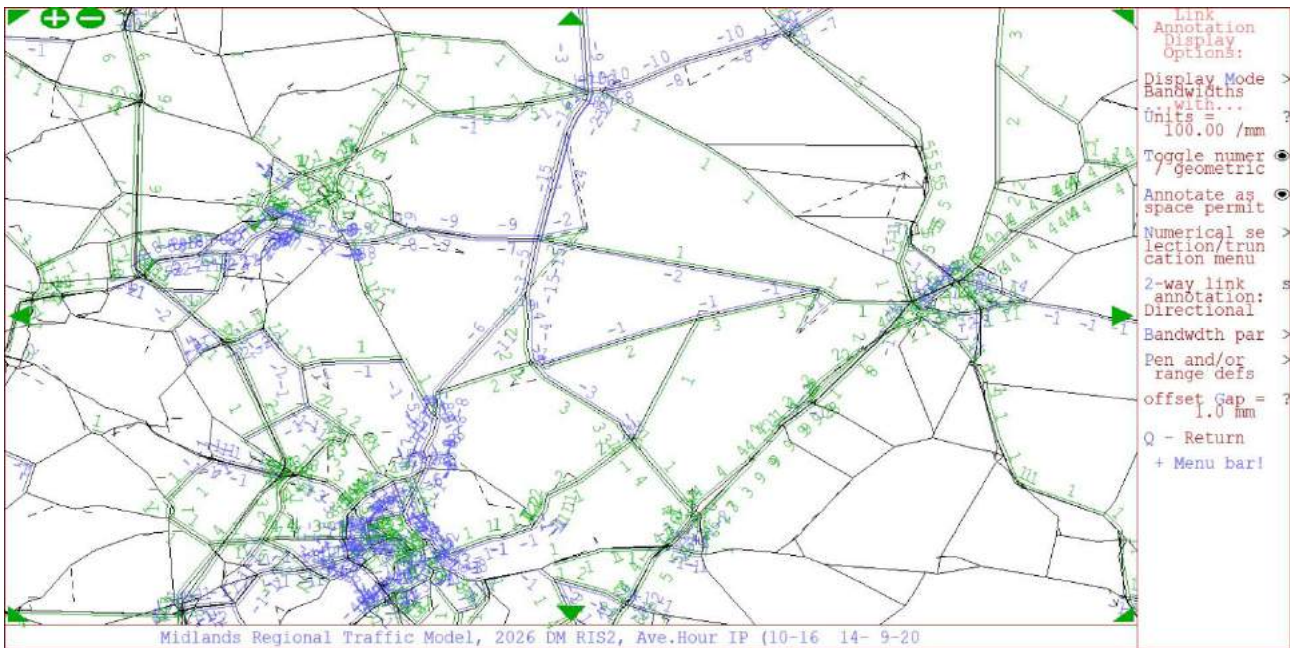




**Figure 50 - 2026 AM Demand Difference (Test 2)**

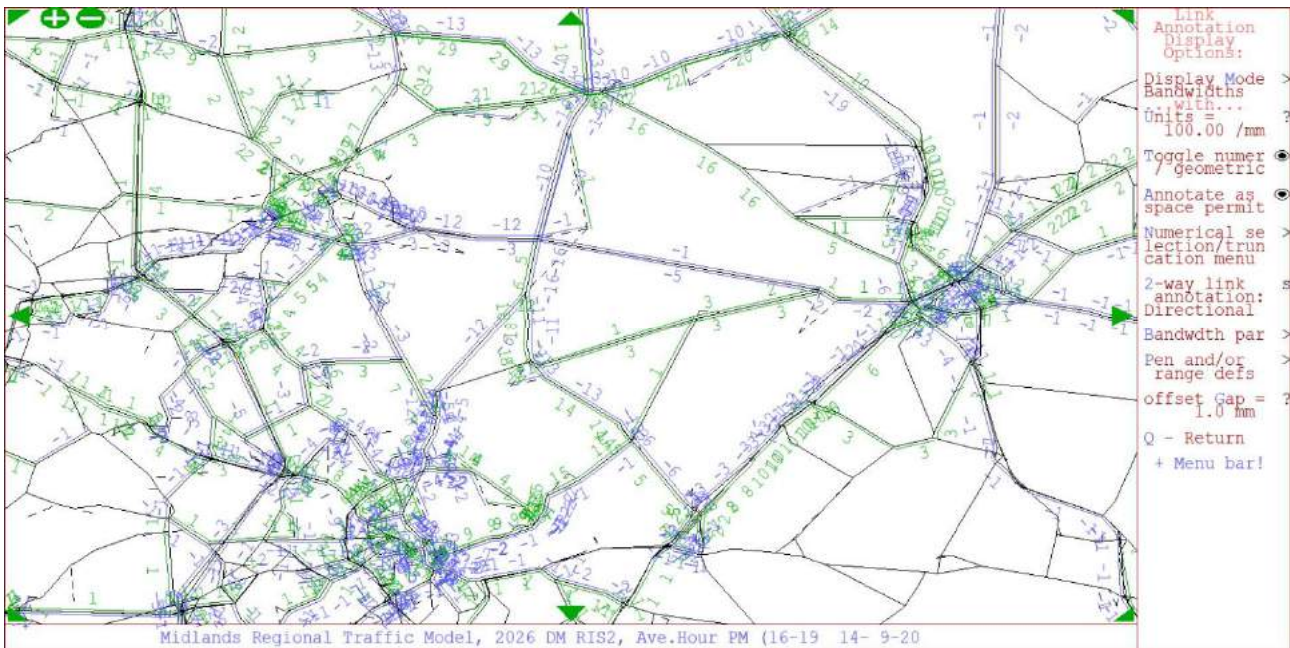


**Figure 51 - 2026 IP Demand Flow Difference (Test 2)**

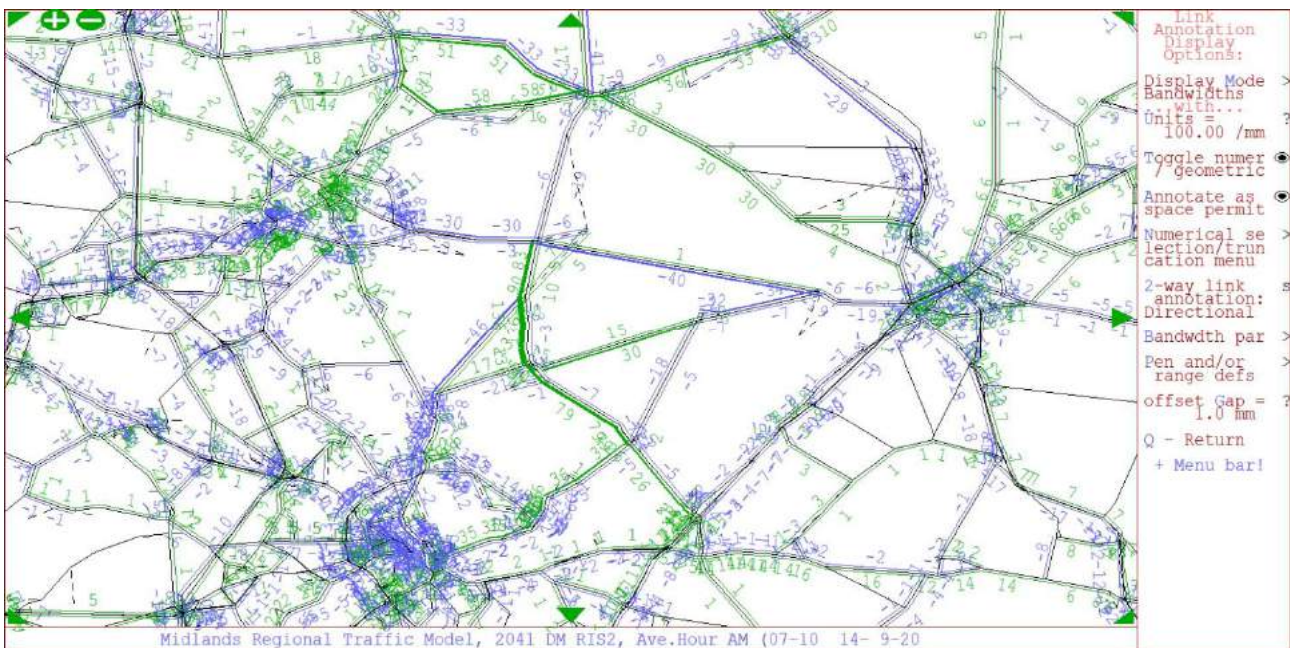




**Figure 52 - 2026 PM Demand Flow Difference (Test 2)**

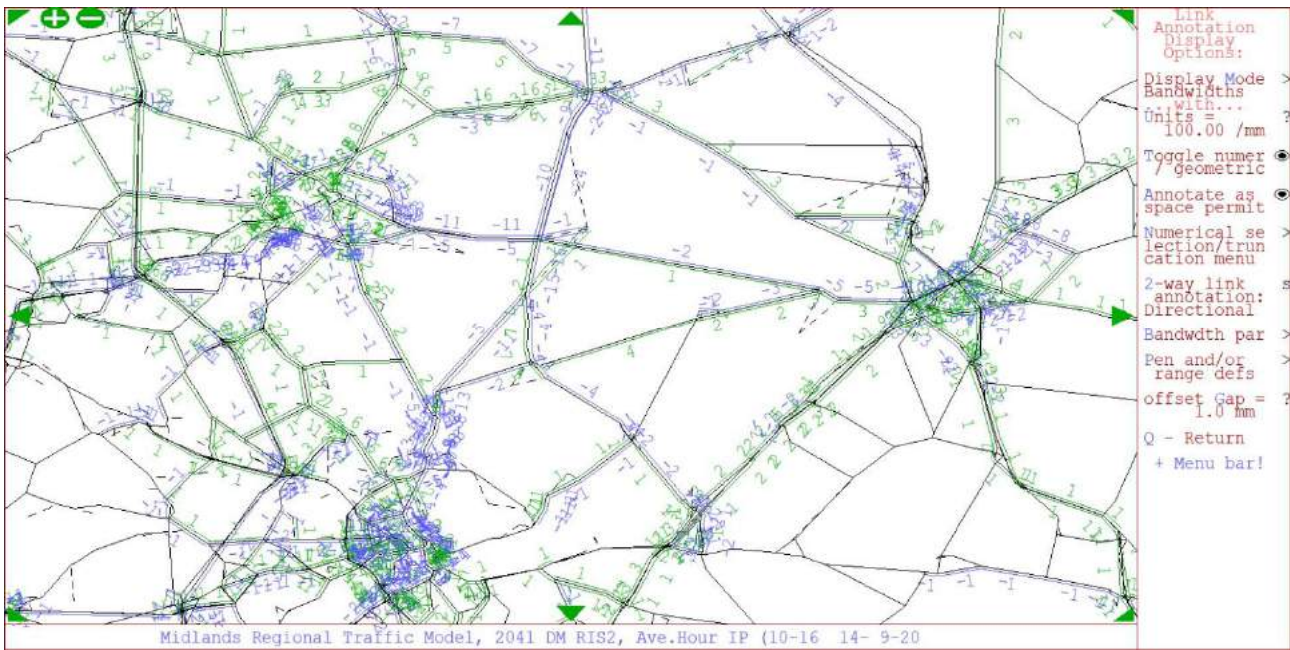


**Figure 53 - 2041 AM Demand Flow Difference (Test 2)**

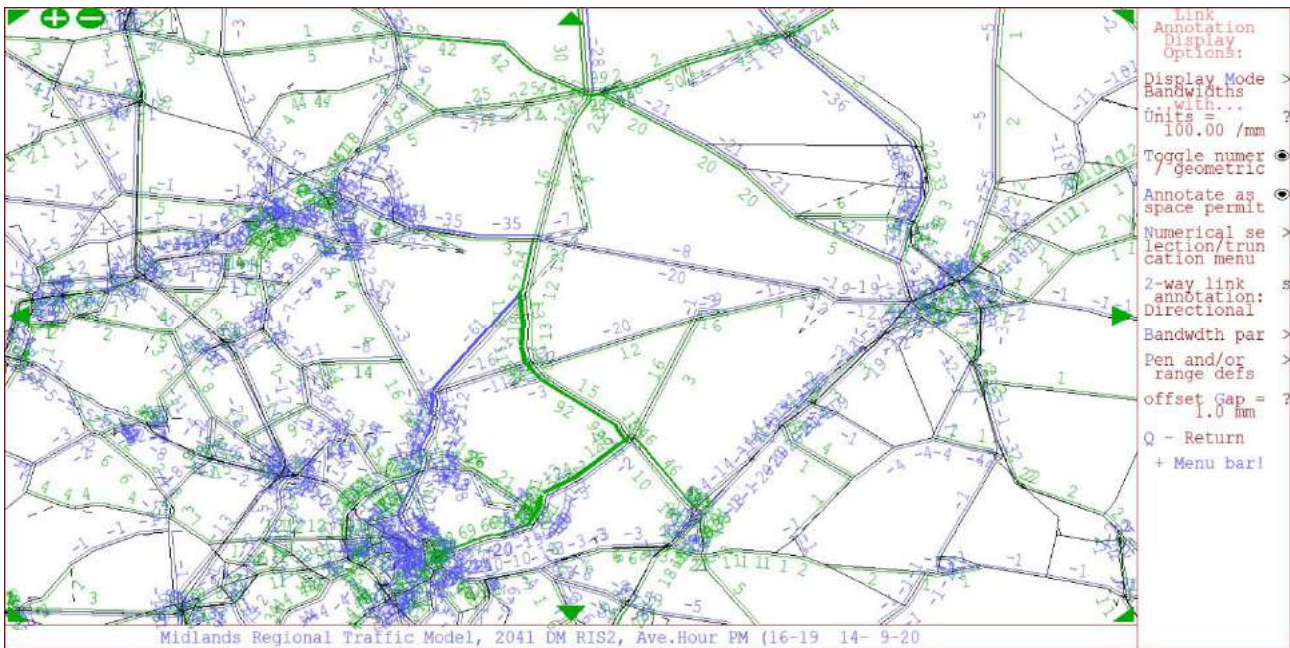




**Figure 54 - 2041 IP Demand Flow Difference (Test 2)**

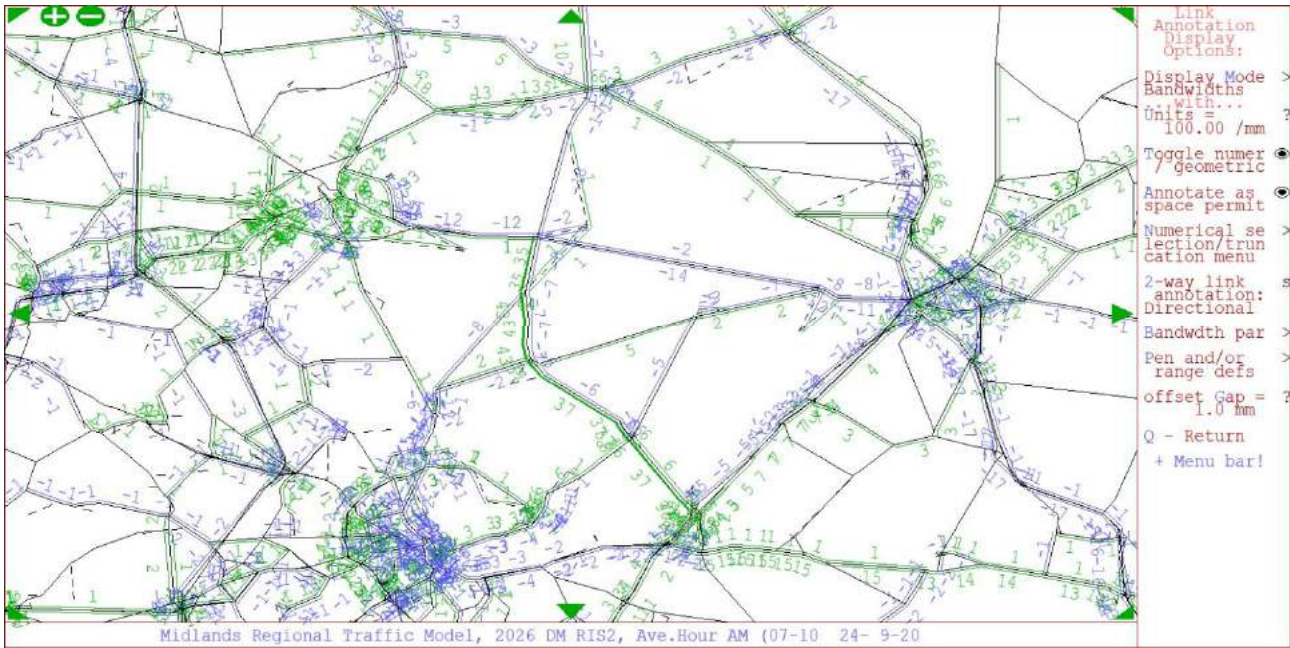


**Figure 55 - 2041 PM Demand Flow Difference (Test 2)**

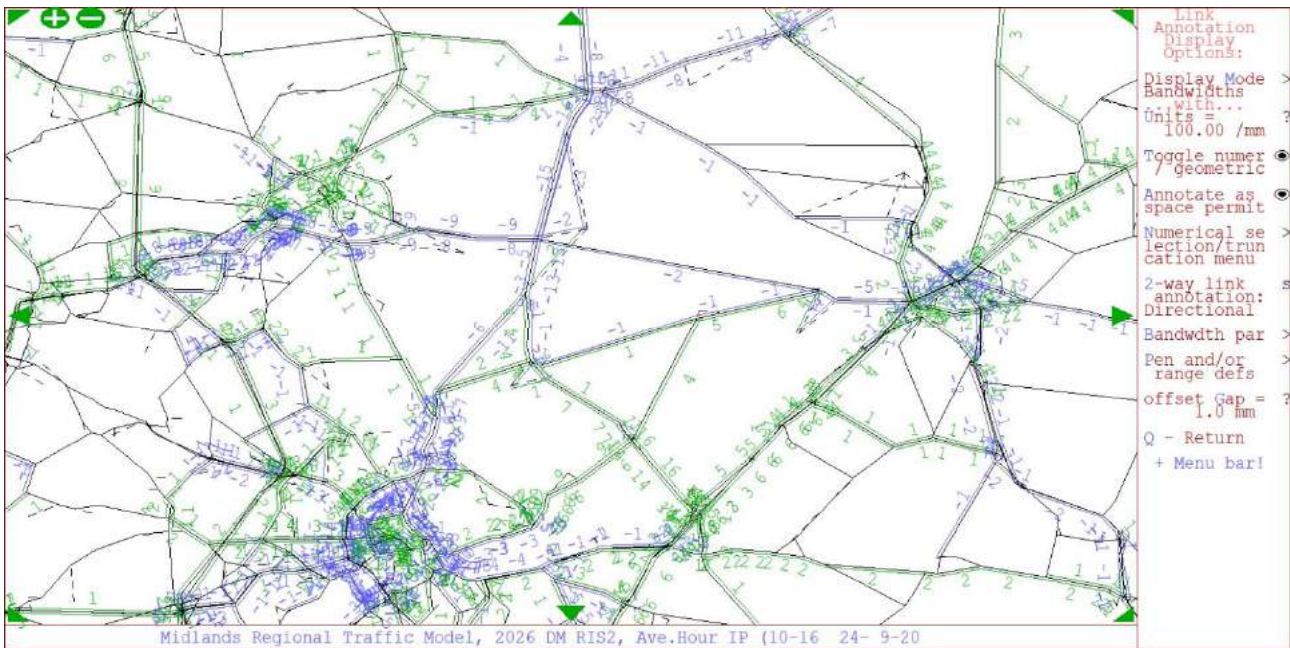




**Figure 56 - 2026 AM Demand Flow Difference (Test 3)**

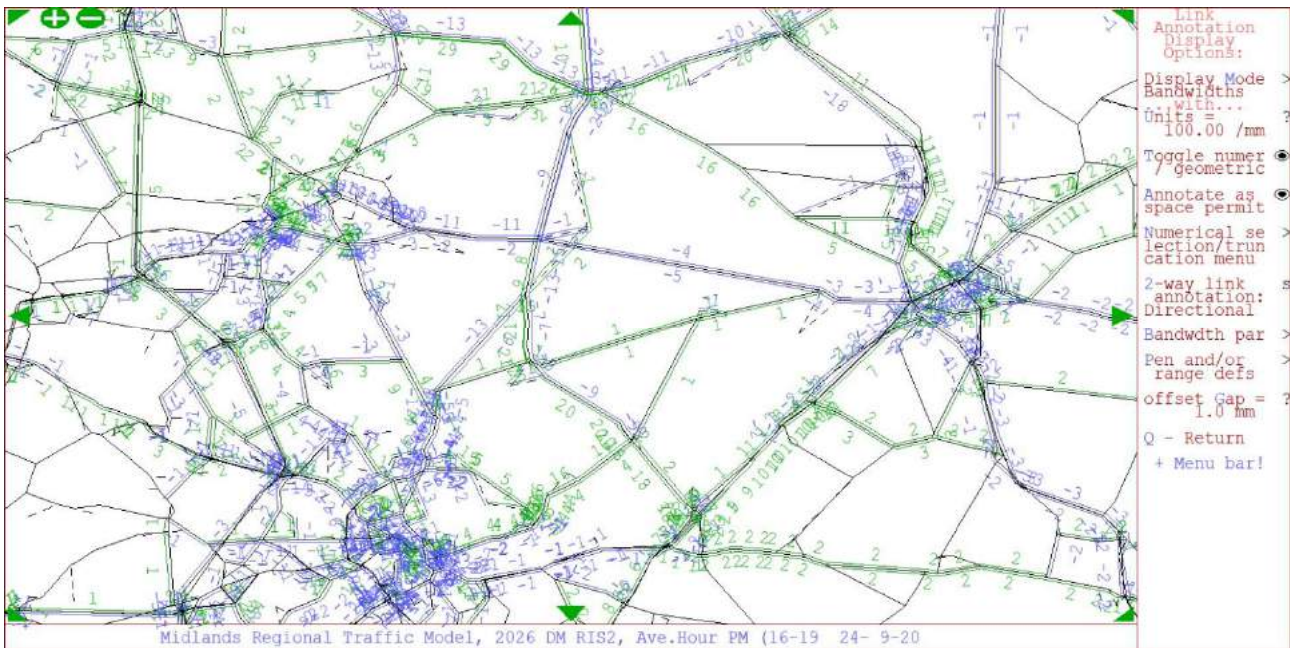


**Figure 57 - 2026 IP Demand Flow Difference (Test 3)**

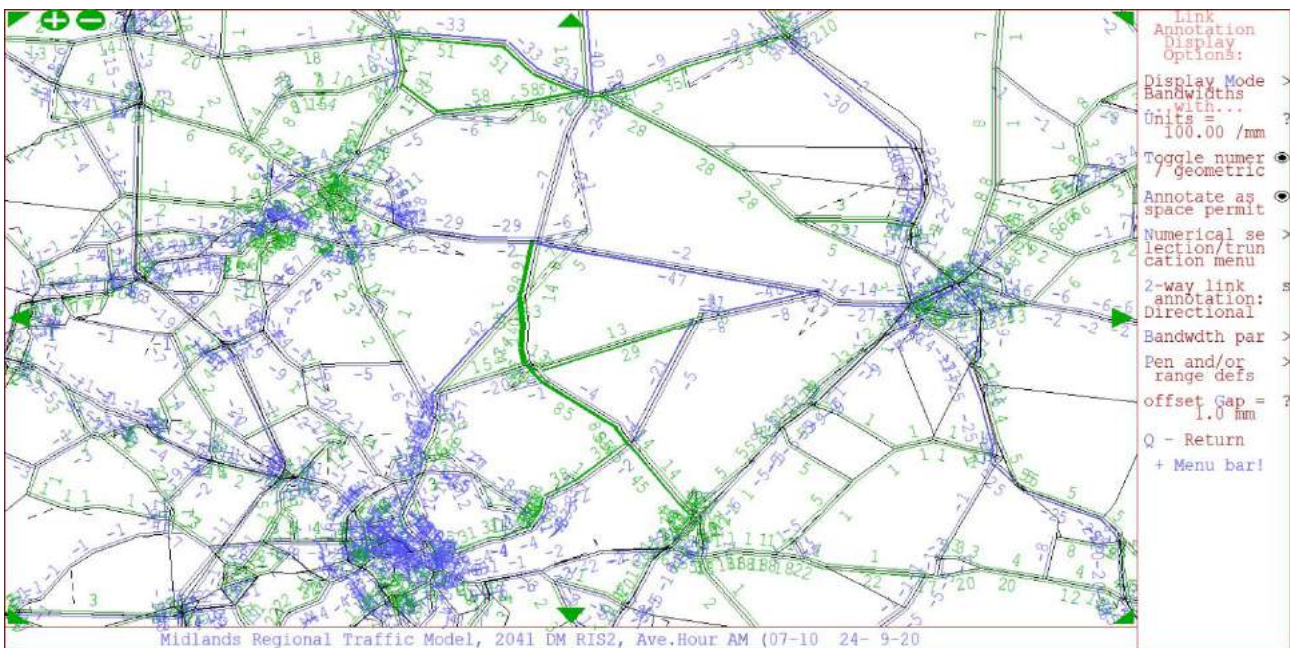




**Figure 58 - 2026 PM Demand Flow Difference (Test 3)**

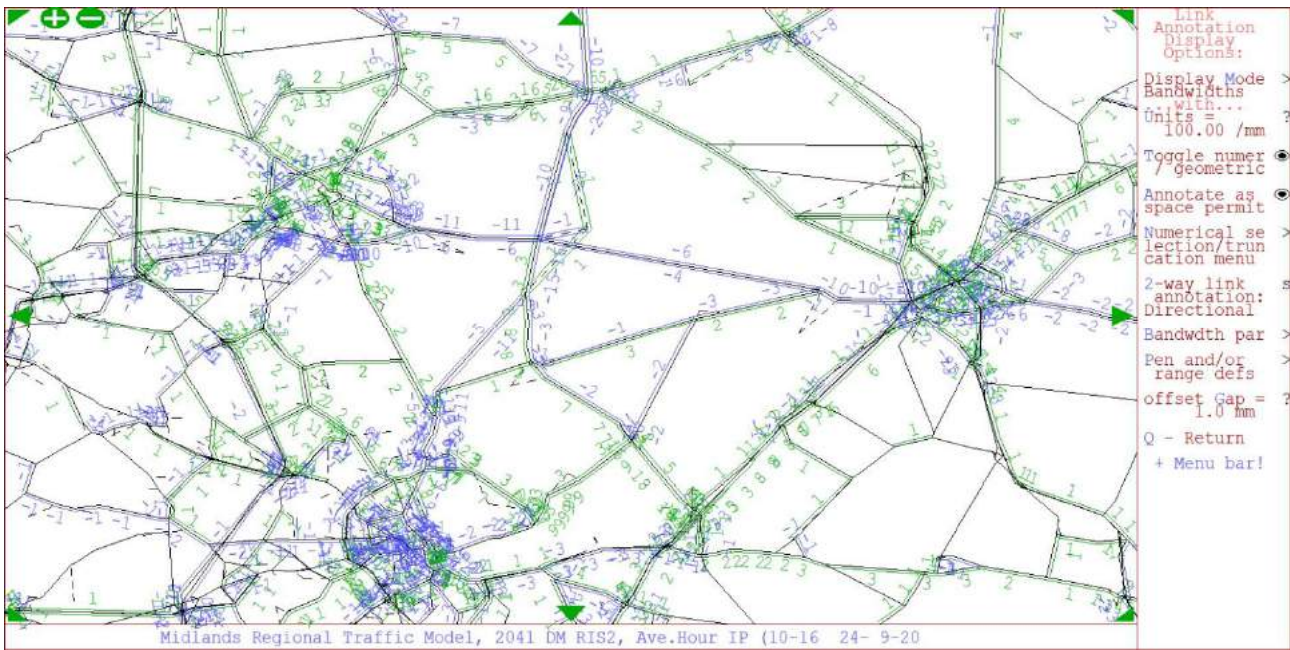


**Figure 59 - 2041 AM Demand Flow Difference (Test 3)**

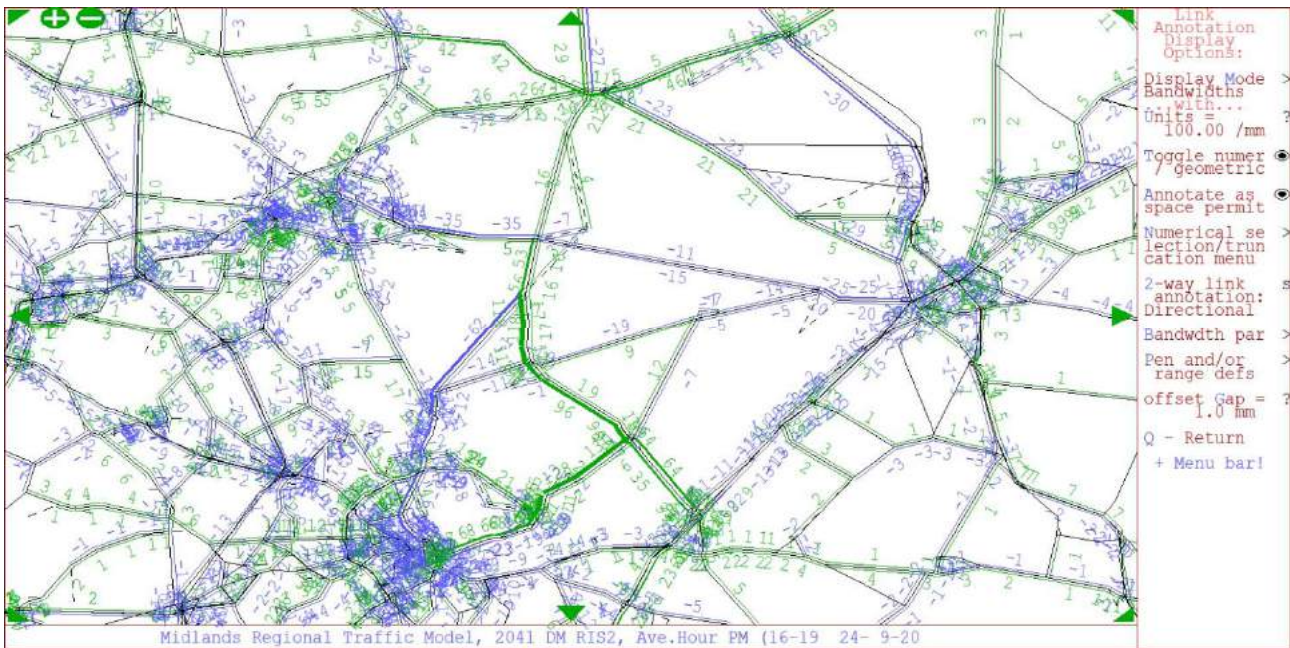




**Figure 60 - 2041 IP Demand Flow Difference (Test 3)**



**Figure 61 - 2041 PM Demand Flow Difference (Test 3)**



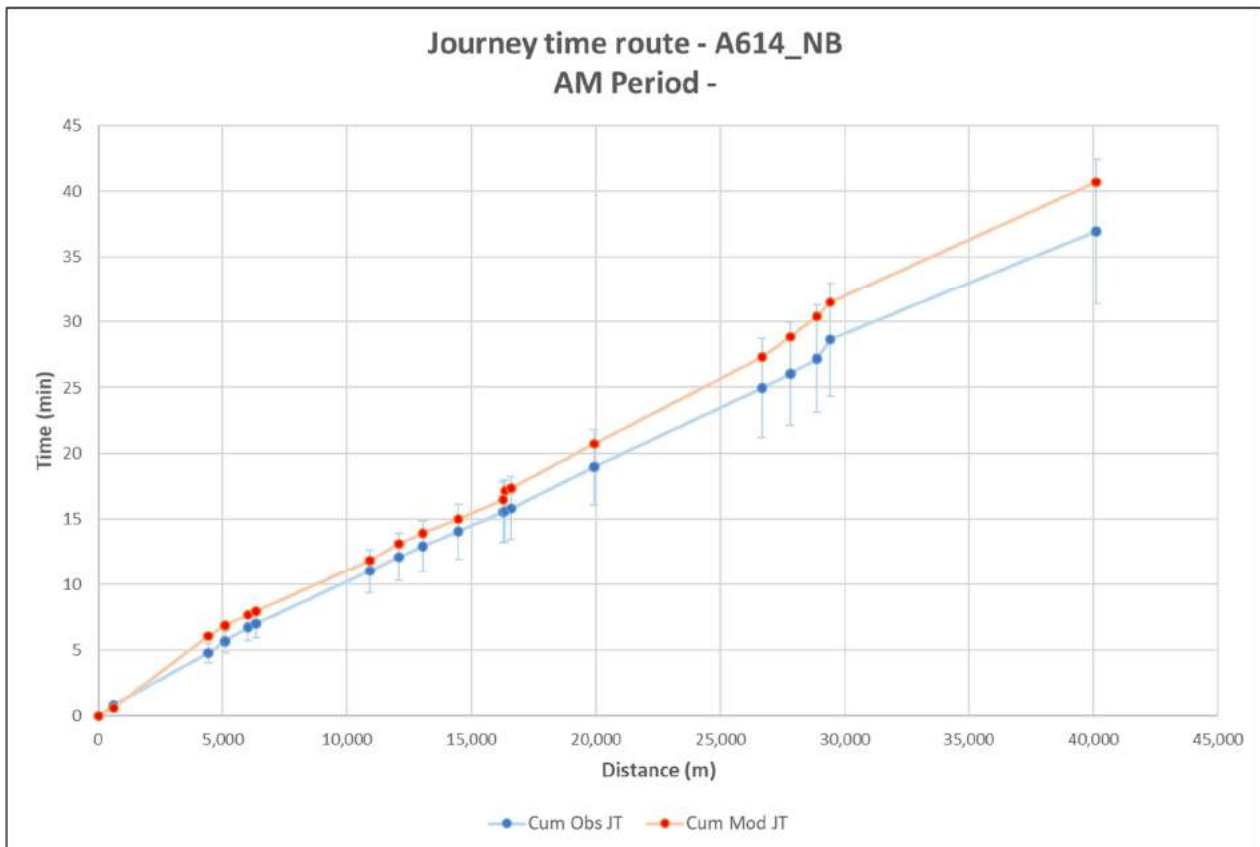




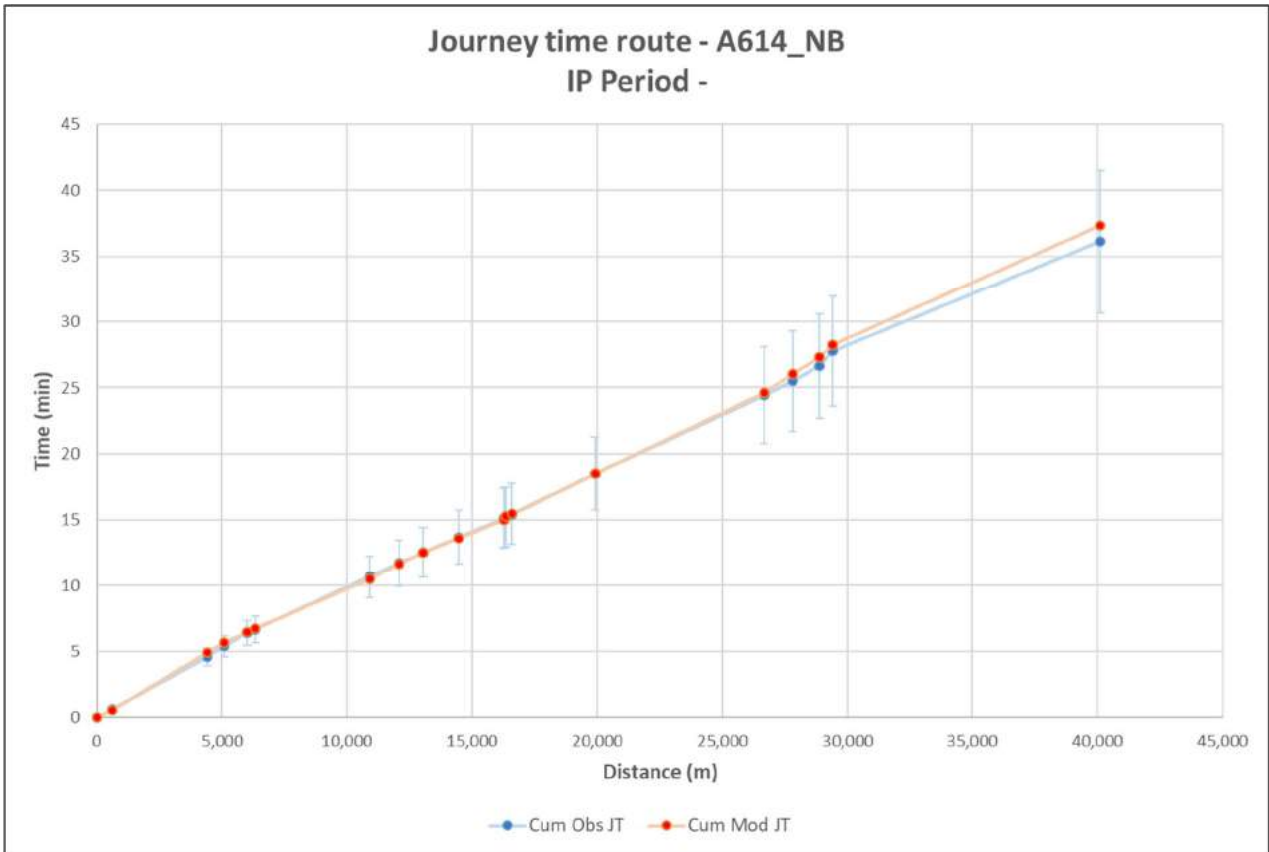
# Appendix A – A614 Journey Time Validation

Time-distance graphs for the A614-A6097 journey time route, taken from the spreadsheets which underly the model validation report, are shown below.

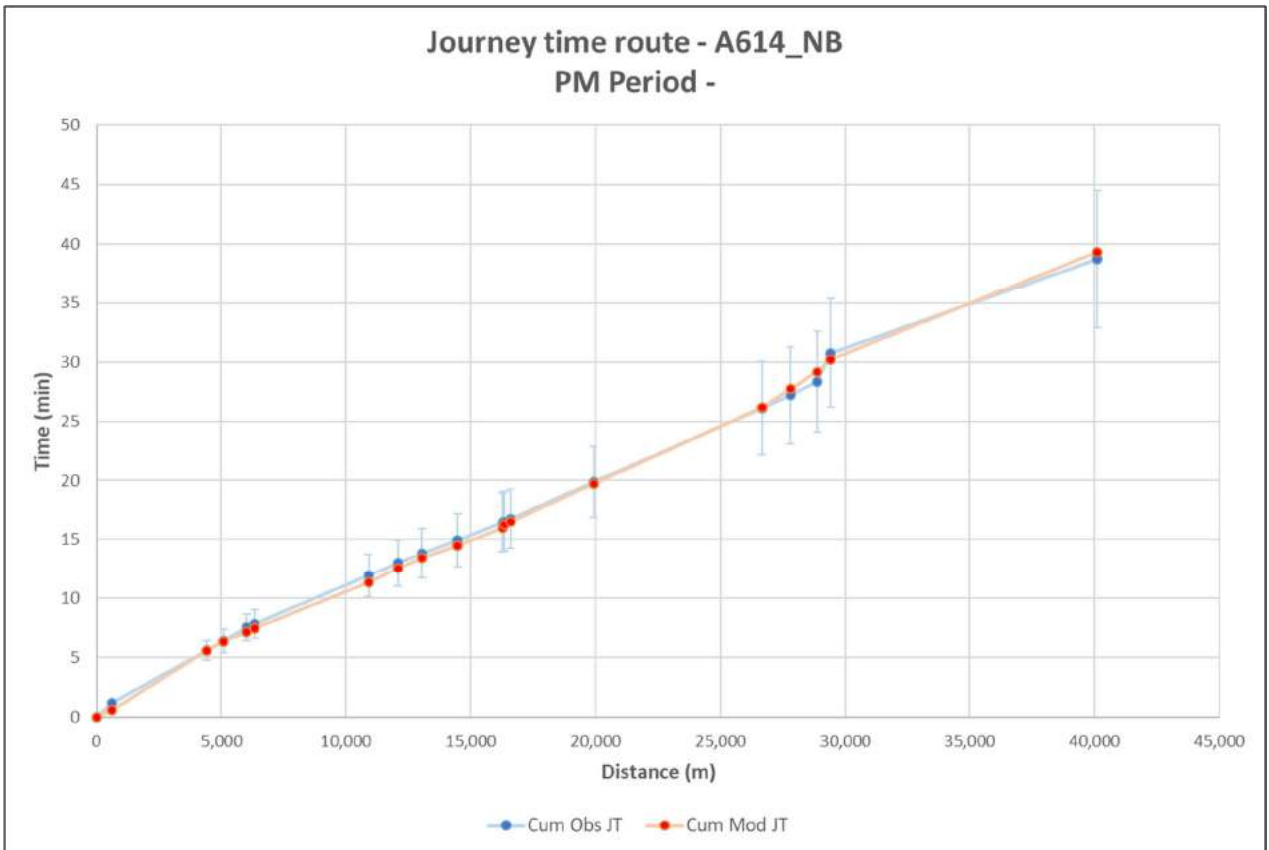
**Figure 1 - Time-distance graph: A614 northbound AM**



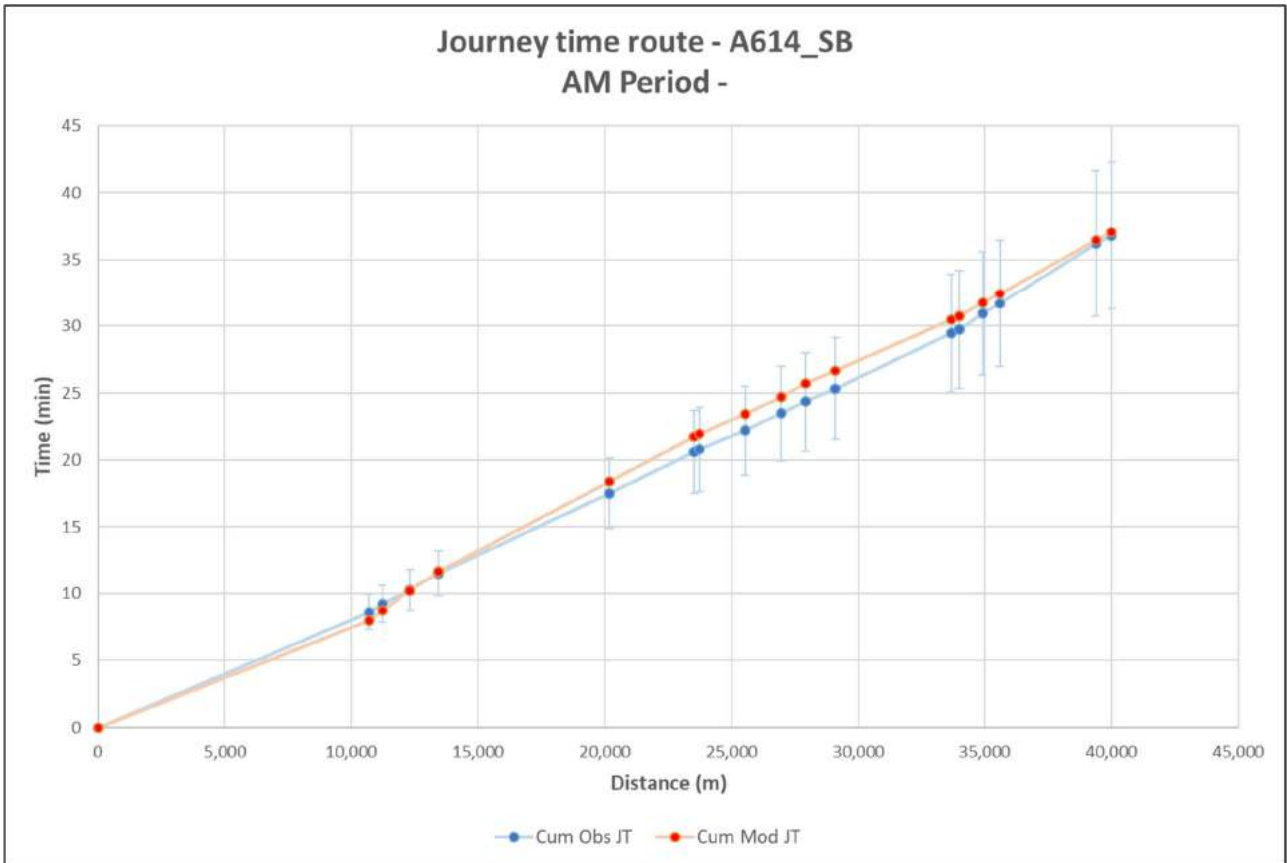
**Figure 2 - Time-distance graph: A614 northbound IP**



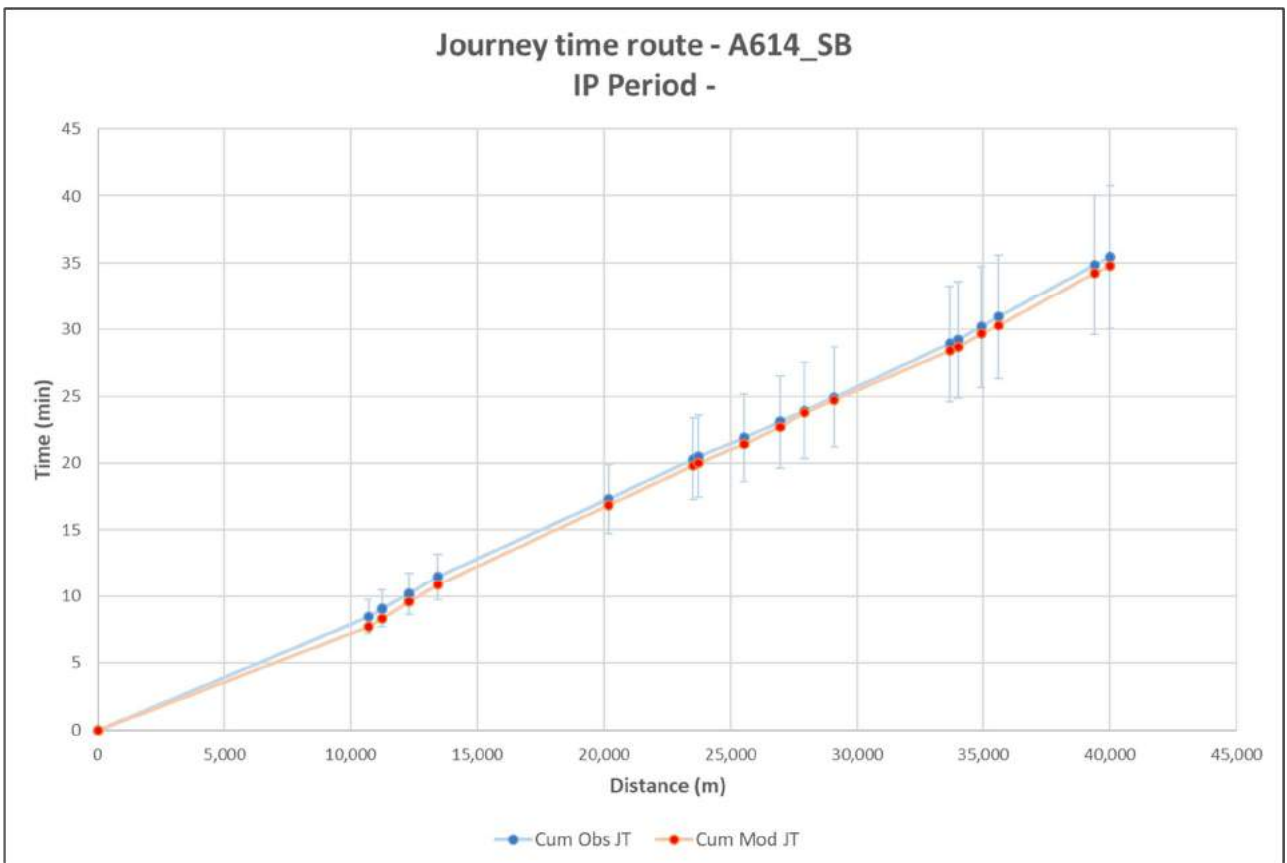
**Figure 3 - Time-distance graph: A614 northbound PM**



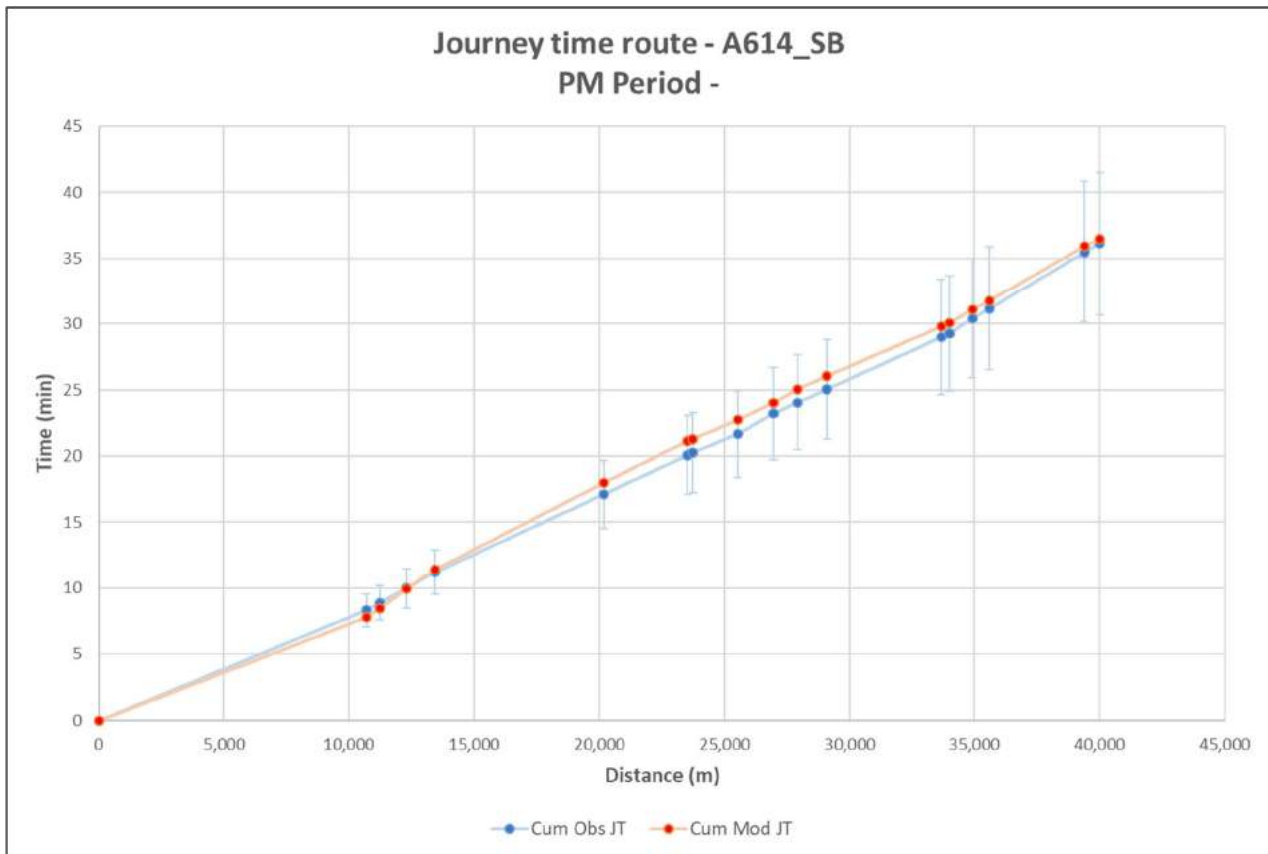
**Figure 4 - Time-distance graph: A614 Southbound AM**



**Figure 5 - Time-distance graph: A614 southbound IP**



**Figure 6 - Time-distance graph: A614 southbound PM**



The table below expands Table 2 from the A614 Strategic Assessment technical note dated September 2020, in order to include the modelled to observed journey time route differences for the A1 and M1 journey time routes, alongside those for the A614-A6097.

**Figure 7 - Model Validation Report journey time route study**

Time and Direction	Modelled/Observed Journey Time Differences		
	A614/A6097	A1	M1
AM Northbound	10.3%	-1.3%	3.8%
AM Southbound	0.7%	-0.7%	3.3%
IP Northbound	3.4%	-3.1%	2.9%
IP Southbound	-1.7%	-1.7%	3.6%
PM Northbound	1.7%	-0.4%	3.2%
PM Southbound	1.1%	0.1%	4.7%

It should be noted that while the A1 and M1 routes are both parallel routes, for the purposes of the validation, both are significantly longer than the A614 route (the A614-A6097 route is approximately 40km, while the A1 route is approximately 125km and the M1 route is approximately 110km). The M1 and A1 are also both part of the Strategic Road Network (SRN), and better validation is expected in the Regional Models for these routes than for non-SRN routes.

## Appendix B – A614 Select Link Sector to Sector Analysis

To provide further detail to the information provided in the A614 Strategic Assessment technical note dated September 2020, select link analysis for two links was performed on the base year models in the AM and PM peaks. The matrices from this analysis have been extracted and analysed in a sector-to-sector format in order to further explore if there are re-routing possibilities.

### Gunthorpe Bridge Select Link

Select Link analysis was performed on the link representing the A6097 Gunthorpe Bridge which crosses the River Trent approximately half way between the A6011 and A60 crossings in the West Bridgford area of Nottingham and the A617 and A1 to the west and north of Newark. The size of the select link matrices are detailed below.

Direction	Time Period	Matrix Size (PCUs per hour)
Northbound	AM Peak	1,050
Southbound		561
Northbound	PM Peak	964
Southbound		605

### Sector Definition

A ten sector system was defined for this select link, as outlined below.

Sector	Sector Name	Definition
1	Greater Nottingham North	Zones in the Nottingham urban area north of the River Trent, including Long Eaton, Stapleford, Beeston, Wollaton, Arnold, Carlton and Netherfield.
2	Greater Nottingham South	Zones in the Nottingham urban area south of the River Trent, including West Bridgford, Compton Acres, and Clifton.
3	Mansfield	Zones falling within Mansfield, and Sutton-in-Ashfield.
4	Beyond Mansfield	Zones accessed to the west and north west of Mansfield, including Derbyshire, Sheffield, and the north west of England.



5	Beyond Nottingham	Zones accessed to the south and west of Nottingham and Nottinghamshire, including Leicester and Birmingham.
6	North	Zones accessed to the north of Nottinghamshire, including Yorkshire.
7	Newark	Zones representing Newark.
8	Lincoln	Zones representing Lincoln and the surrounding areas in the north of Lincolnshire, including Gainsborough and Market Rasen.
9	Grantham	Zones representing Grantham and the immediate surrounding area.
10	Beyond Grantham	Zones representing Lincolnshire (less those in the Lincoln and Grantham segments), and remaining areas to the south and east of Grantham.
11	Nottinghamshire North	Zones in Nottinghamshire to the north of the River Trent (less Mansfield which is defined in another sector).
12	Nottinghamshire South	Zones in Nottinghamshire south of the River Trent (less Newark which is defined in another sector).

## Matrices

Matrices are shown below, showing the proportion of the total matrix in each cell.

**Table 1 – Gunthorpe Bridge northbound AM select link sector matrix**

	Greater Nottingham North	Greater Nottingham South	Mansfield	Beyond Mansfield	Beyond Nottingham	North	Newark	Lincoln	Grantham	Beyond Grantham	Nottinghamshire North	Nottinghamshire South	Total
Greater Nottingham North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mansfield	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Mansfield	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Nottingham	3%	0%	1%	2%	0%	3%	1%	0%	0%	0%	10%	0%	19%
North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Newark	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	12%
Lincoln	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%
Grantham	5%	0%	0%	1%	0%	0%	0%	0%	0%	0%	2%	0%	8%
Beyond Grantham	15%	0%	0%	1%	0%	0%	0%	0%	0%	0%	5%	0%	21%
Nottinghamshire North	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Nottinghamshire South	16%	0%	2%	4%	0%	2%	0%	0%	0%	0%	11%	0%	36%
Total	51%	0%	4%	7%	0%	6%	1%	0%	0%	0%	32%	0%	100%

**Table 2 - Gunthorpe Bridge southbound AM select link sector matrix**

	Greater Nottingham North	Greater Nottingham South	Mansfield	Beyond Mansfield	Beyond Nottingham	North	Newark	Lincoln	Grantham	Beyond Grantham	Nottinghamshire North	Nottinghamshire South	Total
Greater Nottingham North	0%	0%	0%	0%	1%	0%	3%	0%	5%	9%	0%	6%	24%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mansfield	0%	0%	0%	0%	2%	0%	0%	0%	1%	2%	0%	2%	7%
Beyond Mansfield	0%	0%	0%	0%	1%	0%	0%	0%	1%	4%	0%	2%	8%
Beyond Nottingham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%	4%
Newark	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%	2%
Lincoln	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grantham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Grantham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nottinghamshire North	0%	0%	0%	0%	21%	0%	3%	1%	5%	9%	0%	13%	54%
Nottinghamshire South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	0%	0%	0%	30%	0%	6%	1%	13%	24%	0%	26%	100%

Northbound, it is clear that the sector matrix indicates the majority of trips are originating from sectors south of the River Trent, and travelling to either the Greater Nottingham North

or Nottinghamshire North sectors (both of which are north of the Trent). This indicates the lack of route choice these trips have given the limited availability of crossings of the River Trent. These trips are originating from the Nottinghamshire South, Beyond Grantham, and Newark sectors among others.

For the southbound select link, a similar pattern is seen in reverse, with 78% of the trips in the matrix originating from either the Nottinghamshire North or Greater Nottingham sectors. All of these trips travel to sectors south of the River Trent.

There are minimal movements between larger sectors to the north and south using this route.

**Table 3 - Gunthorpe Bridge northbound PM select link sector matrix**

	Greater Nottingham North	Greater Nottingham South	Mansfield	Beyond Mansfield	Beyond Nottingham	North	Newark	Lincoln	Grantham	Beyond Grantham	Nottinghamshire North	Nottinghamshire South	Total
Greater Nottingham North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mansfield	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Mansfield	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Nottingham	8%	0%	2%	1%	0%	3%	1%	0%	0%	0%	13%	0%	27%
North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Newark	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	12%
Lincoln	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	3%
Grantham	4%	0%	0%	1%	0%	0%	0%	0%	0%	0%	3%	0%	8%
Beyond Grantham	9%	0%	1%	2%	0%	0%	0%	0%	0%	0%	9%	0%	20%
Nottinghamshire North	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Nottinghamshire South	11%	0%	2%	3%	0%	2%	0%	0%	0%	0%	11%	0%	29%
Total	45%	0%	5%	7%	0%	4%	1%	0%	0%	0%	38%	0%	100%

**Table 4 - Gunthorpe Bridge southbound PM select link sector matrix**

	Greater Nottingham North	Greater Nottingham South	Mansfield	Beyond Mansfield	Beyond Nottingham	North	Newark	Lincoln	Grantham	Beyond Grantham	Nottinghamshire North	Nottinghamshire South	Total
Greater Nottingham North	0%	0%	0%	0%	8%	0%	8%	0%	5%	5%	0%	15%	41%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mansfield	0%	0%	0%	0%	2%	0%	0%	0%	1%	1%	0%	2%	5%
Beyond Mansfield	0%	0%	0%	0%	1%	0%	0%	0%	1%	1%	0%	2%	5%
Beyond Nottingham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%	5%
Newark	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lincoln	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grantham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Beyond Grantham	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nottinghamshire North	0%	0%	0%	0%	19%	0%	4%	1%	3%	4%	0%	14%	44%
Nottinghamshire South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	0%	0%	0%	32%	0%	12%	1%	9%	11%	0%	35%	100%

The PM sector matrices present a very similar pattern to the AM matrices.

## A614 Select Link

Select Link analysis was performed on the link representing the A614 to the immediate south west of the Warren Hill junction. The size of the select link matrices are detailed below.

Direction	Time Period	Matrix Size (PCUs per hour)
Northbound	AM Peak	488
Southbound		738
Northbound	PM Peak	509
Southbound		574

## Sector Definition

A seven-sector system was defined for this select link, as outlined below:

Sector	Sector Name	Definition
1	Worksop	Zones representing Worksop and its surrounds, including Carlton in Lindrick.
2	Retford	Zones representing Retford and its surrounds.
3	Greater Nottingham North	Zones in the Nottingham urban area north of the River Trent, including Long Eaton, Stapleford, Beeston, Wollaton, Arnold, Carlton and Netherfield.
4	Greater Nottingham South	Zones in the Nottingham urban area south of the River Trent, including West Bridgford, Compton Acres, and Clifton.
5	Lincolnshire	Zones representing Lincolnshire.
6	South	Zones representing the southern half of Derbyshire, and all other areas to the South.
7	North	Zones representing the northern half of Derbyshire, plus all other zones to the North.
8	Nottinghamshire North	Zones in Nottinghamshire to the north of the River Trent (less Worksop and Retford, which are defined in other sectors).
9	Nottinghamshire South	Zones in Nottinghamshire south of the River Trent.

**Matrices**

Matrices are shown below, showing the proportion of the total matrix in each cell.

**Table 5 - A614 northbound AM select link sectored matrix**

	Worksop	Retford	Greater Nottingham North	Greater Nottingham South	Lincolnshire	South	North	Nottinghamshire North	Nottinghamshire South	Total
Worksop	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Retford	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham North	10%	20%	0%	0%	1%	0%	26%	31%	0%	88%
Greater Nottingham South	1%	1%	0%	0%	0%	0%	4%	4%	0%	9%
Lincolnshire	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nottinghamshire North	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%
Nottinghamshire South	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%
Total	12%	21%	0%	0%	1%	0%	30%	37%	0%	100%

**Table 6 - A614 southbound AM select link sectored matrix**

	Worksop	Retford	Greater Nottingham North	Greater Nottingham South	Lincolnshire	South	North	Nottinghamshire North	Nottinghamshire South	Total
Worksop	0%	0%	14%	1%	0%	0%	0%	0%	0%	15%
Retford	0%	0%	15%	1%	0%	0%	0%	2%	0%	18%
Greater Nottingham North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lincolnshire	0%	0%	4%	0%	0%	0%	0%	1%	0%	5%
South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	19%	2%	0%	0%	0%	0%	0%	21%
Nottinghamshire North	0%	0%	34%	2%	0%	1%	0%	3%	1%	41%
Nottinghamshire South	0%	0%	1%	0%	0%	0%	0%	0%	0%	2%
Total	0%	0%	87%	5%	0%	2%	0%	6%	1%	100%

Northbound, the majority of trips originate from the Greater Nottingham North sector and travel to sectors further north. A small proportion originate from the Greater Nottingham South sector, and travel through Nottingham to use the A614 to travel north. Southbound, a similar situation is observed in reverse, with 87% of the trips in the matrix having the Greater Nottingham North sector as their destination.



**Table 7 - A614 northbound PM select link sector matrix**

	Worksop	Retford	Greater Nottingham North	Greater Nottingham South	Lincolnshire	South	North	Nottinghamshire North	Nottinghamshire South	Total
Worksop	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Retford	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham North	7%	13%	0%	0%	3%	0%	22%	39%	0%	83%
Greater Nottingham South	1%	1%	0%	0%	0%	0%	3%	5%	0%	10%
Lincolnshire	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nottinghamshire North	0%	2%	0%	0%	0%	0%	1%	4%	0%	6%
Nottinghamshire South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	8%	16%	0%	0%	3%	0%	26%	48%	0%	100%

**Table 8 - A614 southbound PM select link sector matrix**

	Worksop	Retford	Greater Nottingham North	Greater Nottingham South	Lincolnshire	South	North	Nottinghamshire North	Nottinghamshire South	Total
Worksop	0%	0%	8%	1%	0%	0%	0%	0%	0%	9%
Retford	0%	0%	15%	0%	0%	2%	0%	3%	0%	20%
Greater Nottingham North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greater Nottingham South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lincolnshire	0%	0%	1%	0%	0%	0%	0%	1%	0%	2%
South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
North	0%	0%	26%	3%	0%	0%	0%	0%	0%	29%
Nottinghamshire North	0%	0%	29%	3%	0%	4%	0%	3%	1%	40%
Nottinghamshire South	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	0%	0%	79%	7%	0%	6%	0%	7%	1%	100%

Largely similar patterns are observed in the PM peak as the AM peak. Northbound, 83% of the trips originate from the Greater Nottingham North sector, though a small proportion (3%) travel to Lincolnshire rather than to sectors further north. Southbound, 79% of the trips in the matrix have the Greater Nottingham North sector as their destination.

## Appendix C – Traffic Growth

The tables below show the growth in demand from the MCHM strategic transport model, on the link representing the A614 immediately south of the roundabout where it meets the A617, between the 2015 base year and the do-minimum forecast year models.

**Figure 1 - A614 northbound growth in demand (MCHM)**

Peak Hour Time Period	2015 Base Demand (PCUs)	2026 Demand (PCUs)	Growth from Base	2031 Demand (PCUs)	Growth from Base	2041 Demand (PCUs)	Growth from Base
AM	838	880	5.0%	905	8.0%	965	15.2%
IP	605	633	4.6%	668	10.4%	740	22.3%
PM	775	805	3.9%	835	7.7%	894	15.4%

**Figure 2 - A614 southbound growth in demand (MCHM)**

Peak Hour Time Period	2015 Base Demand (PCUs)	2026 Demand (PCUs)	Growth from Base	2031 Demand (PCUs)	Growth from Base	2041 Demand (PCUs)	Growth from Base
AM	964	995	3.2%	1041	8.0%	1100	14.1%
IP	637	658	3.3%	704	10.5%	784	23.1%
PM	794	875	10.2%	952	19.9%	1059	33.4%

The growth in demand from the A614 MRN scheme forecasts are presented in Figure 3 and Figure 4 below for the same link, south of the A617/A614 roundabout.

**Figure 3 - A614 northbound growth in demand (A614/A6097 MRN)**

Peak Hour Time Period	2018 Base Demand (PCUs)	2024 Demand (PCUs)	Growth from Base	2037 Demand (PCUs)	Growth from Base
AM	996	1106	11.1%	1112	12.70%
IP	583	666	14.2%	676	15.9%
PM	898	1036	15.4%	1050	16.8%

**Figure 4 - A614 southbound growth in demand (A614/A6097 MRN)**

Peak Hour Time Period	2018 Base Demand (PCUs)	2024 Demand (PCUs)	Growth from Base	2037 Demand (PCUs)	Growth from Base
AM	910	1083	19.0%	1102	21.1%
IP	604	693	14.7%	704	16.5%
PM	887	987	12.5%	1001	14.1%

It is noted that the forecast years available from the MCHM do not coincide with the A614/A6097 opening year and design years used in the scheme appraisal and the data presented above are therefore not directly comparable.

It should be noted that the A614/A6097 2018 Base Year flows are observed count data, whereas the MCHM flows are modelled flows derived and controlled with limited count data along the scheme corridor.

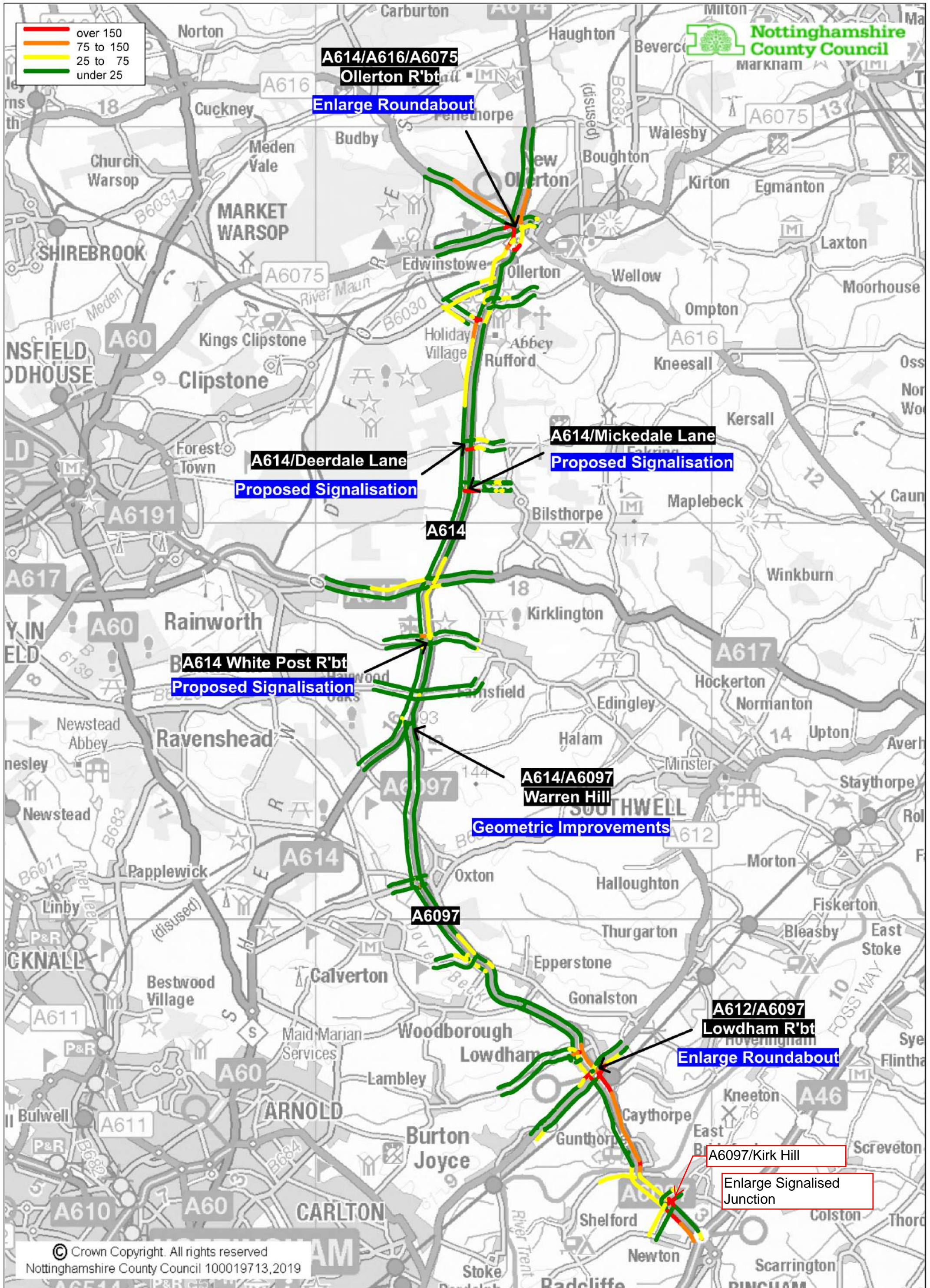
The A614/A6097 forecasts incorporates local planning data from which has not been reflected in the MCHM. This is shown in the higher growth in the scheme opening year, reflecting the planning authorities increased certainty of developments in the near term.



# Appendix C – Trafficmaster Average Vehicle Delay

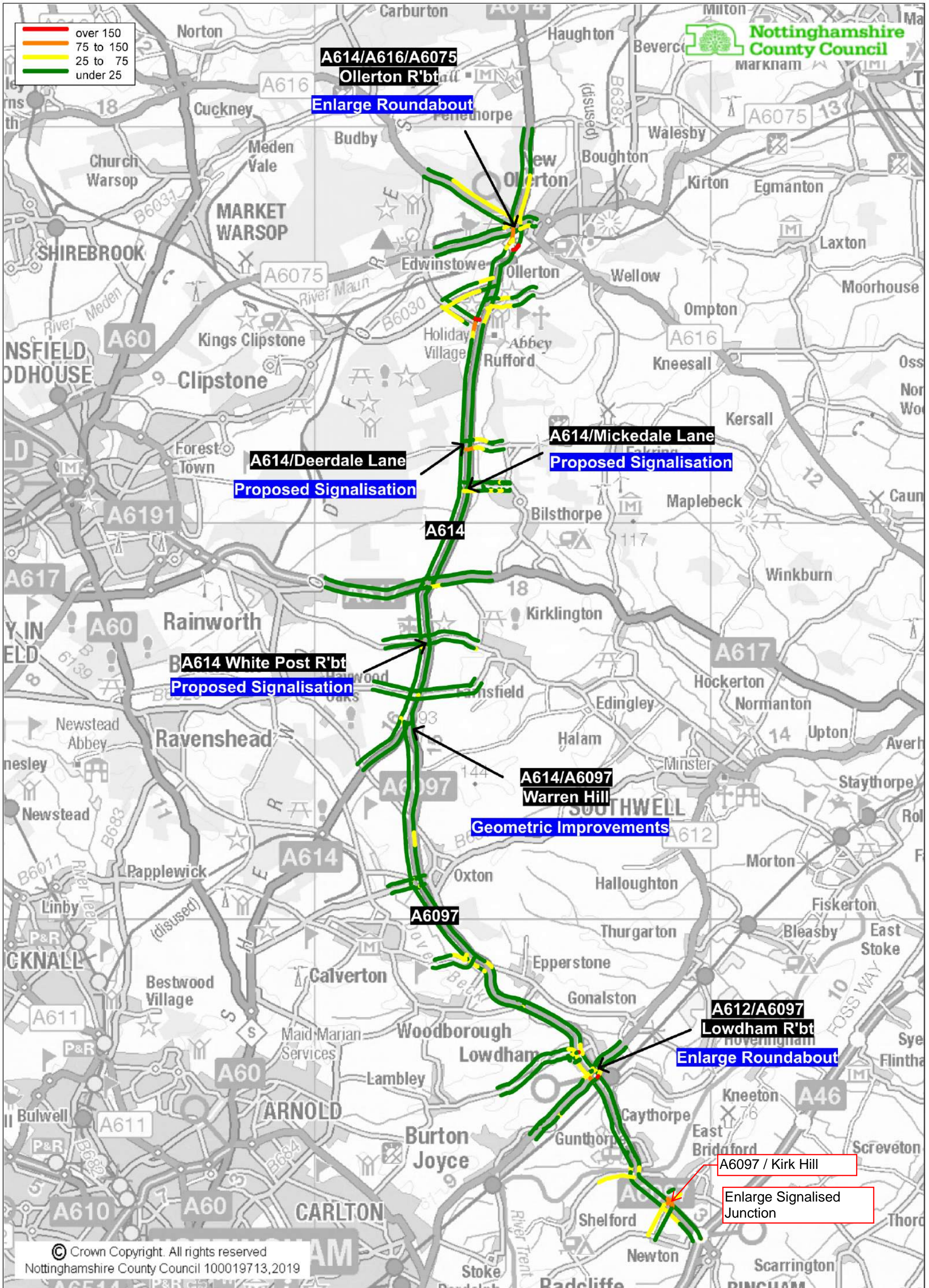


Vehicle delay per mile (seconds) for the A614/A6097 corridor during the morning peak (0800-0900) in 2018. Termtime only. Source: Trafficmaster GPS Data



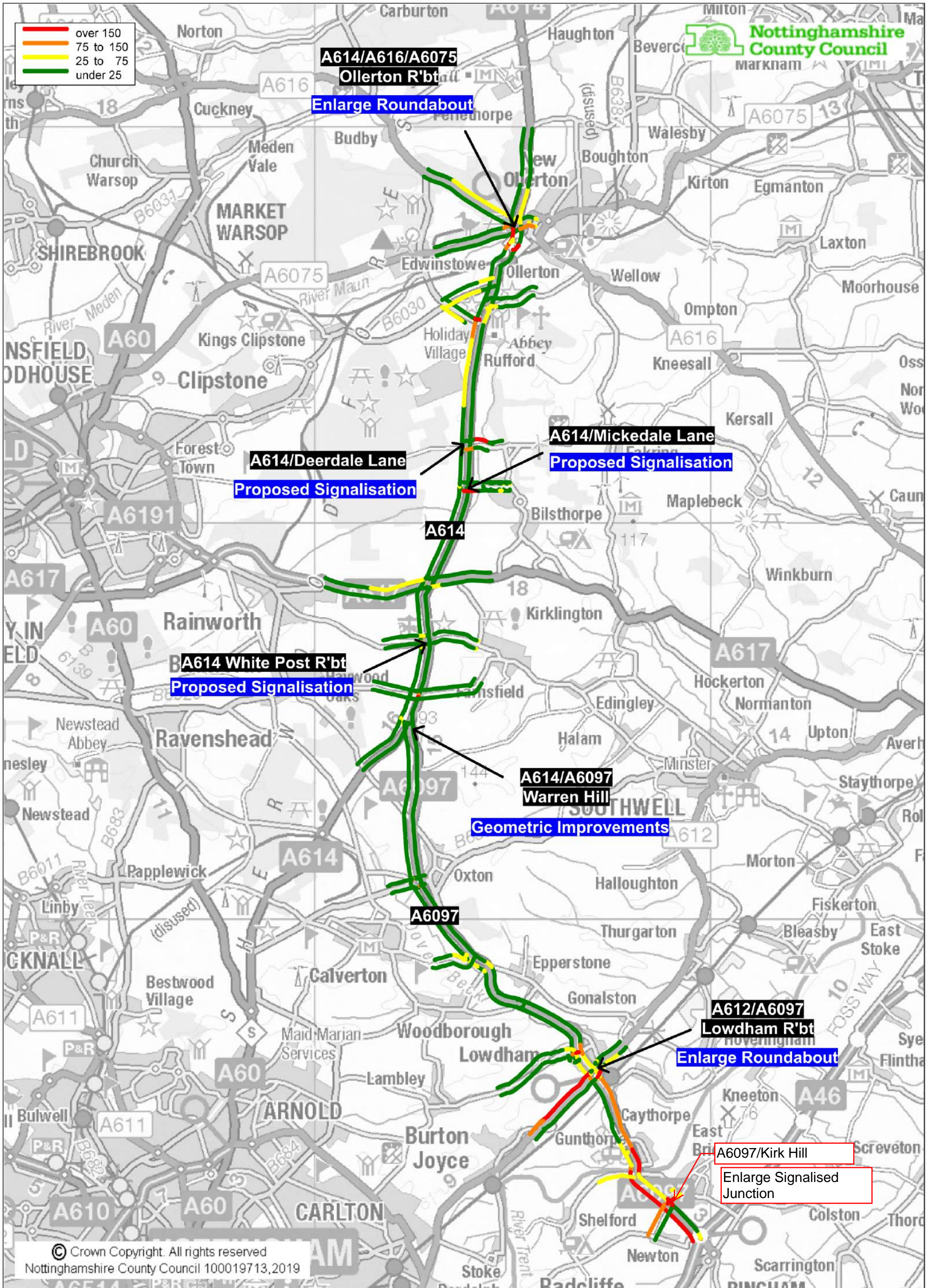


Vehicle delay per mile (seconds) for the A614/A6097 corridor during the inter peak (1000-1100) in 2018. Termtime only. Source: Trafficmaster GPS Data





Vehicle delay per mile (seconds) for the A614/A6097 corridor during the evening peak (1700-1800) in 2018. Termtime only. Source: Trafficmaster GPS Data

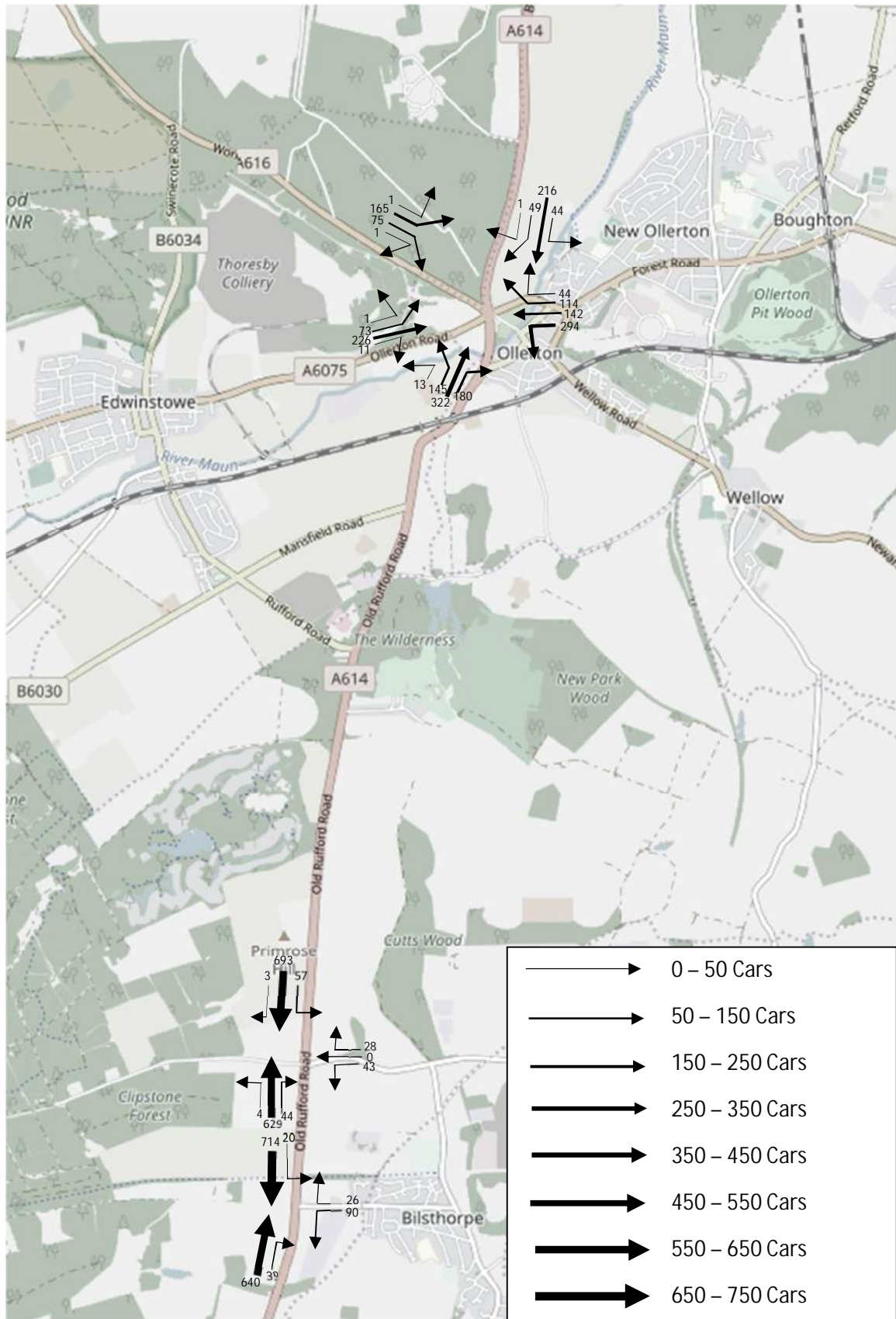


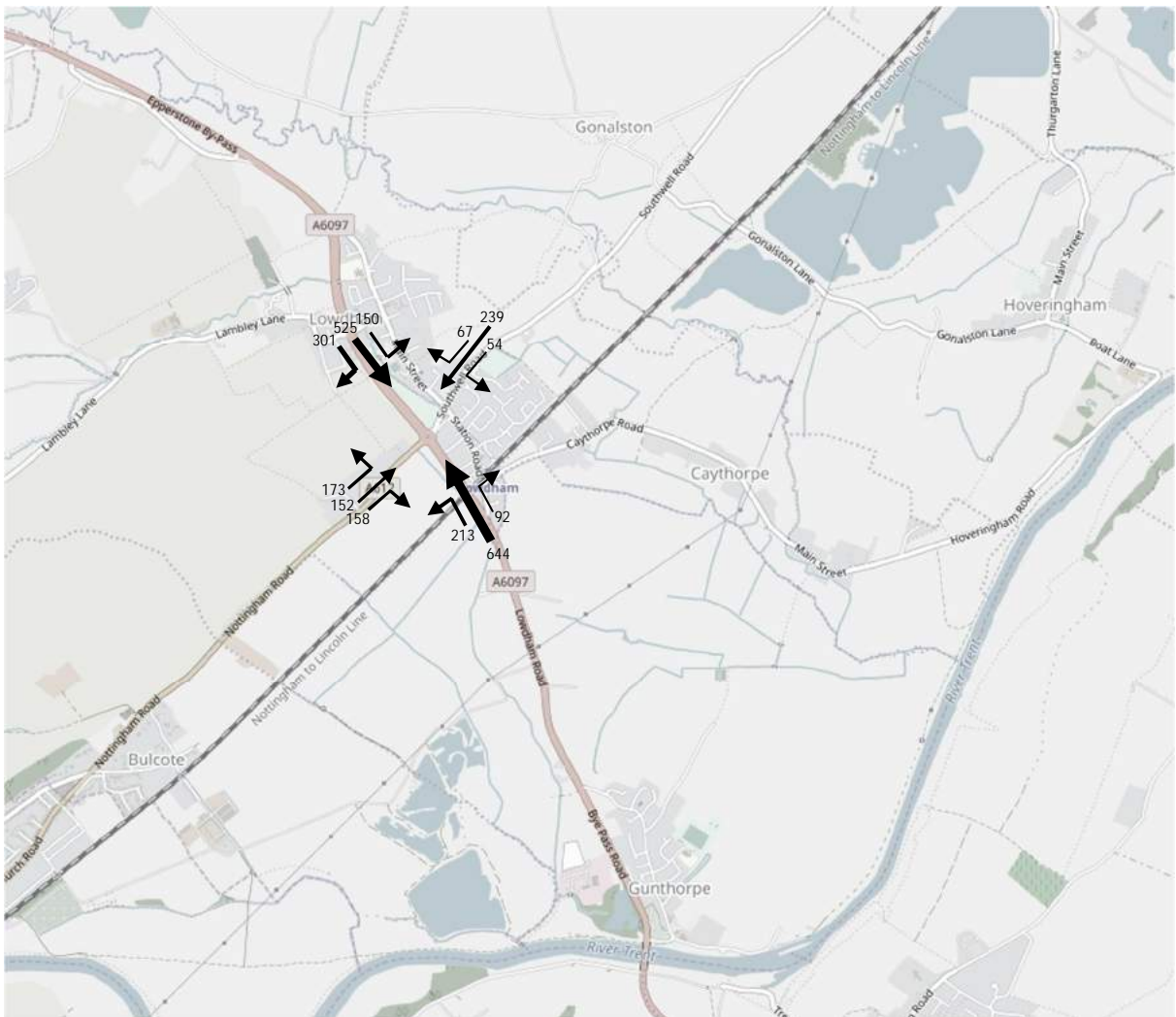


# Appendix D – BY Desire Line Plots and Turning Movements

## Desire Line Diagrams – Cars

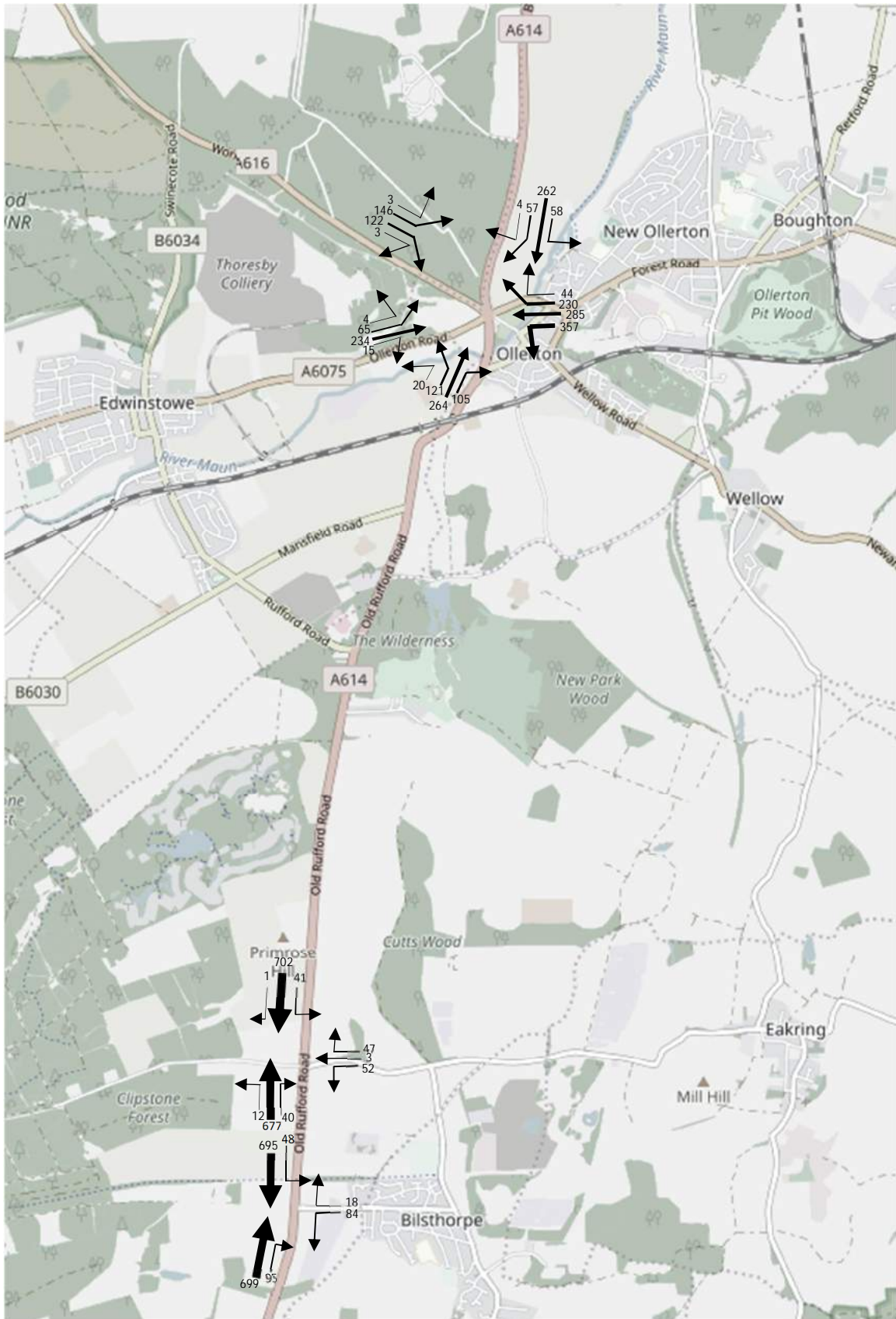
AM Peak (0730 – 0830)



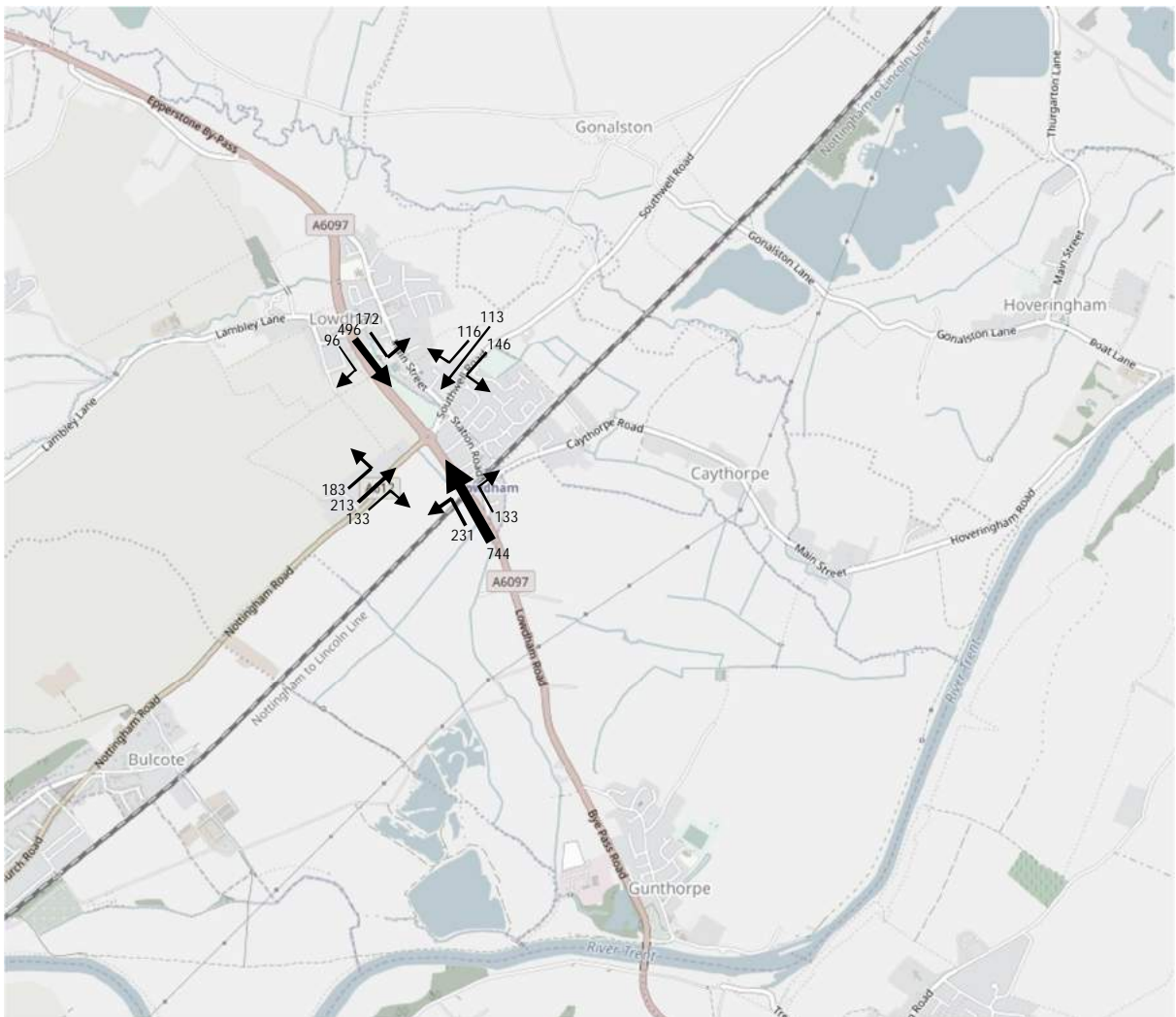




PM Peak (1630 – 1730)

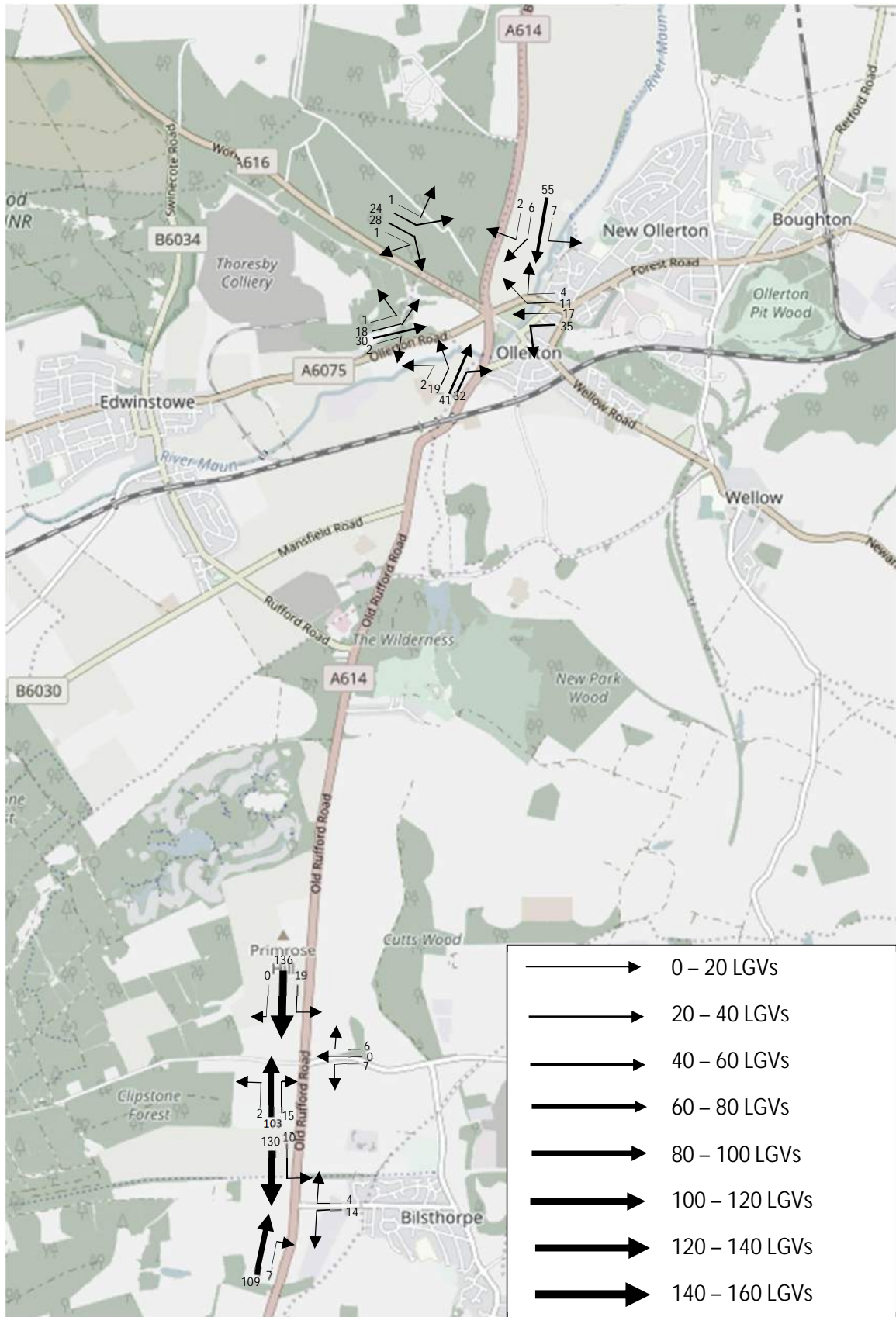




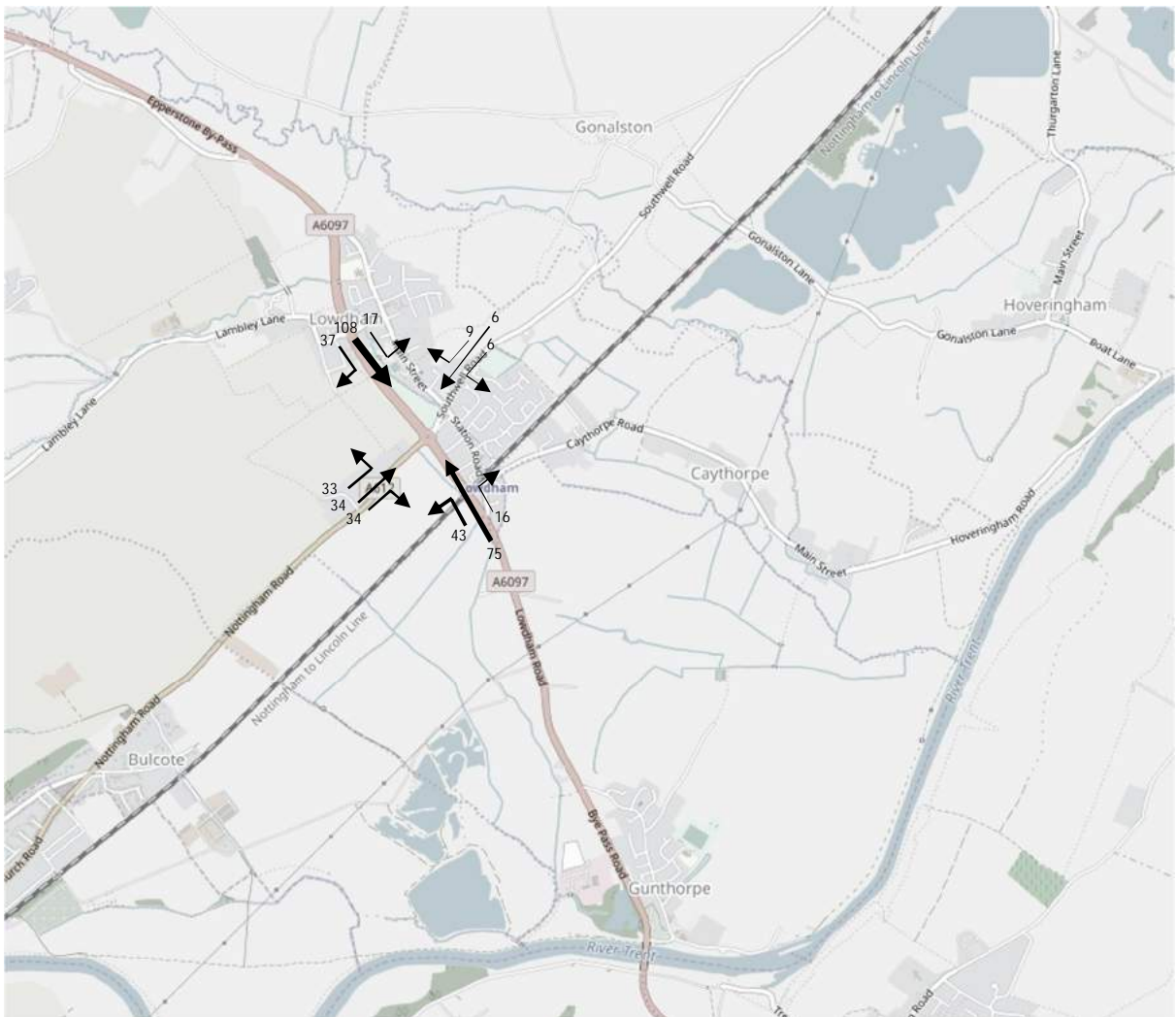


## Desire Line Diagrams – LGVs

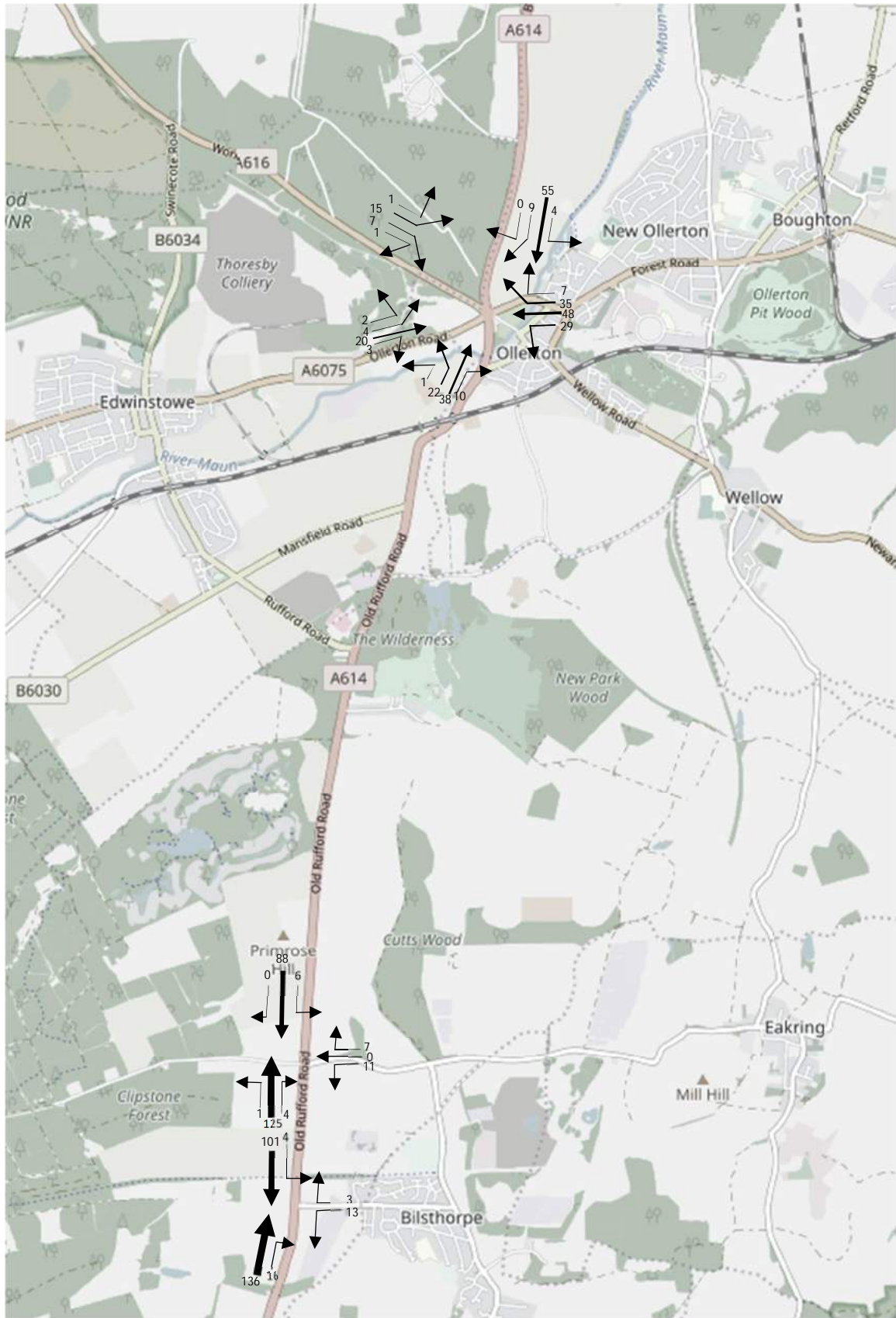
AM Peak (0730 – 0830)



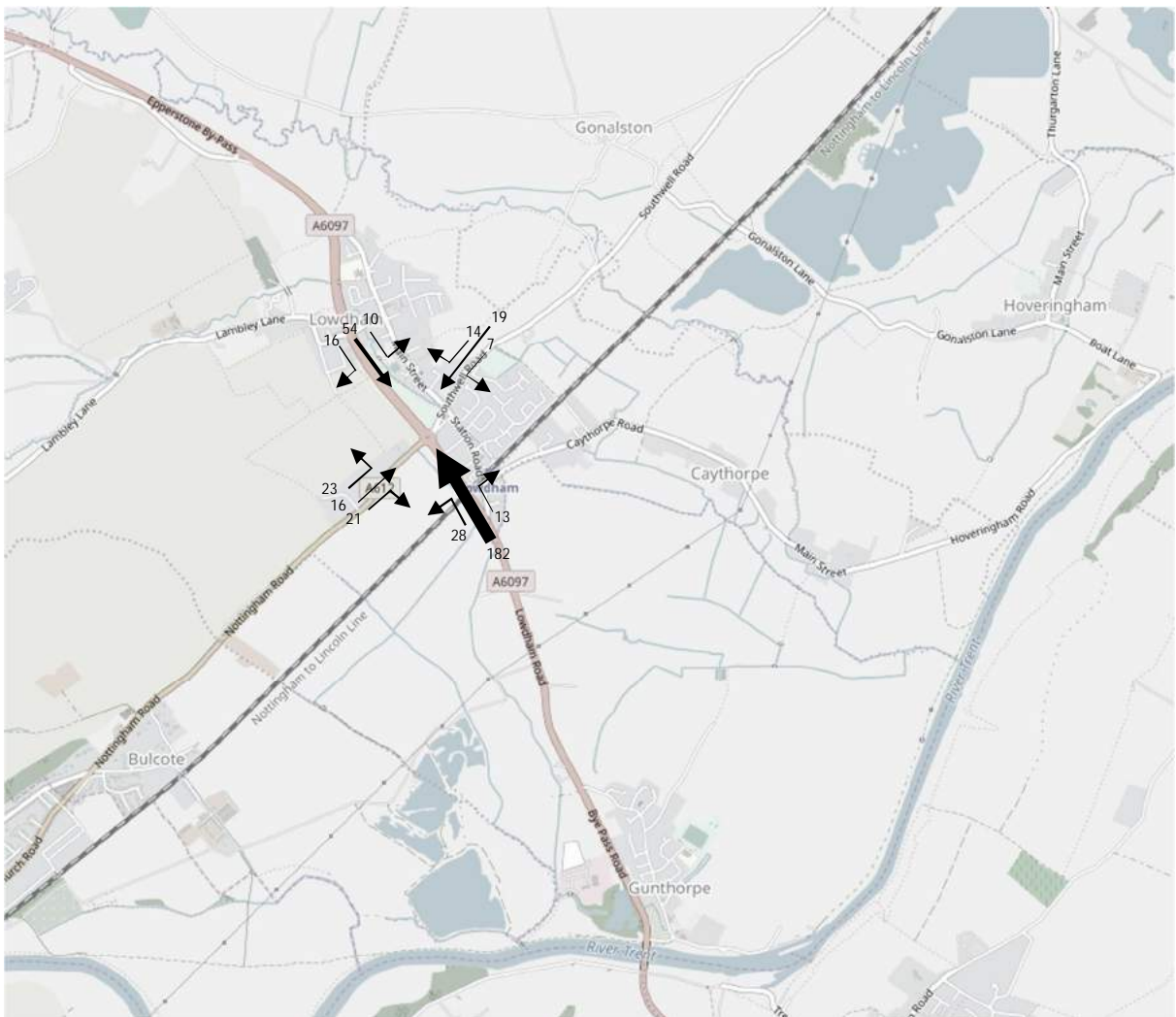
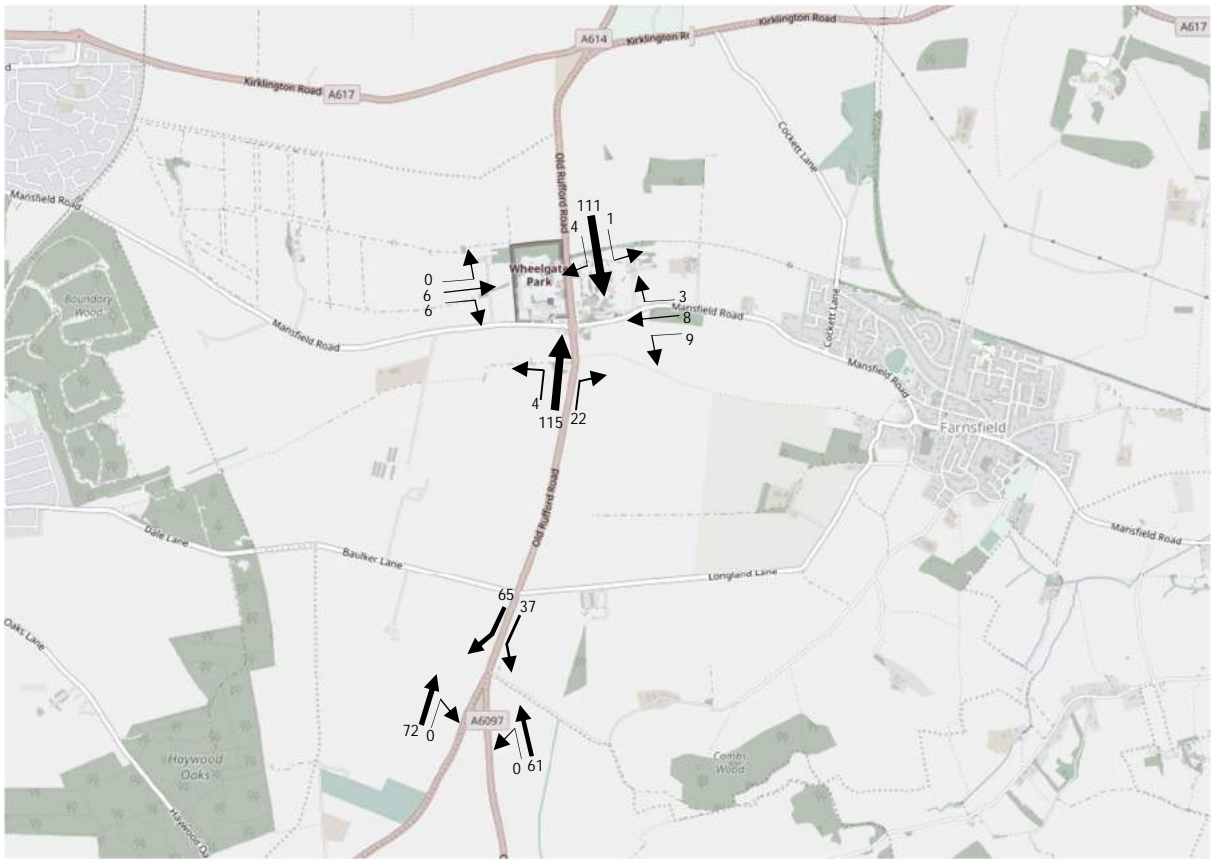




PM Peak (1630 – 1730)

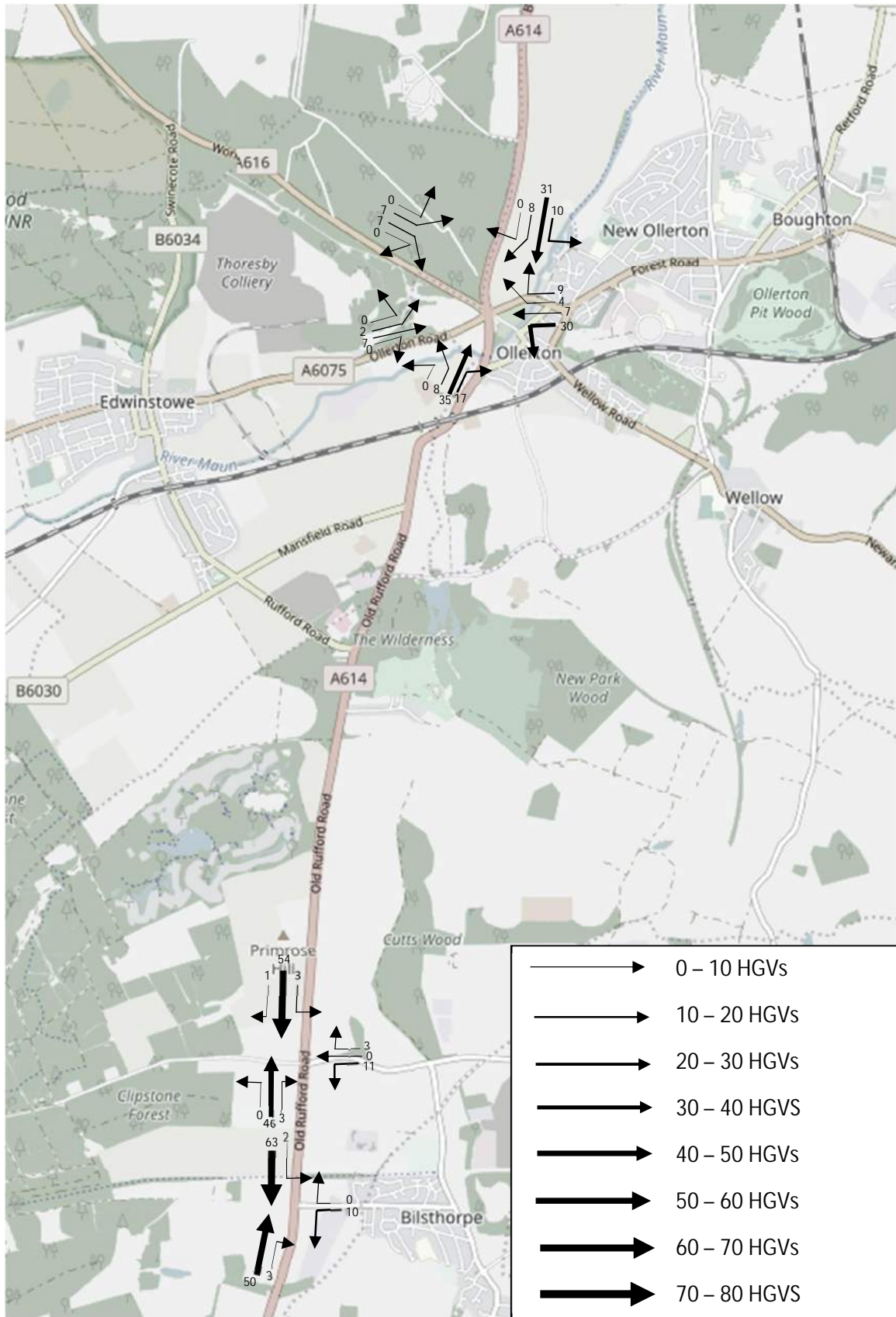




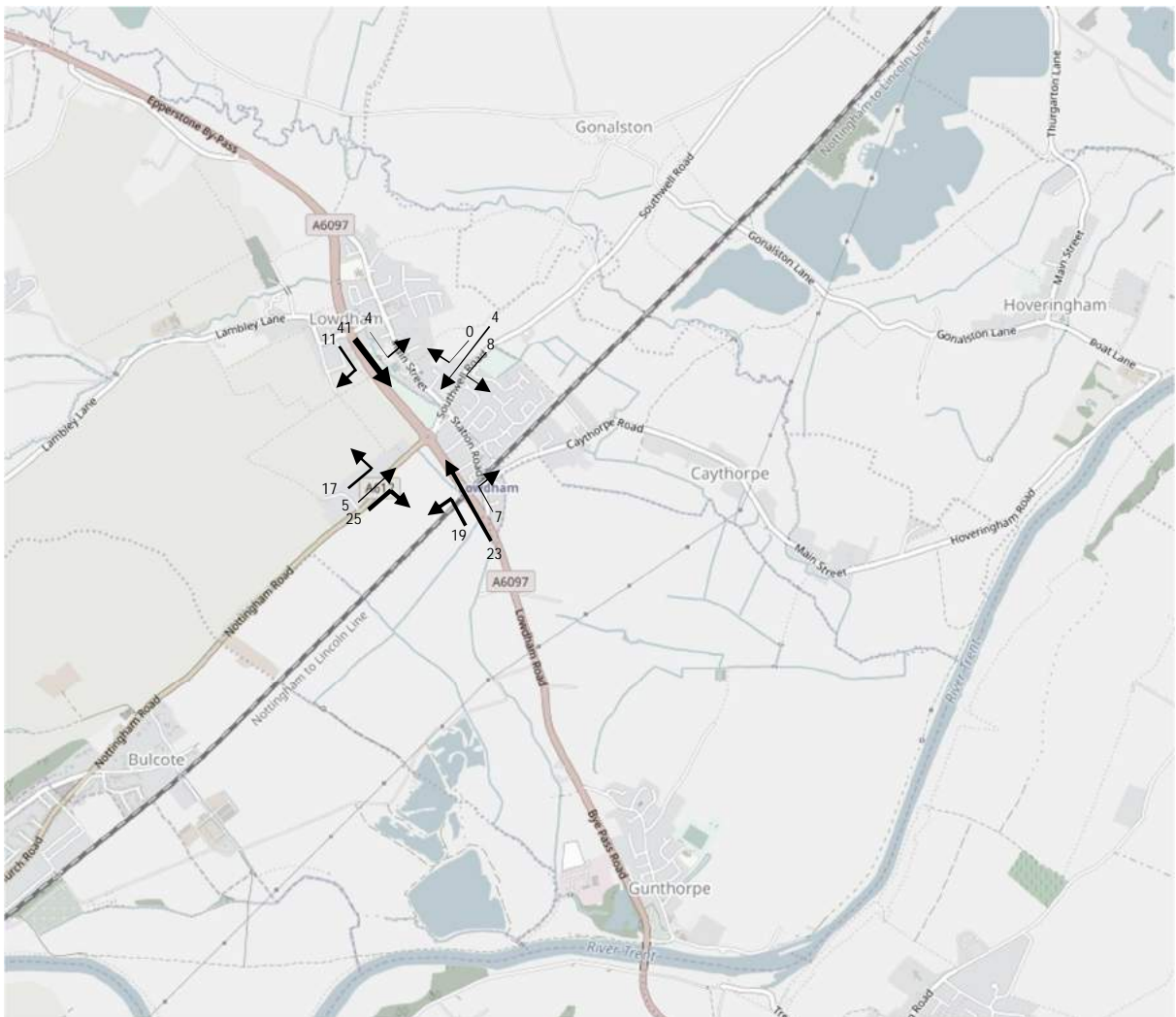


## Desire Line Diagrams – HGVs

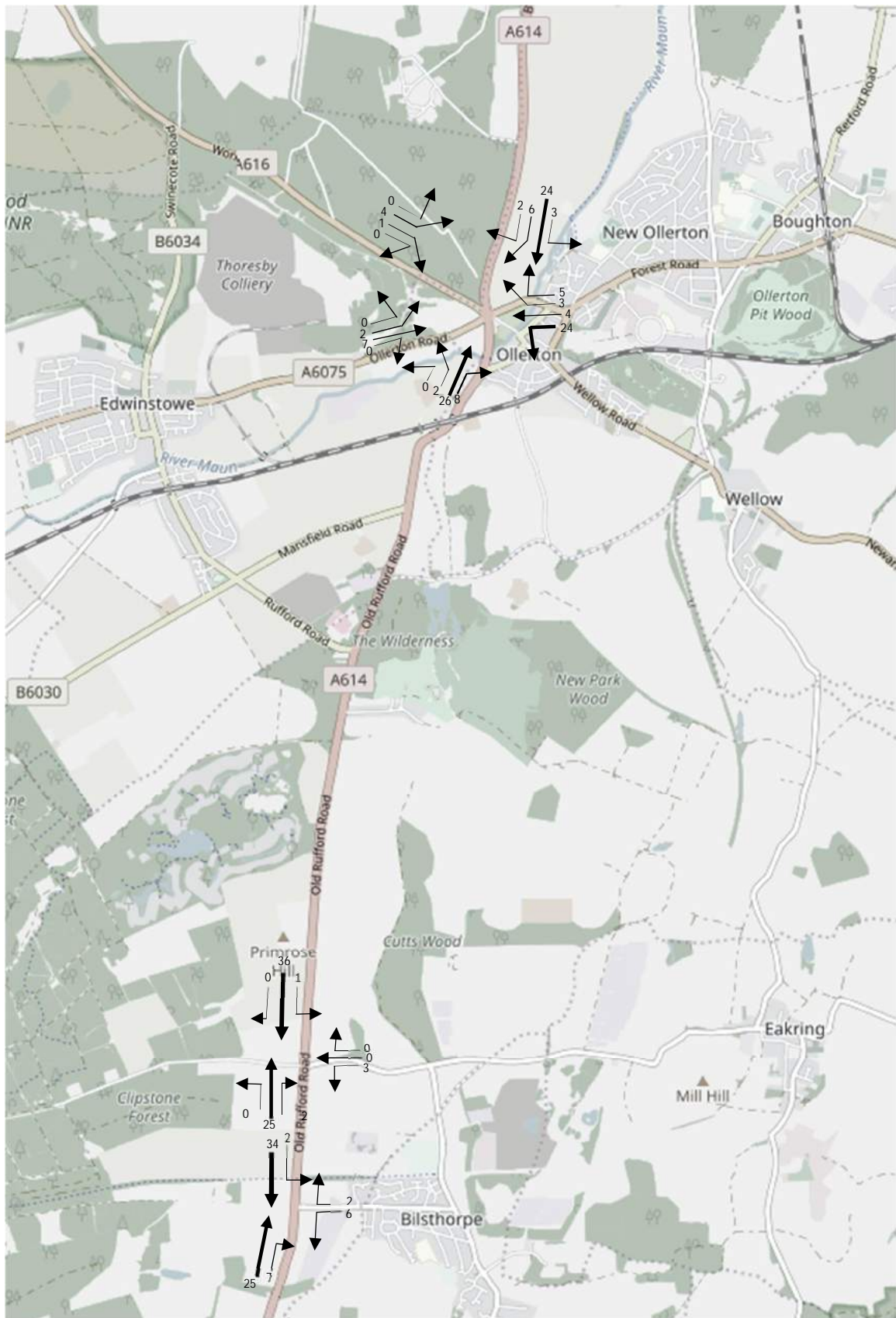
AM Peak (0730 – 0830)



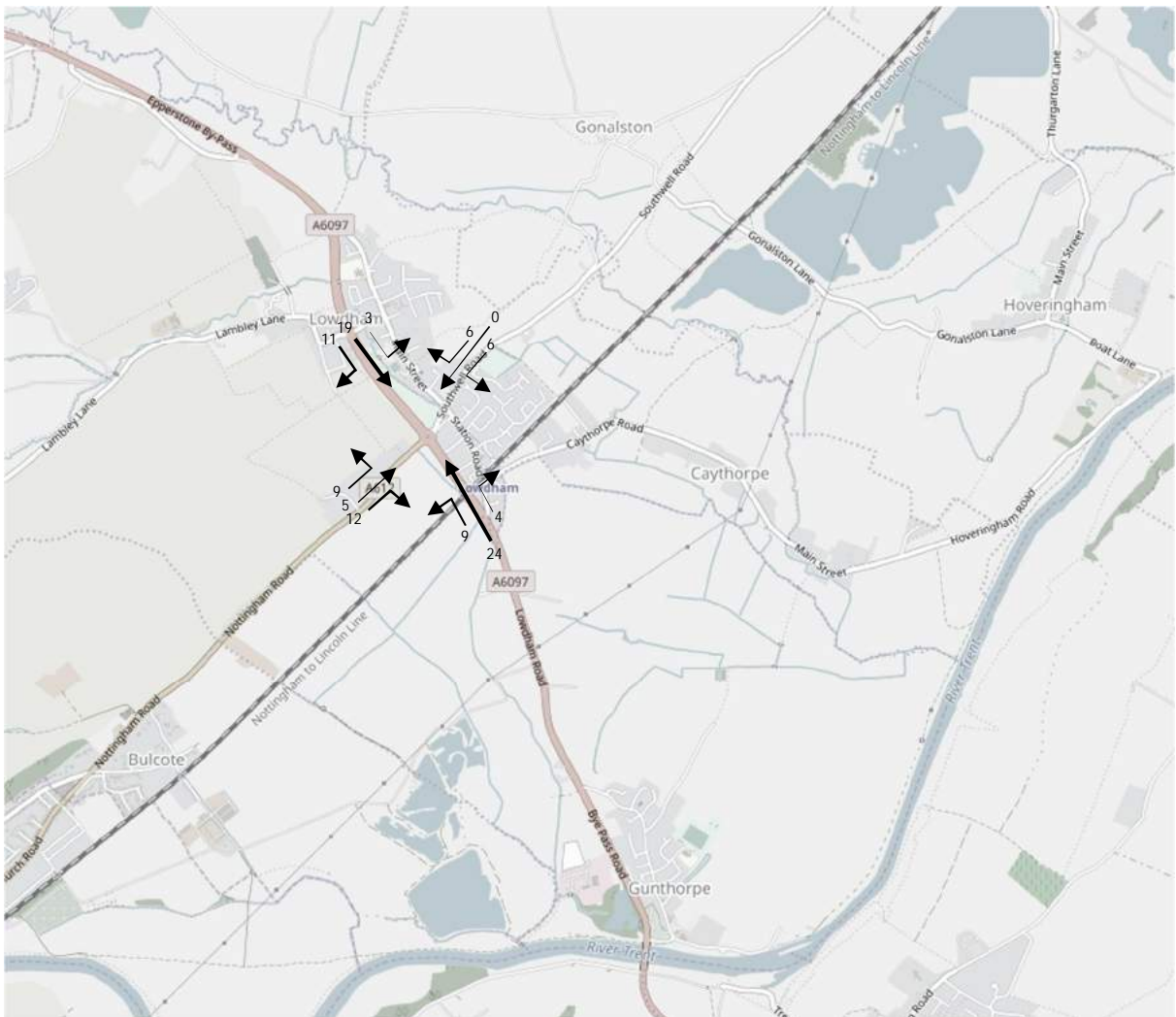




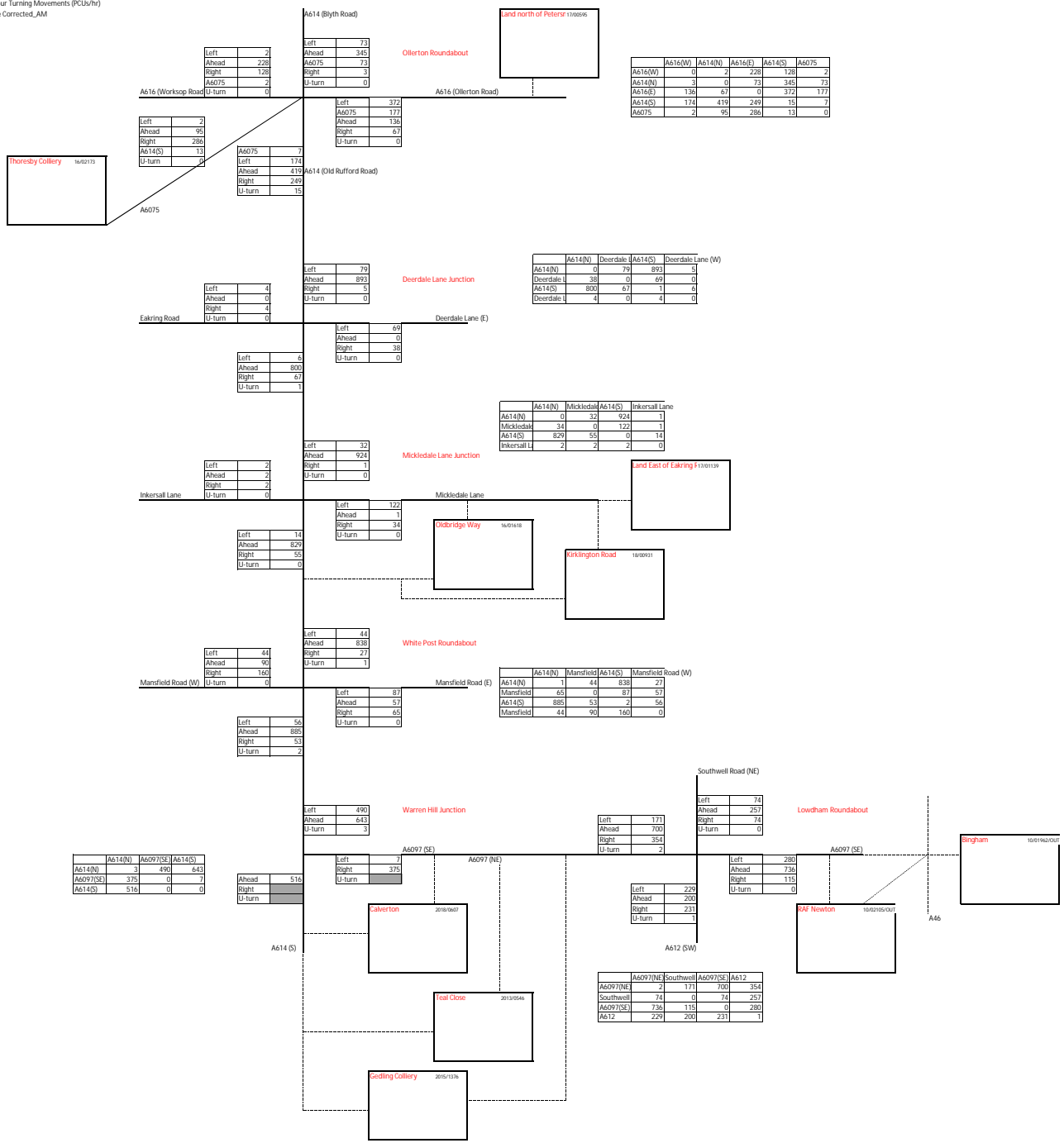
# PM Peak (1630 – 1730)







# Appendix E – Base Year Flows



Left	2
Ahead	228
Right	128
A6075	2
U-turn	0

Left	73
Ahead	345
A6075	73
Right	3
U-turn	0

	A616(W)	A614(N)	A616(E)	A614(S)	A6075
A616(W)	0	2	228	128	2
A614(N)	3	0	73	345	73
A616(E)	134	67	0	372	177
A614(S)	174	419	249	15	7
A6075	2	95	284	13	0

Left	2
Ahead	95
Right	286
A614(S)	13
U-turn	0

Left	372
A6075	177
Ahead	136
Right	67
U-turn	0

	A614(N)	Deerdale	A614(S)	Deerdale Lane (W)
A614(N)	0	79	893	5
Deerdale	38	0	69	0
A614(S)	300	67	1	6
Deerdale	4	0	4	0

Left	4
Ahead	0
Right	4
U-turn	0

Left	79
Ahead	892
Right	5
U-turn	0

	A614(N)	Micklethale	A614(S)	Inkersall Lane
A614(N)	0	32	924	1
Micklethale	34	0	122	1
A614(S)	629	55	0	14
Inkersall L	2	2	2	0

Left	4
Ahead	800
Right	67
U-turn	1

Left	69
Ahead	0
Right	38
U-turn	0

Left	32
Ahead	924
Right	1
U-turn	0

Left	2
Ahead	2
Right	2
U-turn	0

Left	122
Ahead	1
Right	34
U-turn	0

Left	14
Ahead	829
Right	5
U-turn	0

Left	44
Ahead	838
Right	27
U-turn	1

	A614(N)	Mansfield	A614(S)	Mansfield Road (W)
A614(N)	1	44	838	27
Mansfield	65	0	87	57
A614(S)	885	53	2	56
Mansfield	44	90	160	0

Left	44
Ahead	838
Right	27
U-turn	1

Left	87
Ahead	57
Right	65
U-turn	0

Left	44
Ahead	90
Right	160
U-turn	0

Left	54
Ahead	885
Right	33
U-turn	2

Left	74
Ahead	257
Right	16
U-turn	0

Left	490
Ahead	643
U-turn	3

Left	7
Right	375
U-turn	0

Left	171
Ahead	700
Right	354
U-turn	2

Left	290
Ahead	736
Right	115
U-turn	0

	A614(N)	A6097(SE)	A614(S)
A614(N)	3	490	643
A6097(SE)	375	0	7
A614(S)	516	0	0

Left	516
Ahead	0
Right	0
U-turn	0

Left	229
Ahead	200
Right	231
U-turn	1

Left	290
Ahead	736
Right	115
U-turn	0

	A6097(NE)	Southwell	A6097(SE)	A612
A6097(NE)	2	171	700	354
Southwell	74	0	74	257
A6097(SE)	736	115	0	280
A612	229	200	231	1

Left	7
Right	375
U-turn	0

Left	229
Ahead	200
Right	231
U-turn	1

Left	290
Ahead	736
Right	115
U-turn	0

Left	2
Ahead	171
Right	700
U-turn	354

Left	74
Ahead	0
Right	74
U-turn	257

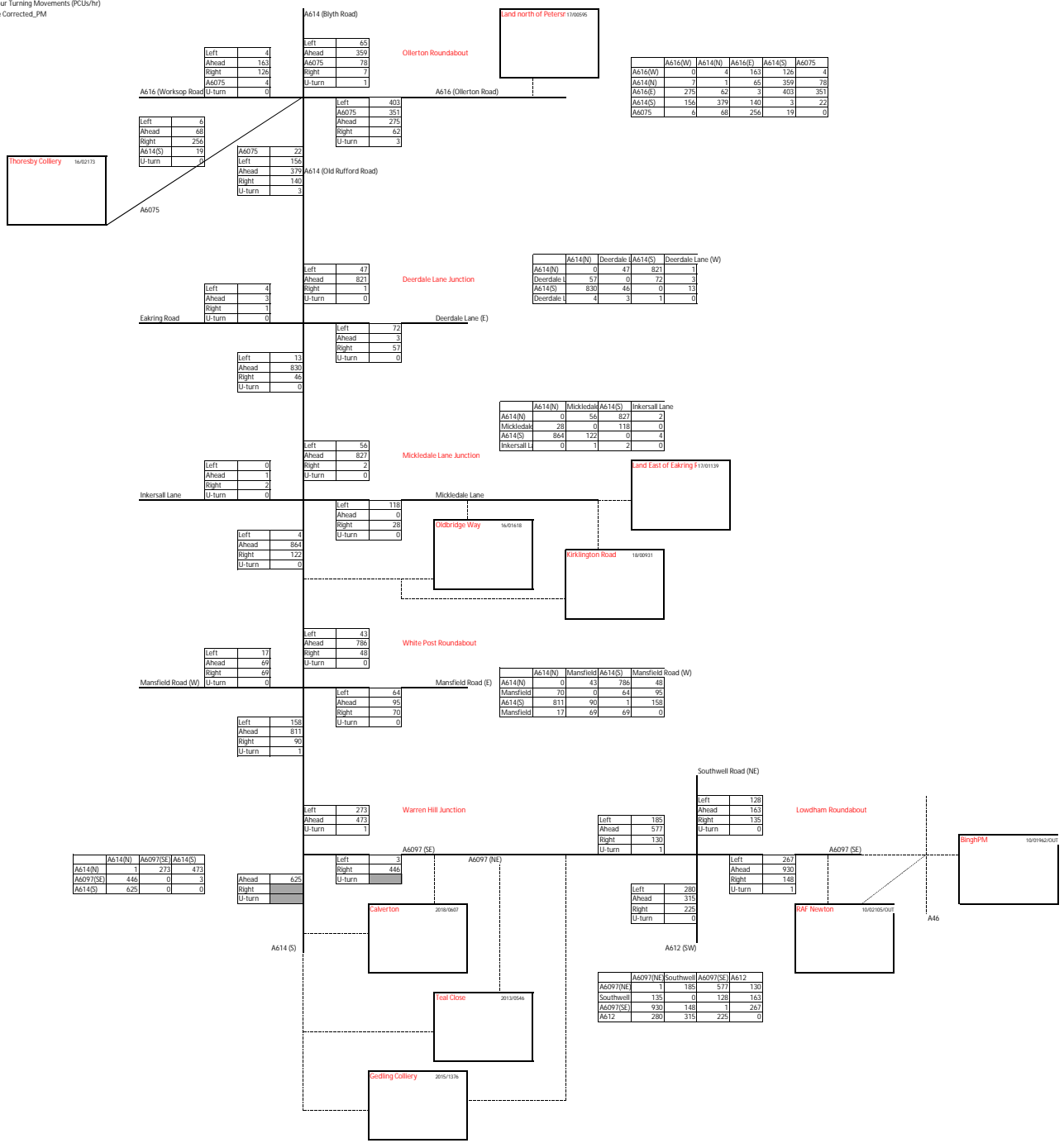
Left	736
Ahead	115
Right	0
U-turn	280

Left	229
Ahead	200
Right	231
U-turn	1

Left	290
Ahead	736
Right	115
U-turn	0

Left	290
Ahead	736
Right	115
U-turn	0





Left	4
Ahead	163
Right	126
A6075	4
U-turn	0

Left	65
Ahead	359
A6075	78
Right	7
U-turn	1

	A616(W)	A614(N)	A616(E)	A614(S)	A6075
A616(W)	0	4	163	126	4
A614(N)	7	1	65	359	78
A616(E)	275	62	3	403	353
A614(S)	156	379	140	3	22
A6075	4	68	256	19	0

Left	6
Ahead	68
Right	256
A614(S)	19
U-turn	0

Left	403
A6075	351
Ahead	275
Right	62
U-turn	3

A6075	27
Left	156
Ahead	379
Right	140
U-turn	3

	A614(N)	Deerdale	A614(E)	Deerdale Lane (W)
A614(N)	0	47	821	1
Deerdale	57	0	72	3
A614(E)	830	46	0	13
Deerdale	4	3	1	0

Left	4
Ahead	3
Right	1
U-turn	0

Left	72
Ahead	3
Right	57
U-turn	0

	A614(N)	Mickledale	A614(S)	Inkersall Lane
A614(N)	0	56	827	2
Mickledale	28	0	118	0
A614(S)	864	122	0	4
Inkersall L	0	1	2	0

Left	4
Ahead	3
Right	1
U-turn	0

Left	13
Ahead	830
Right	46
U-turn	0

Left	56
Ahead	827
Right	2
U-turn	0

Left	0
Ahead	1
Right	2
U-turn	0

Left	118
Ahead	0
Right	28
U-turn	0

Left	4
Ahead	864
Right	122
U-turn	0

Left	43
Ahead	786
Right	48
U-turn	0

	A614(N)	Mansfield	A614(S)	Mansfield Road (W)
A614(N)	0	43	786	48
Mansfield	70	0	64	95
A614(S)	811	96	1	158
Mansfield	17	69	69	0

Left	17
Ahead	69
Right	69
U-turn	0

Left	64
Ahead	95
Right	70
U-turn	0

Left	158
Ahead	811
Right	96
U-turn	1

Left	273
Ahead	473
U-turn	1

Left	185
Ahead	577
Right	130
U-turn	1

Left	128
Ahead	163
Right	135
U-turn	0

	A614(N)	A6097(SE)	A614(S)
A614(N)	1	273	473
A6097(SE)	446	0	3
A614(S)	625	0	0

Ahead	625
Right	3
U-turn	1

Left	3
Right	446
U-turn	1

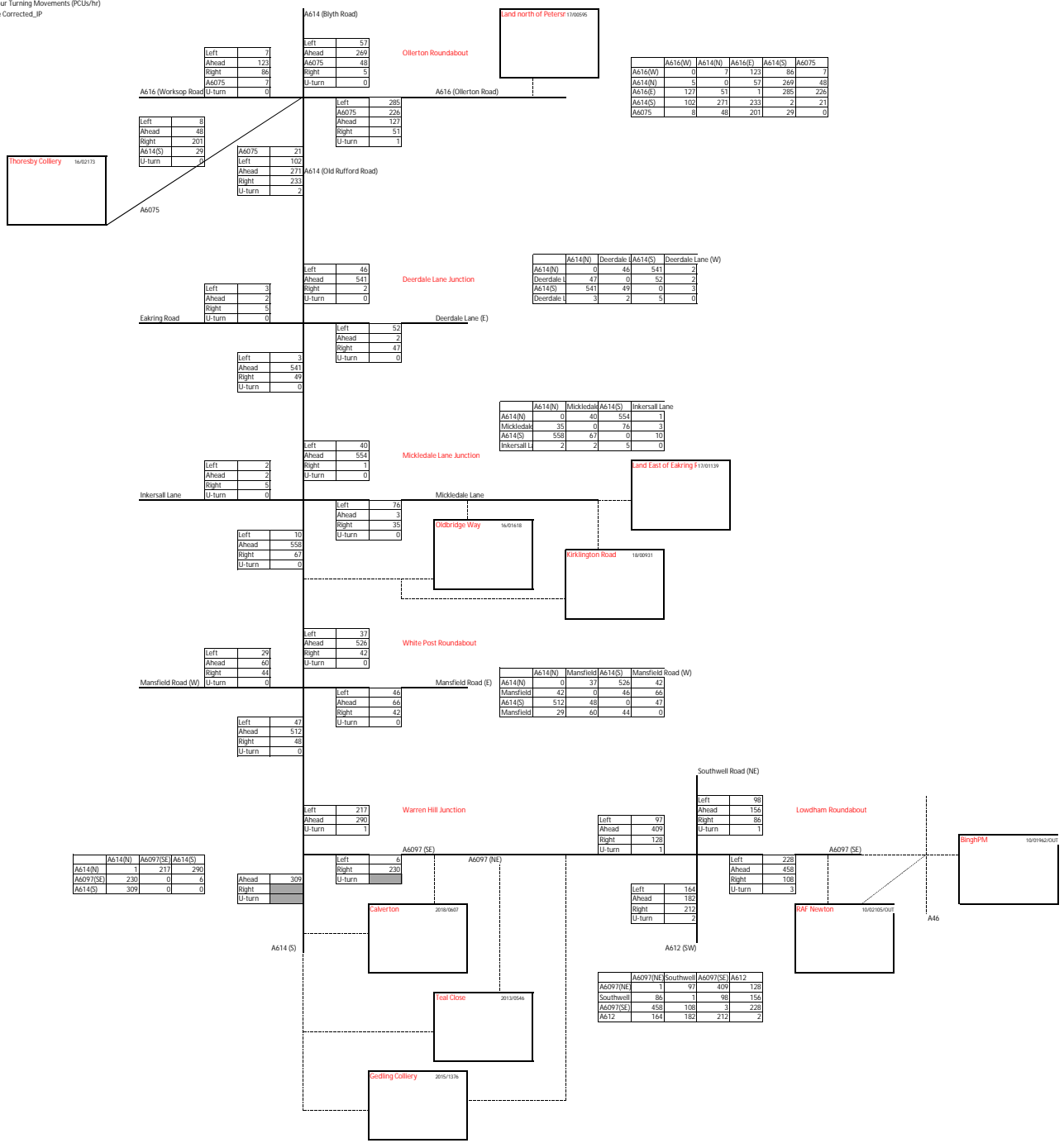
Left	280
Ahead	315
Right	225
U-turn	0

Left	257
Ahead	930
Right	148
U-turn	1

	A6097(NE)	Southwell	A6097(SE)	A612
A6097(NE)	1	185	577	130
Southwell	135	0	128	163
A6097(SE)	930	148	1	267
A612	280	315	225	0

Left	280
Ahead	315
Right	225
U-turn	0

Left	257
Ahead	930
Right	148
U-turn	1



Left	7
Ahead	123
Right	86
A6075	7
U-turn	0

Left	57
Ahead	269
A6075	48
Right	5
U-turn	0

A616(W)	A614(N)	A616(E)	A614(S)	A6075
0	7	123	86	7
5	0	57	269	48
123	51	1	285	226
102	271	233	2	21
8	48	201	29	0

Left	8
Ahead	48
Right	201
A614(S)	29
U-turn	0

Left	285
A6075	226
Ahead	127
Right	51
U-turn	1

A6075	21
Left	102
Ahead	271
Right	233
U-turn	2

A614(N)	Deerdale	A614(S)	Deerdale Lane (W)
0	46	541	2
43	0	52	2
541	49	0	3
3	2	5	0

Left	3
Ahead	2
Right	5
U-turn	0

Left	52
Ahead	2
Right	47
U-turn	0

A614(N)	Micklethale	A614(S)	Inkersall Lane
0	40	554	1
43	0	76	3
554	62	0	10
2	2	5	0

Left	3
Ahead	541
Right	49
U-turn	0

Left	40
Ahead	554
Right	1
U-turn	0

Left	2
Ahead	2
Right	5
U-turn	0

Left	76
Ahead	3
Right	35
U-turn	0

Left	10
Ahead	558
Right	47
U-turn	0

Left	29
Ahead	66
Right	44
U-turn	0

Left	37
Ahead	526
Right	42
U-turn	0

A614(N)	Manfield	A614(S)	Manfield Road (W)
0	37	526	42
42	0	46	66
512	48	0	47
29	60	44	0

Left	47
Ahead	512
Right	48
U-turn	0

Left	46
Ahead	66
Right	42
U-turn	0

A614(N)	A6097(SE)	A614(S)
1	217	290
230	0	6
309	0	0

Left	4
Right	230
Ahead	309
U-turn	0

Left	4
Right	230
Ahead	309
U-turn	0

Left	97
Ahead	409
Right	128
U-turn	1

Left	98
Ahead	156
Right	86
U-turn	1

Left	164
Ahead	182
Right	212
U-turn	2

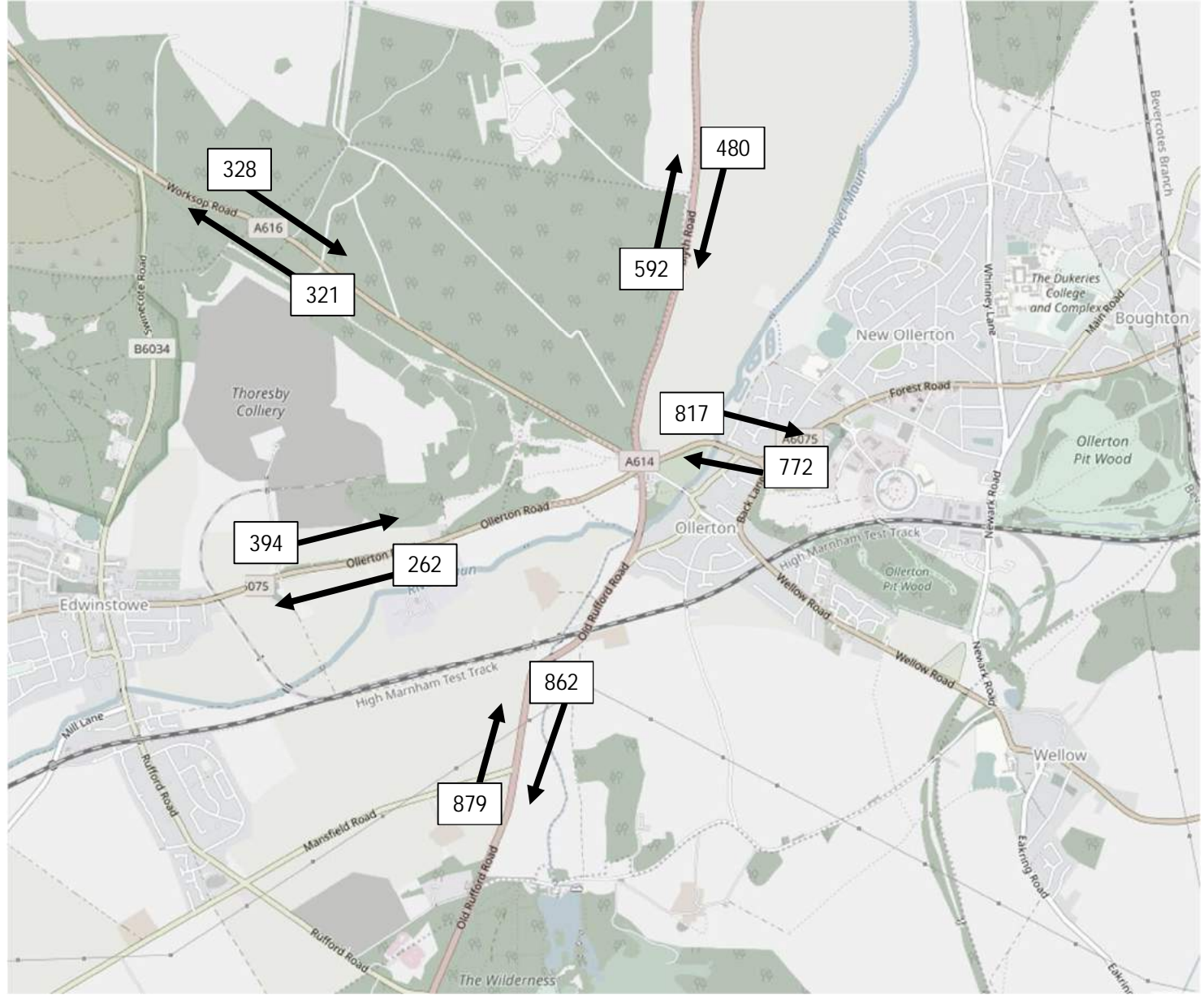
Left	228
Ahead	458
Right	108
U-turn	3

A6097(NE)	Southwell	A6097(SE)	A612
1	97	409	128
86	1	98	156
458	108	3	228
164	182	212	2

# Appendix F – Base Year Turning Movements by Vehicle Type

Ollerton - Baseline  
Traffic Flows –  
PCUs

AM Peak (0730 –  
0830)



Deerdale Lane -  
Baseline Traffic  
Flows – PCUs

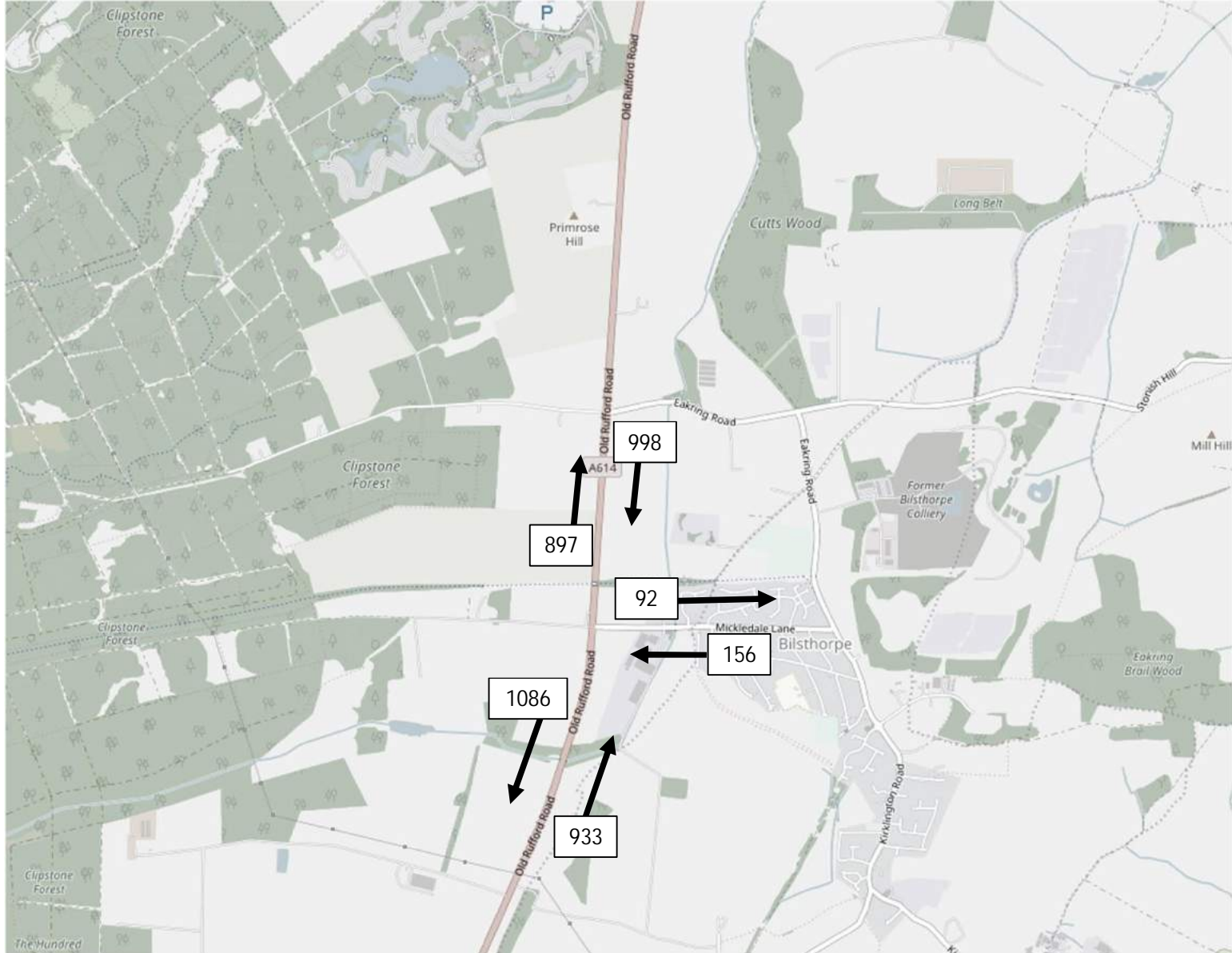
AM Peak (0730 –  
0830)





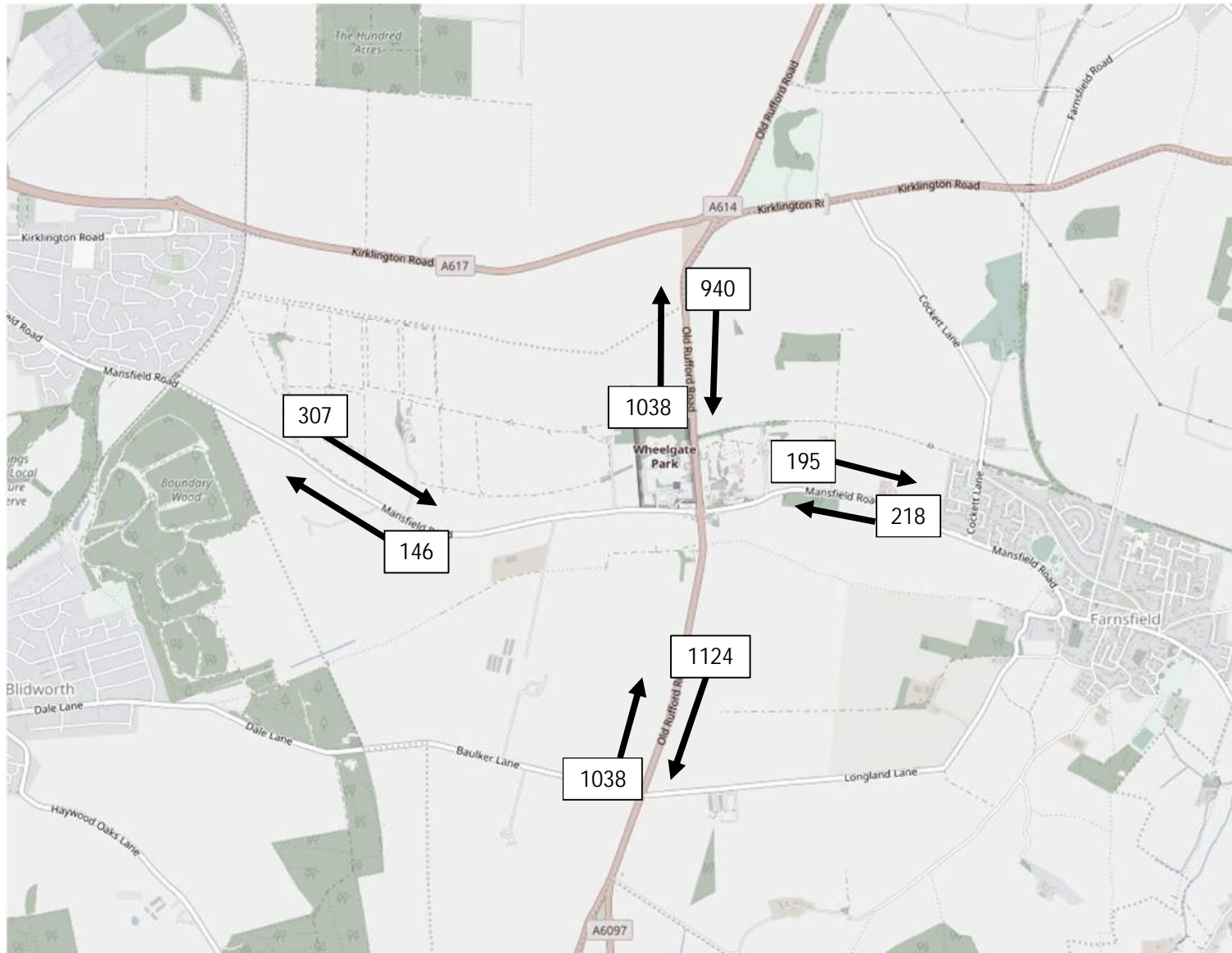
Mickledale Lane -  
Baseline Traffic  
Flows – PCUs

AM Peak (0730 –  
0830)



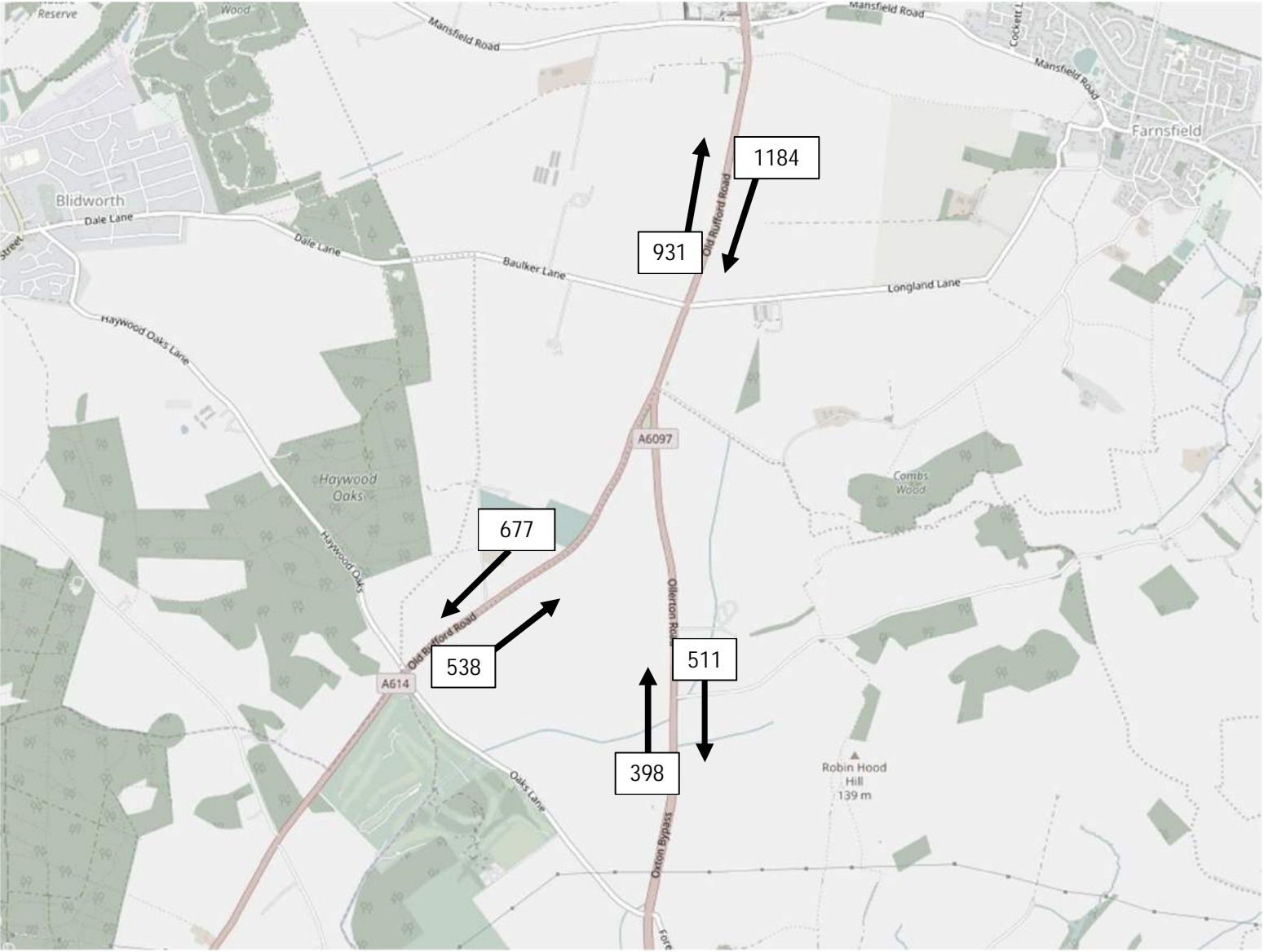
# White Post - Baseline Traffic Flows – PCUs

AM Peak (0730 –  
0830)



Warren Hill -  
Baseline Traffic  
Flows – PCUs

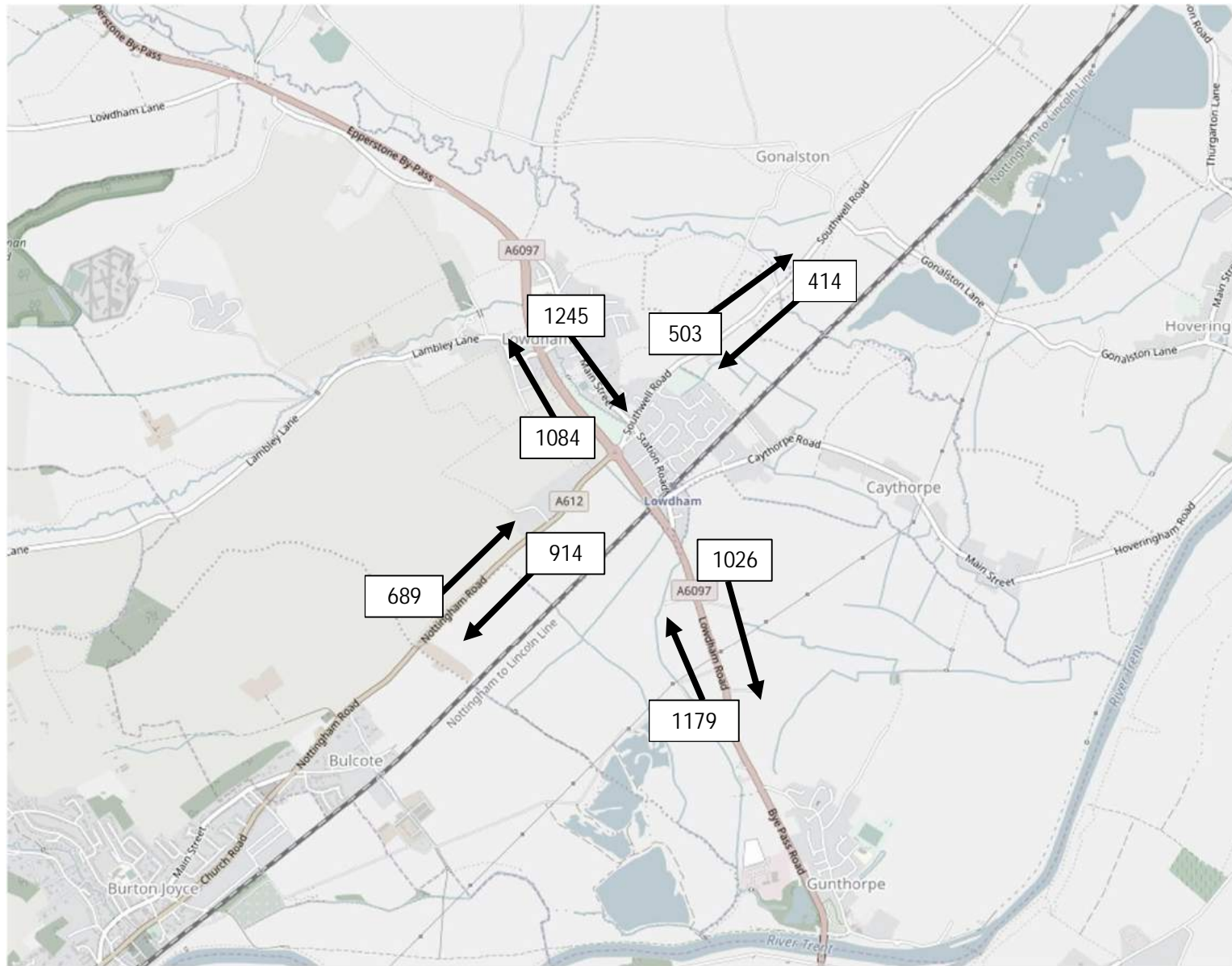
AM Peak (0730 –  
0830)





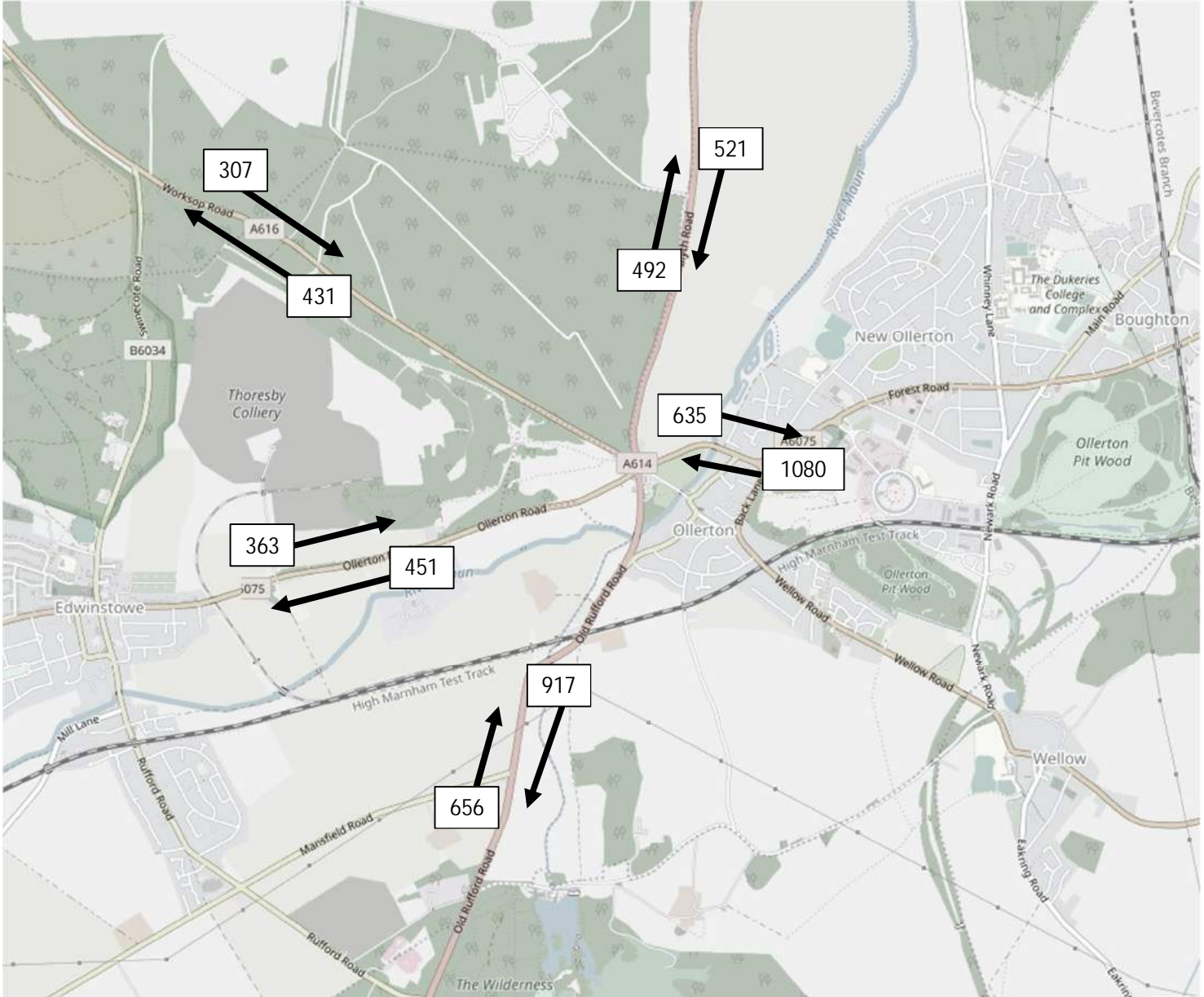
# Lowdham - Baseline Traffic Flows – PCUs

AM Peak (0730 –  
0830)



Ollerton - Baseline  
Traffic Flows –  
PCUs

PM Peak (1630 –  
1730)





Deerdale Lane -  
Baseline Traffic  
Flows – PCUs

PM Peak (1630 –  
1730)



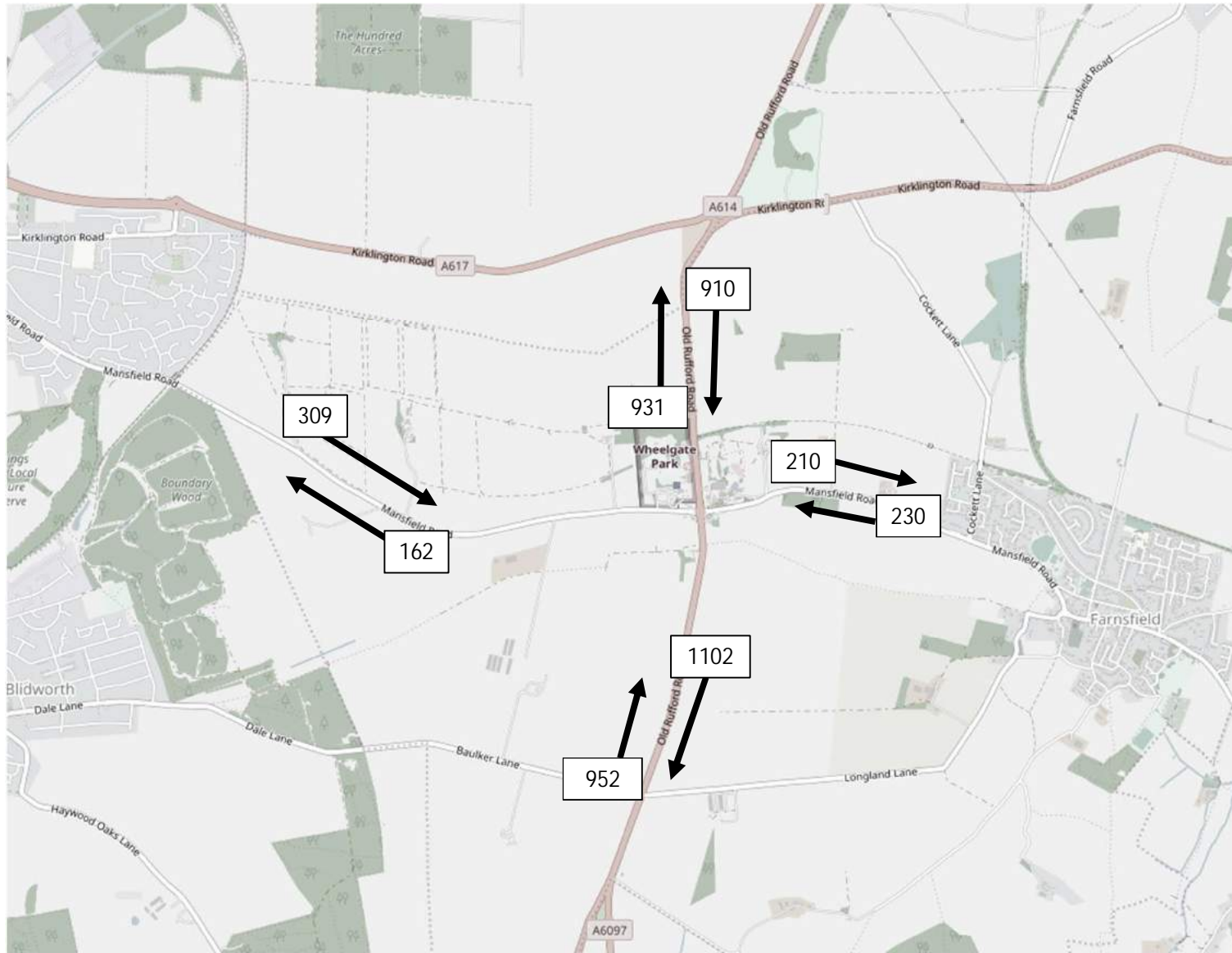
Mickledale Lane -  
Baseline Traffic  
Flows – PCUs

PM Peak (1630 –  
1730)



# White Post - Baseline Traffic Flows – PCUs

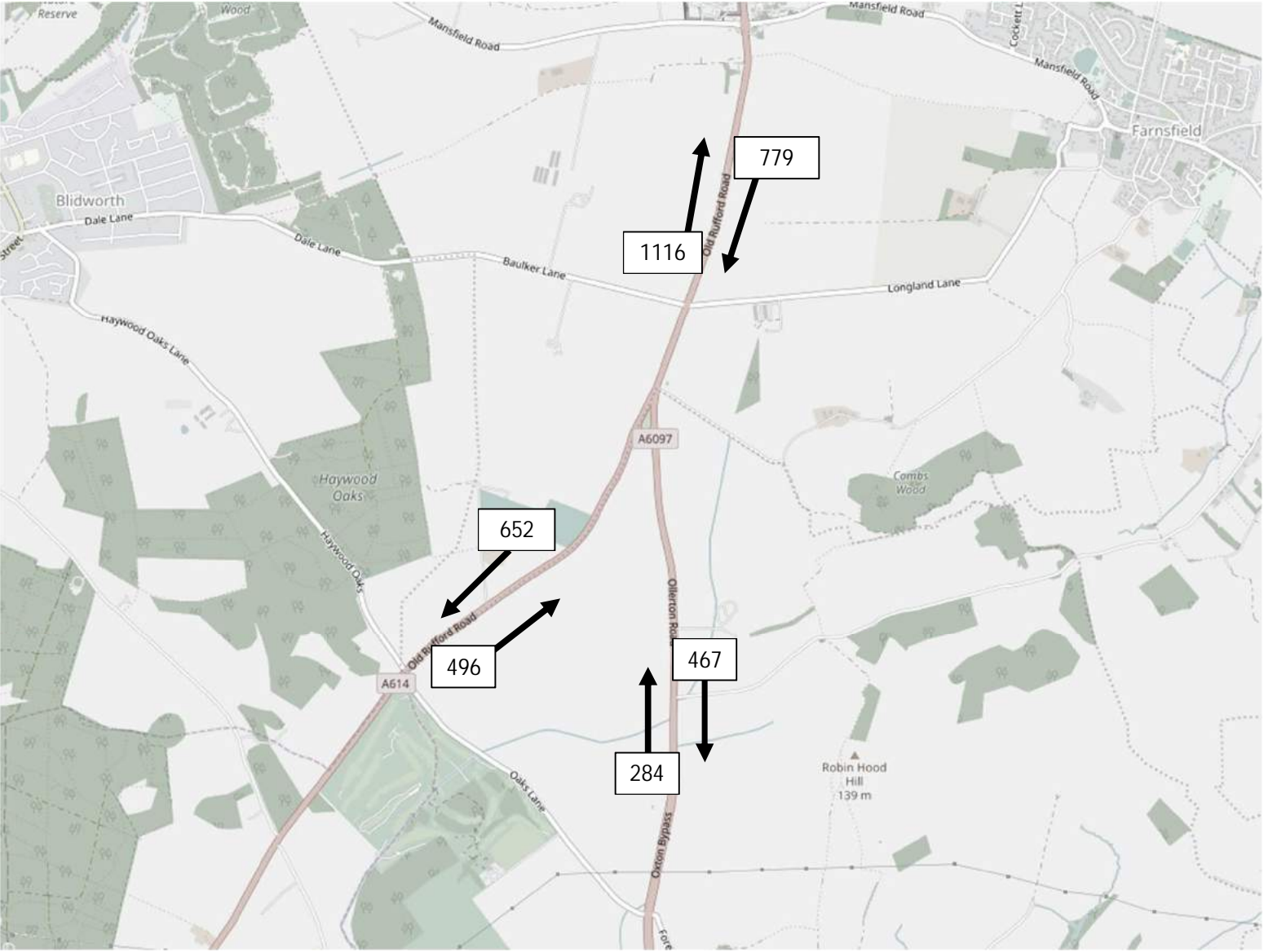
PM Peak (1630 –  
1730)





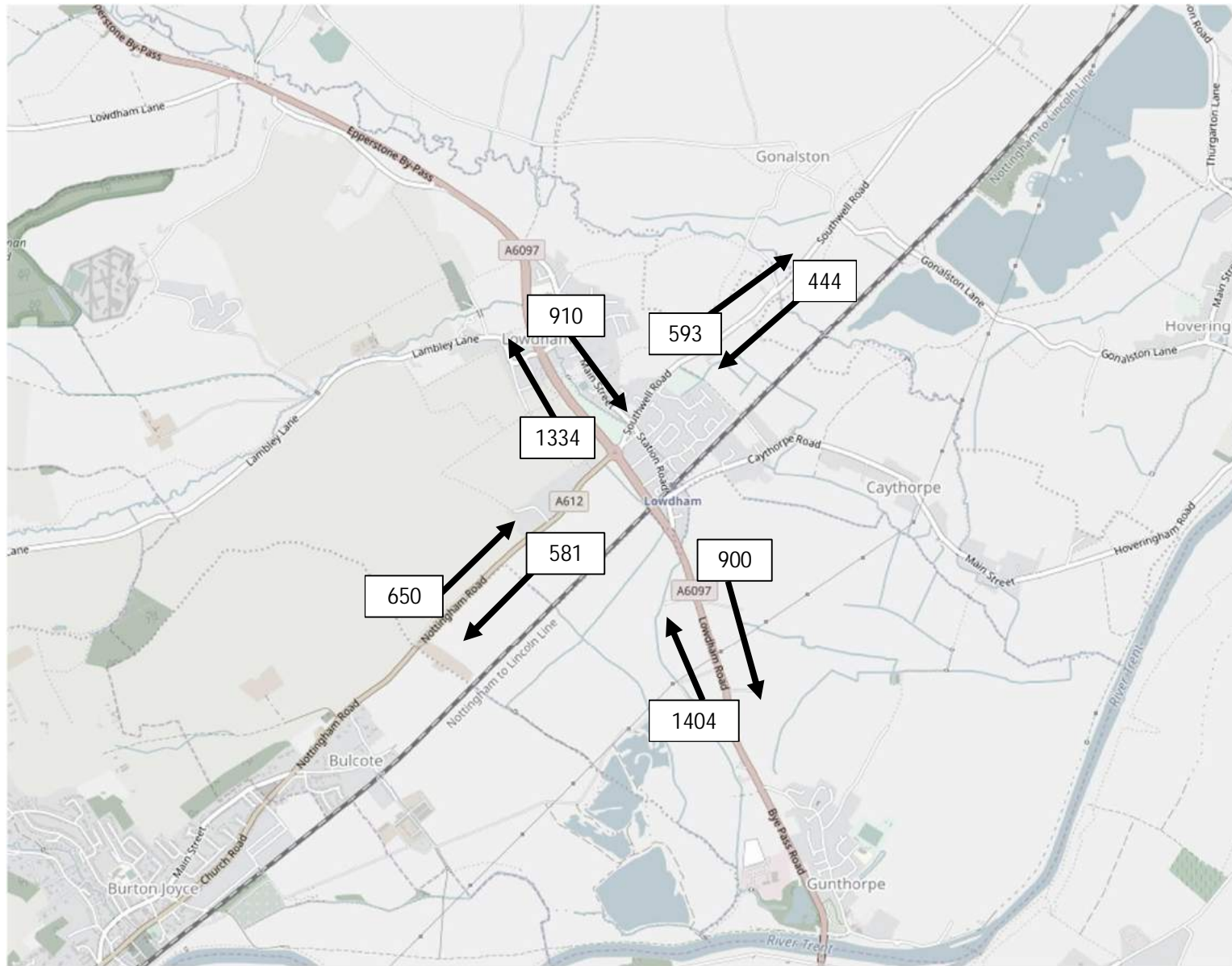
Warren Hill -  
Baseline Traffic  
Flows – PCUs

PM Peak (1630 –  
1730)



# Lowdham - Baseline Traffic Flows – PCUs

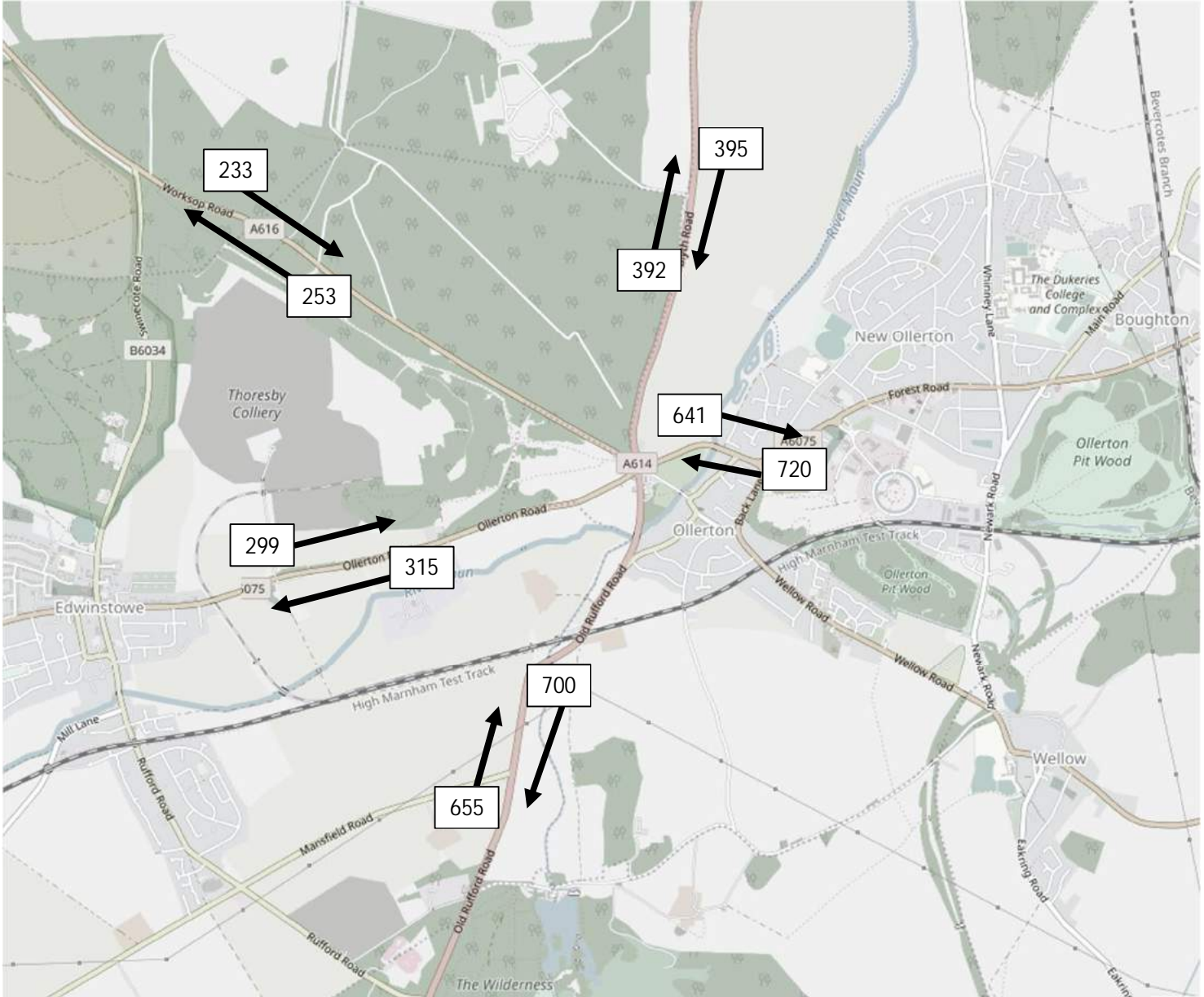
PM Peak (1630 –  
1730)





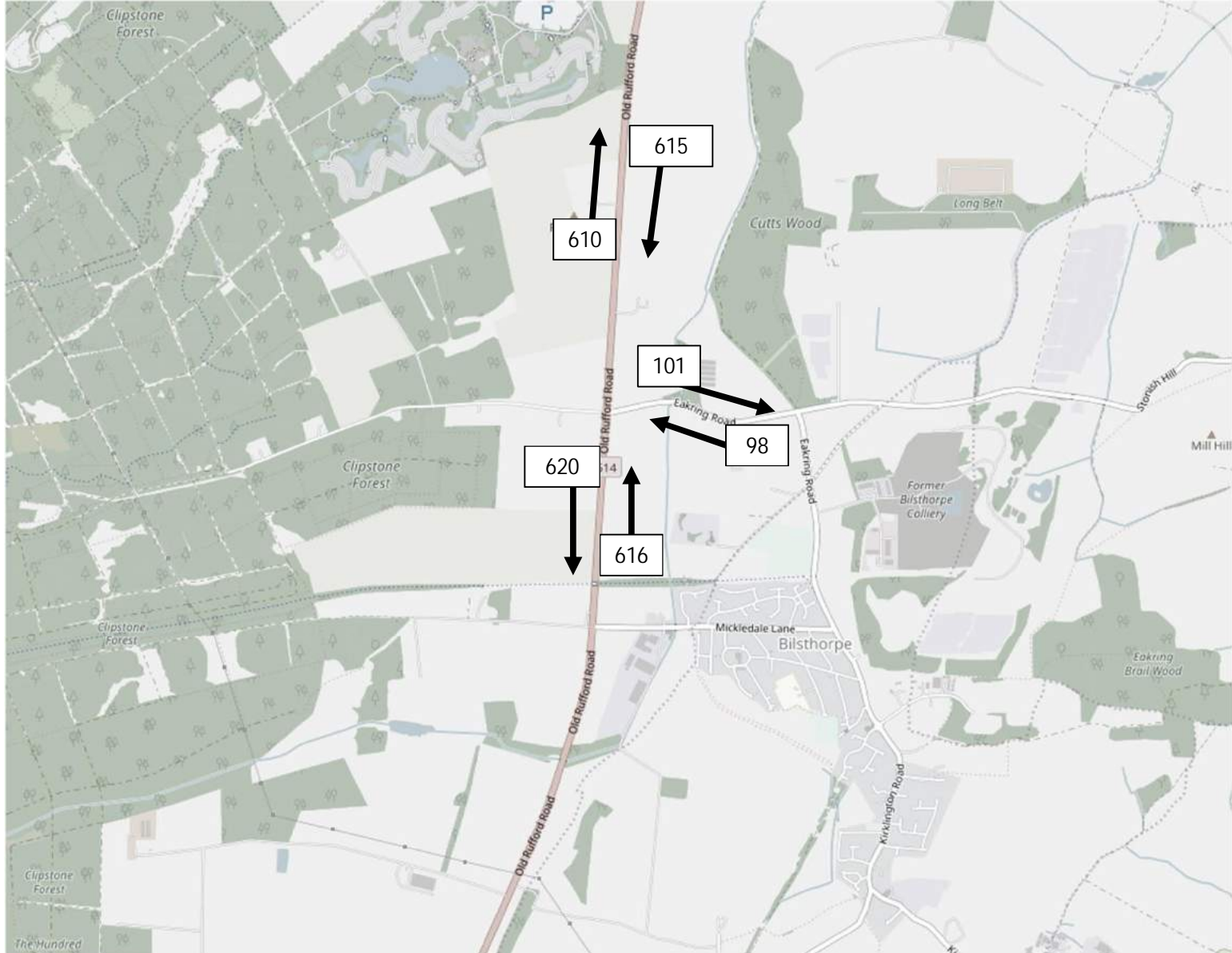
Ollerton - Baseline  
Traffic Flows –  
PCUs

IP Peak (1000 –  
1600 Average)



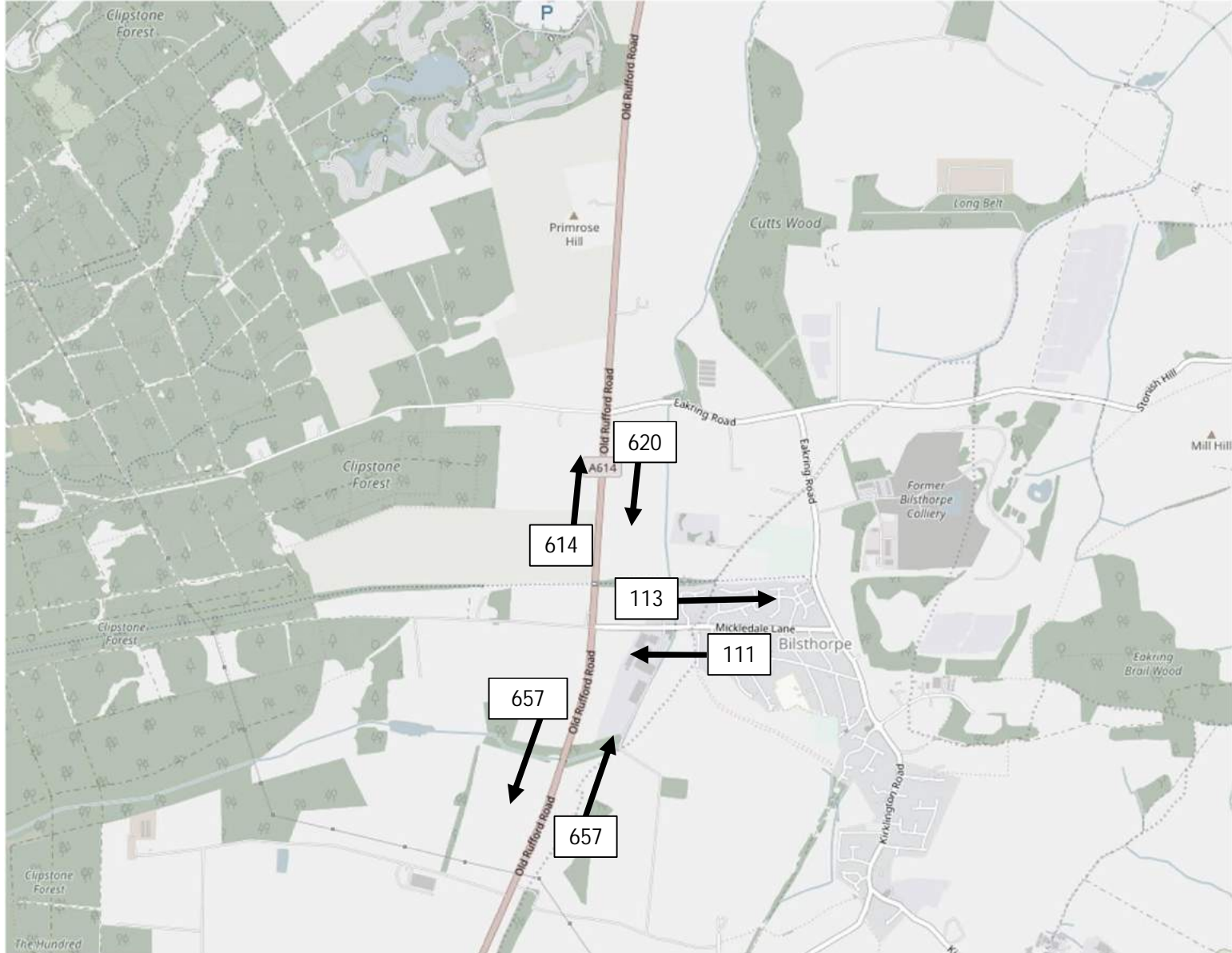
Deerdale Lane -  
Baseline Traffic  
Flows – PCUs

IP Peak (1000 –  
1600 Average)



Mickledale Lane -  
Baseline Traffic  
Flows – PCUs

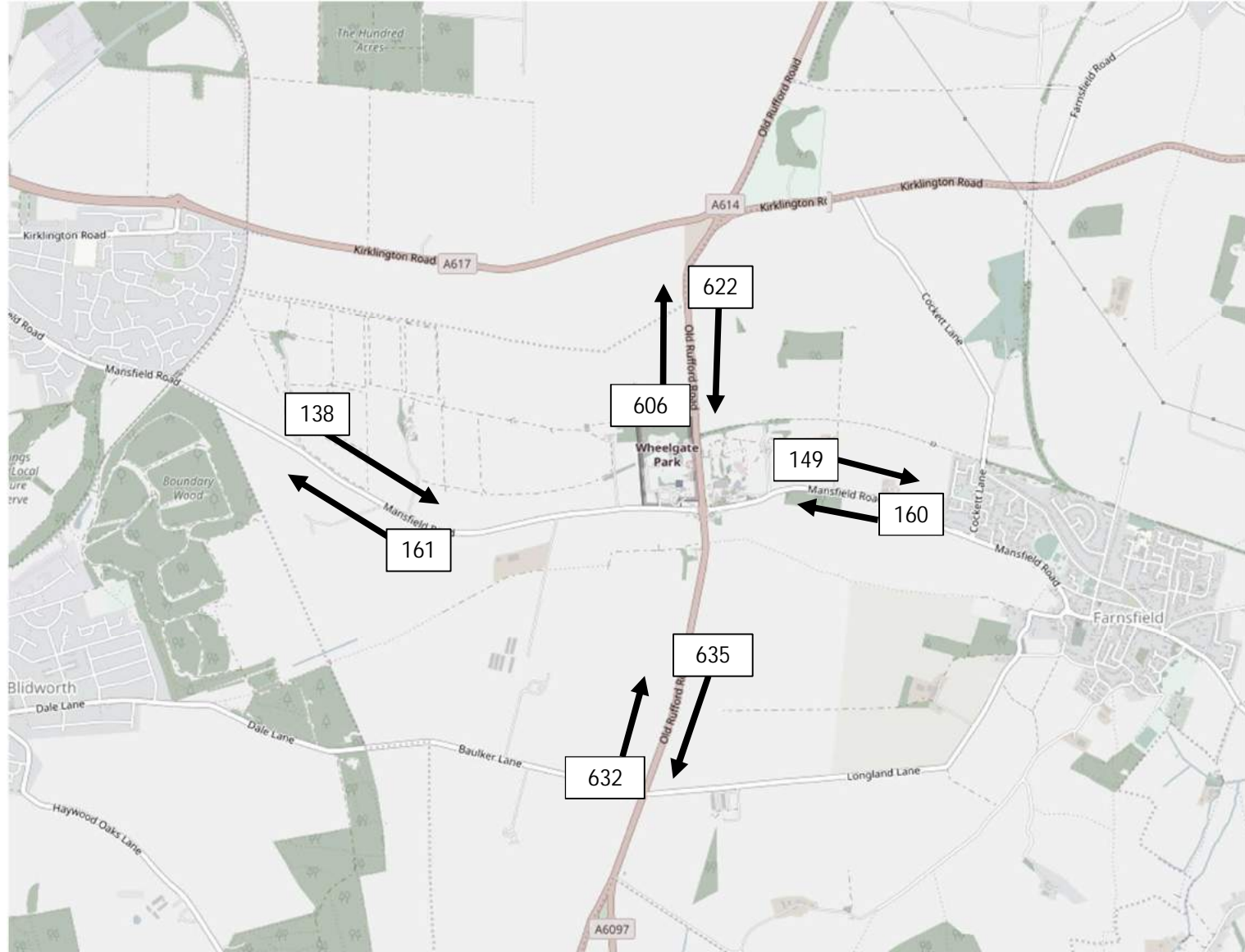
IP Peak (1000 –  
1600 Average)





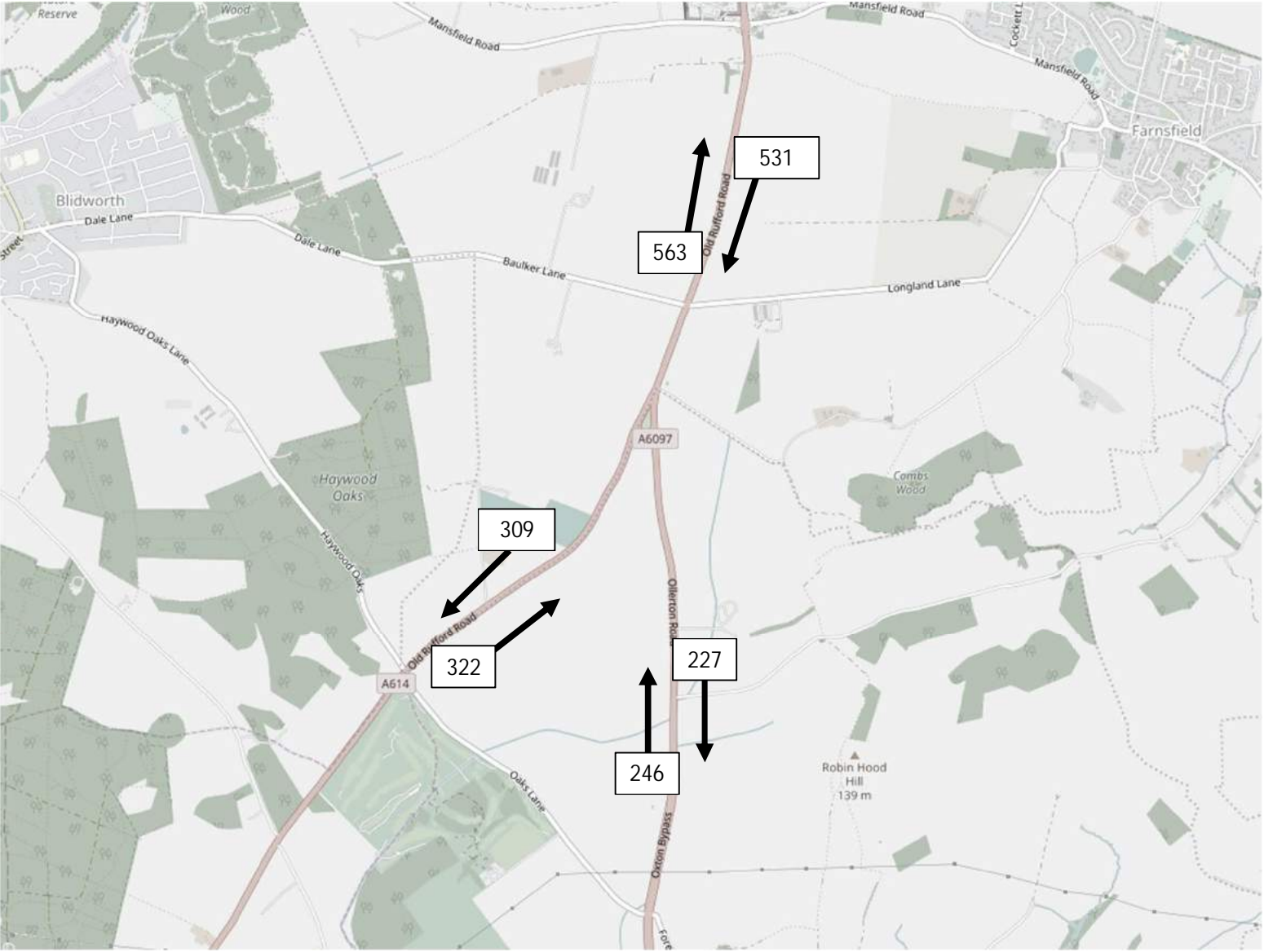
White Post -  
Baseline Traffic  
Flows – PCUs

IP Peak (1000 –  
1600 Average)



Warren Hill -  
Baseline Traffic  
Flows – PCUs

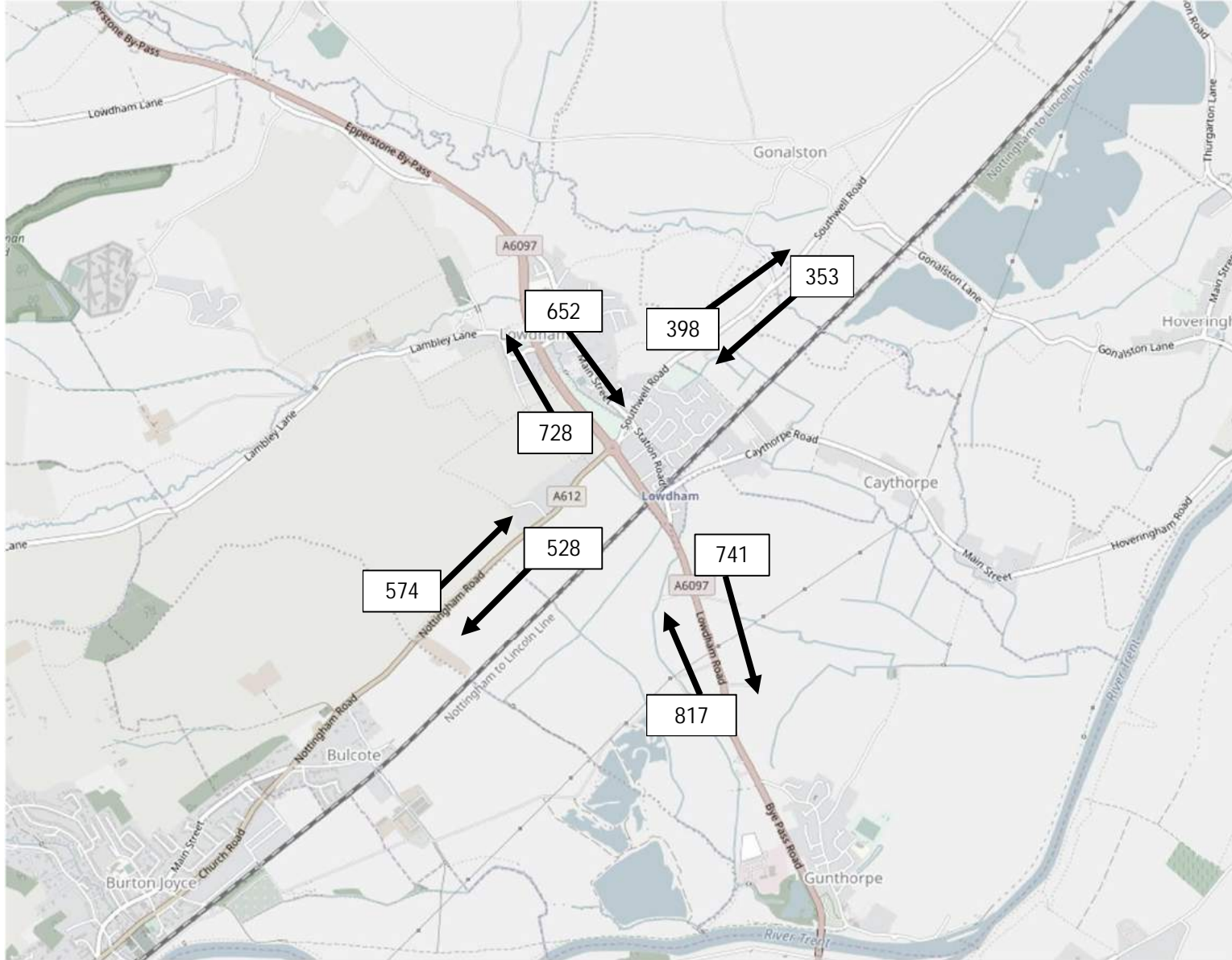
IP Peak (1000 –  
1600 Average)





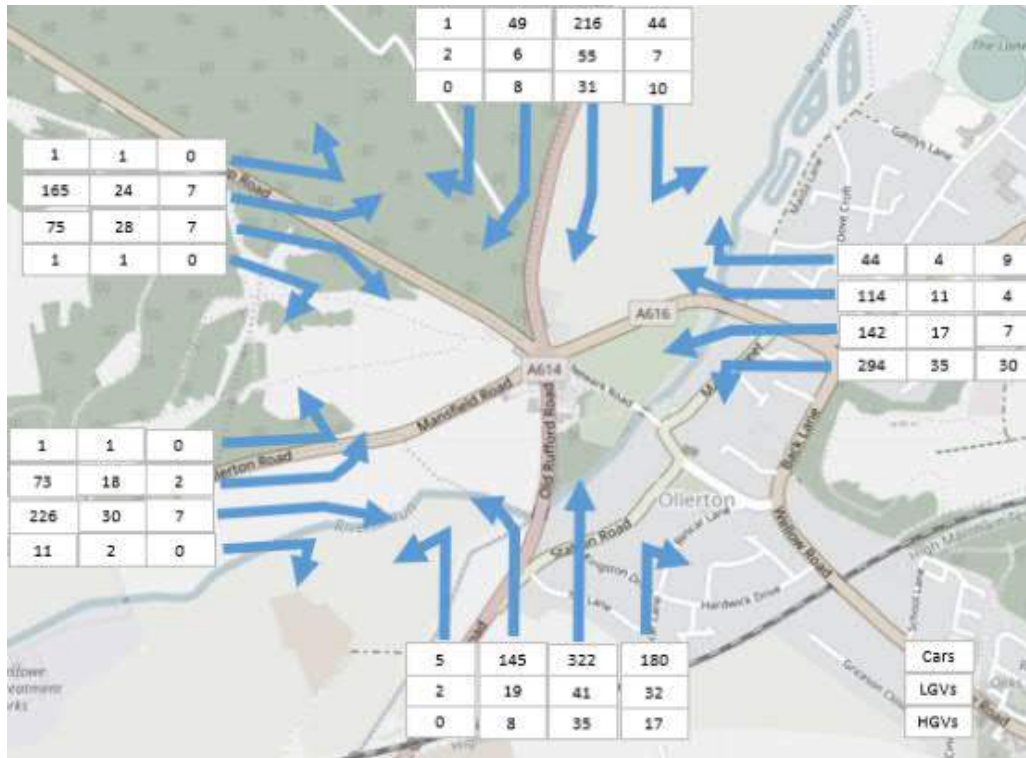
Lowdham -  
Baseline Traffic  
Flows – PCUs

IP Peak (1000 –  
1600 Average)

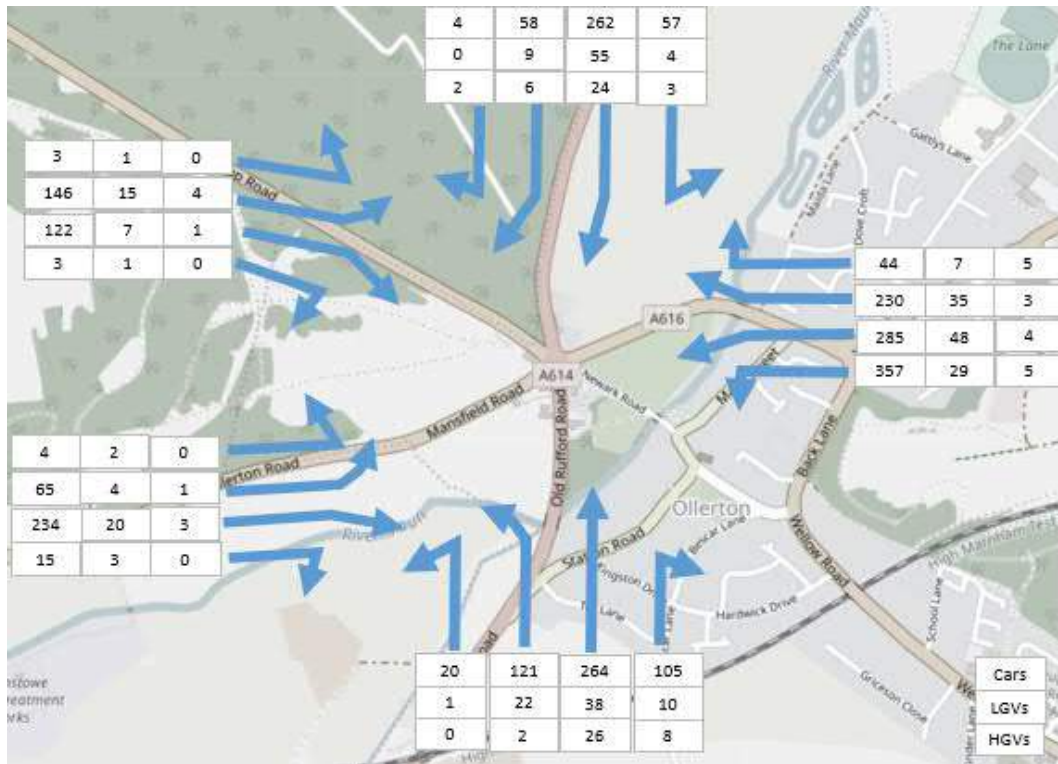


# Base Year turning movements by vehicle type

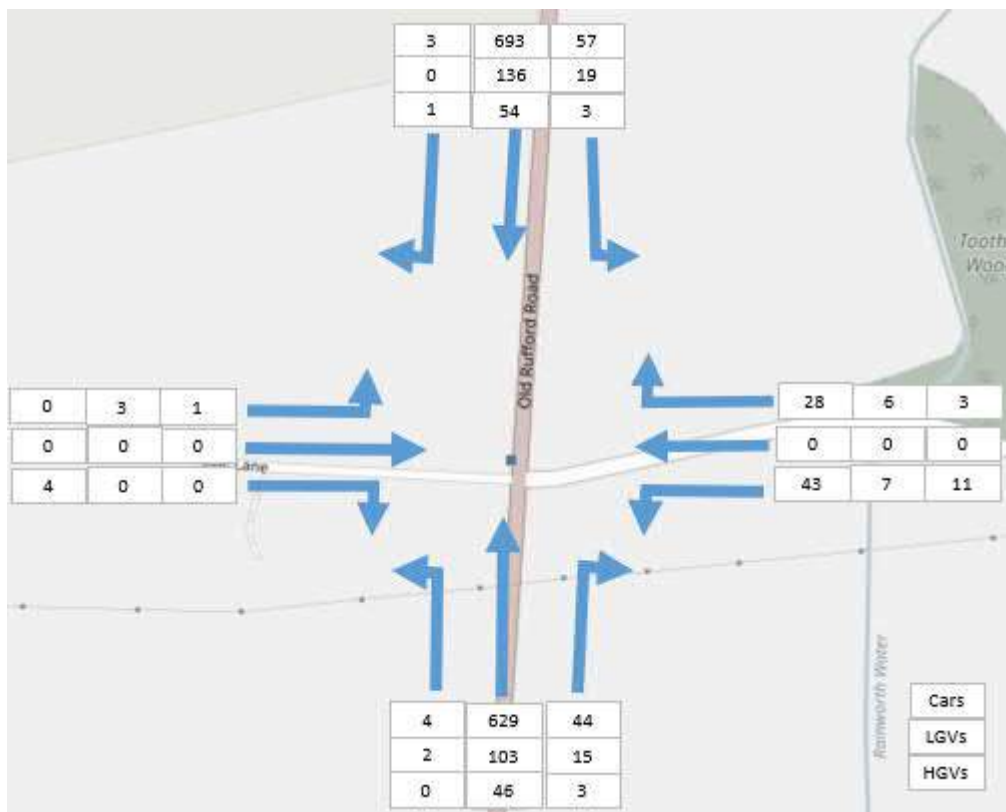
## AM Ollerton



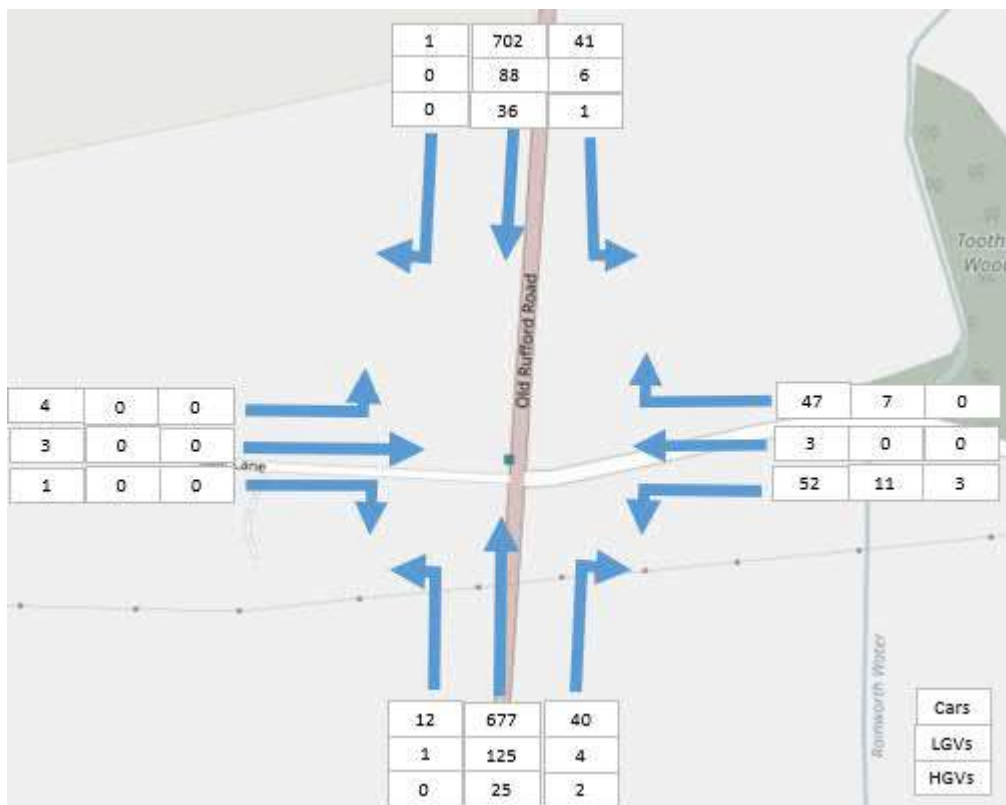
## PM Ollerton



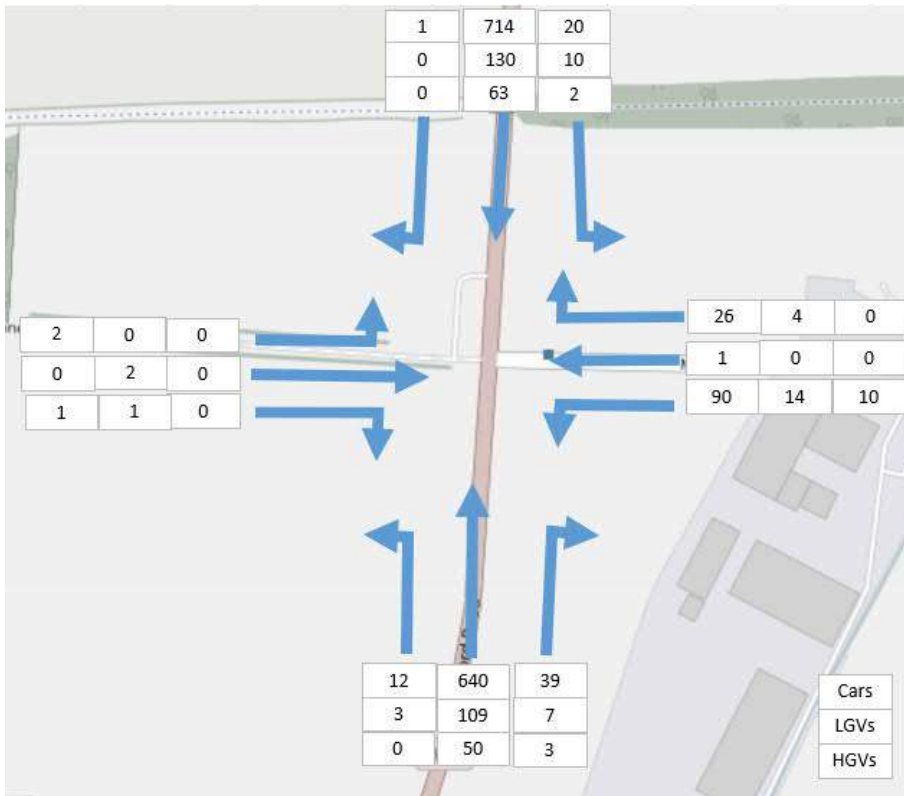
### AM Deerdale Lane



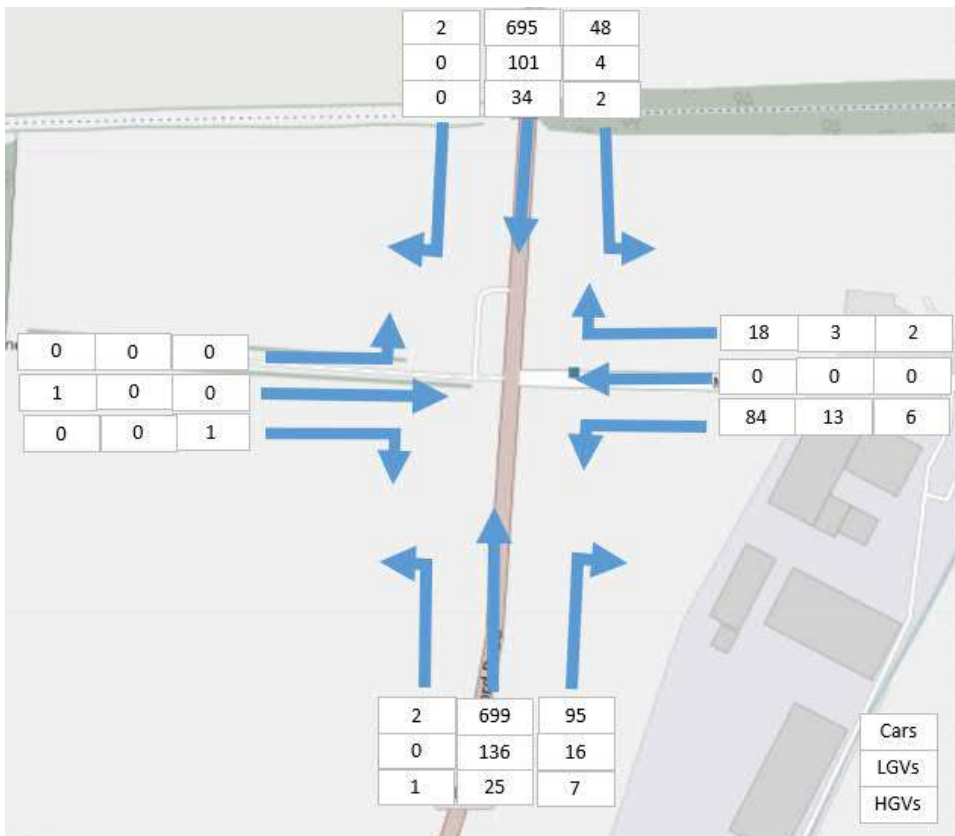
### PM Deerdale Lane



AM Mickledale Lane

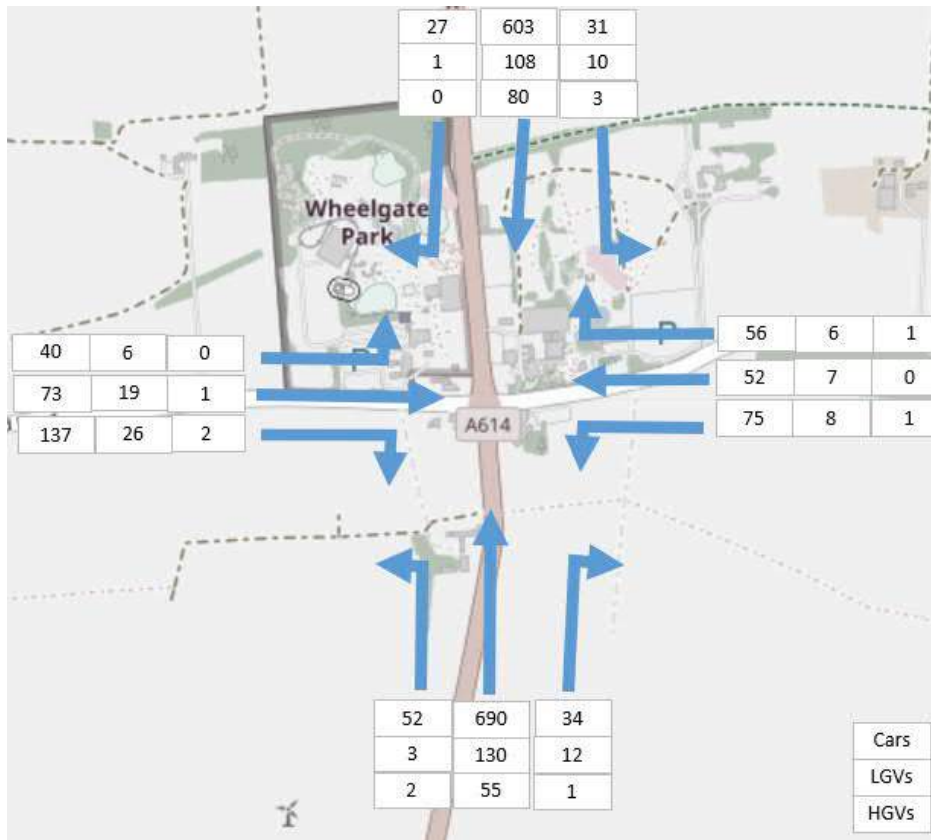


PM Mickledale Lane

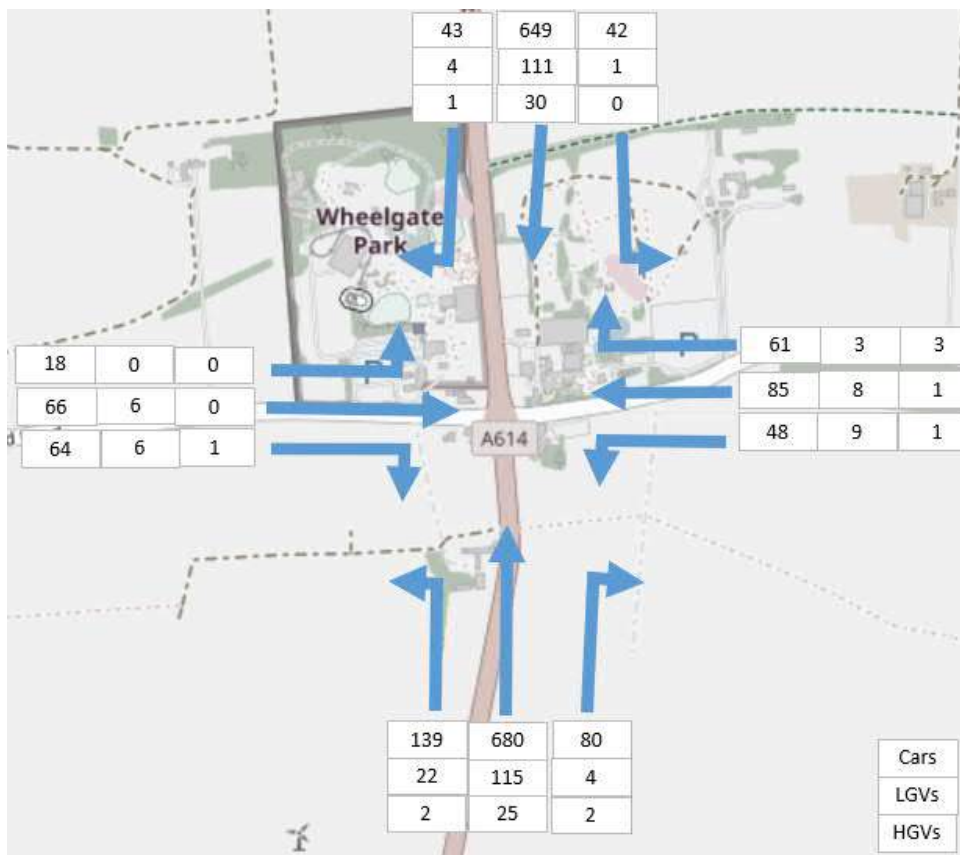




AM White Post

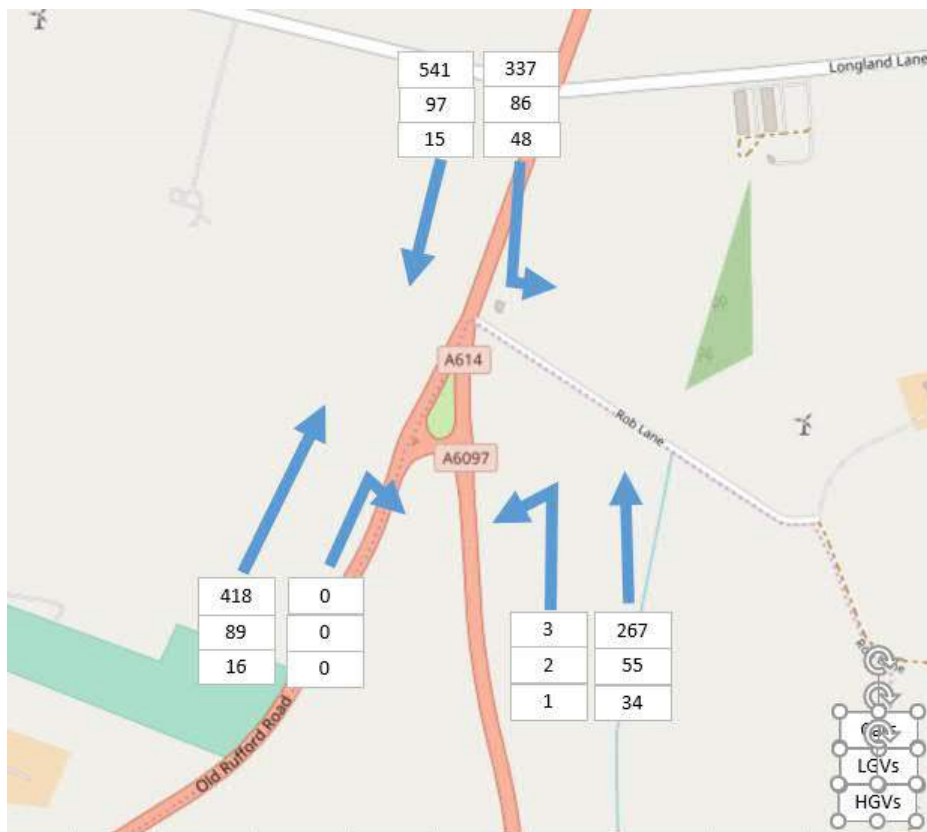


PM White Post

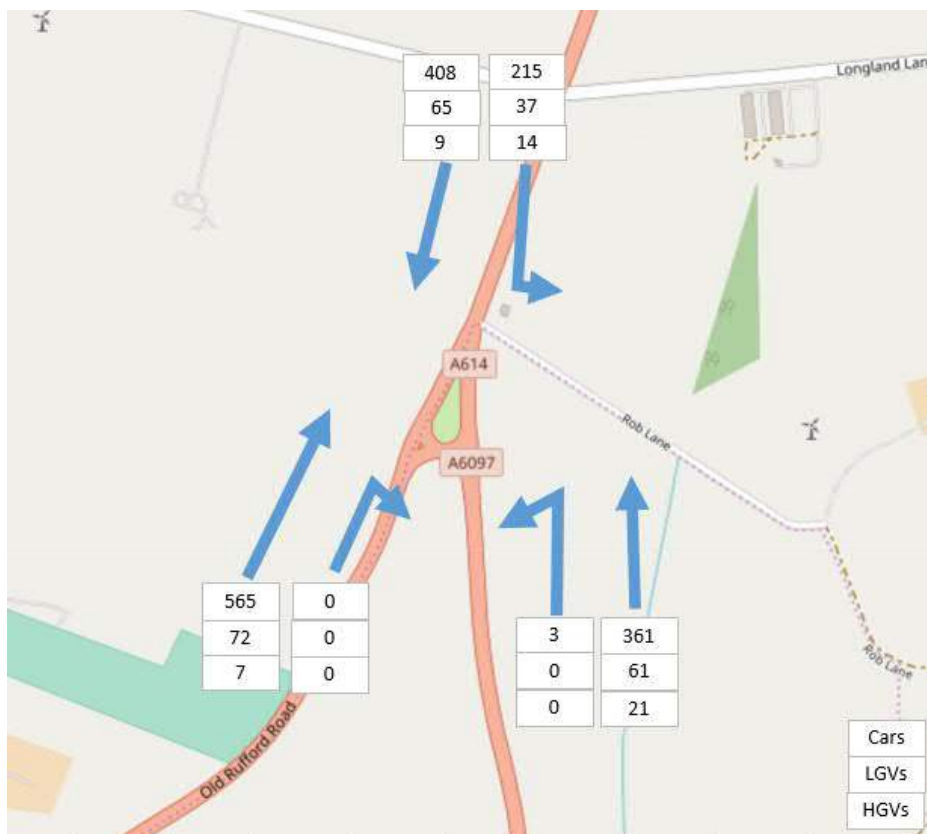




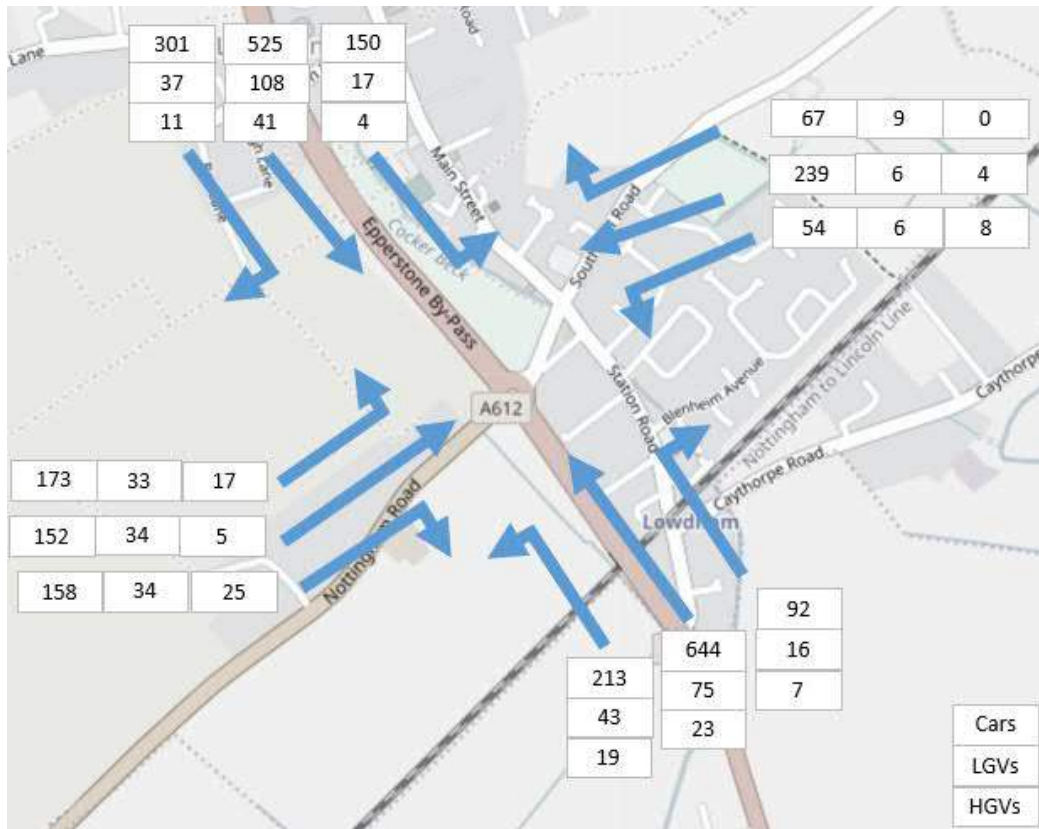
### AM Warren Hill



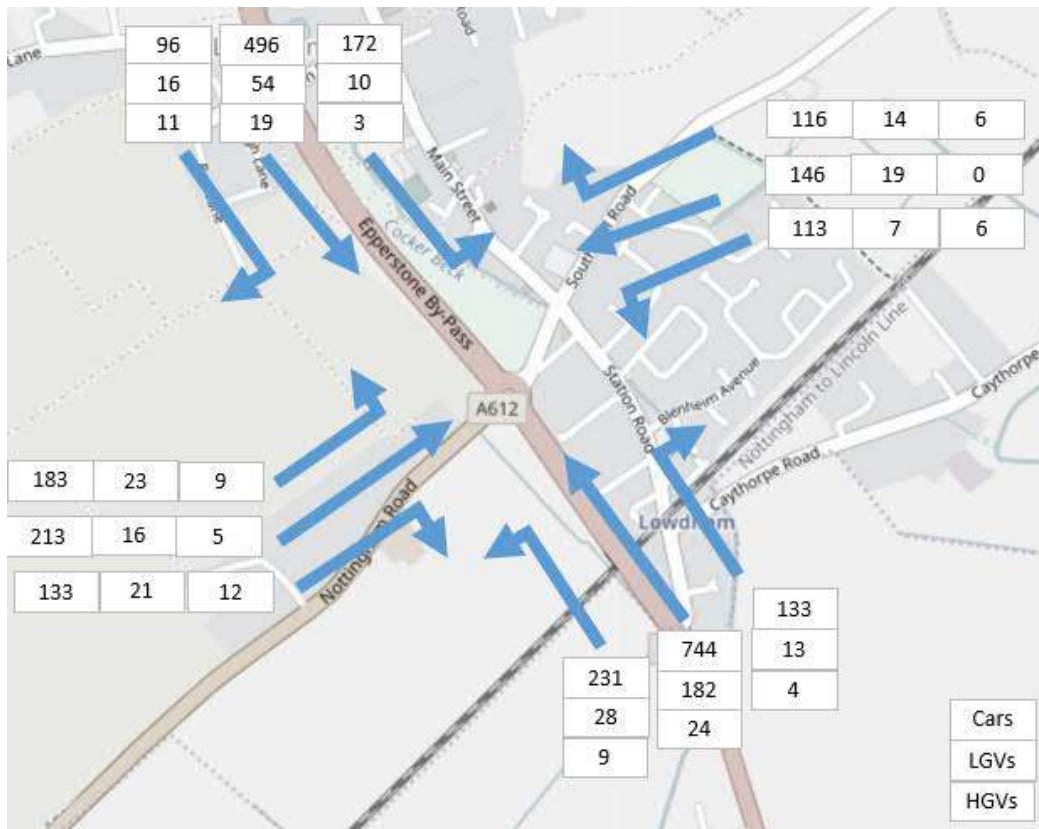
### PM Warren Hill



### AM Lowdham

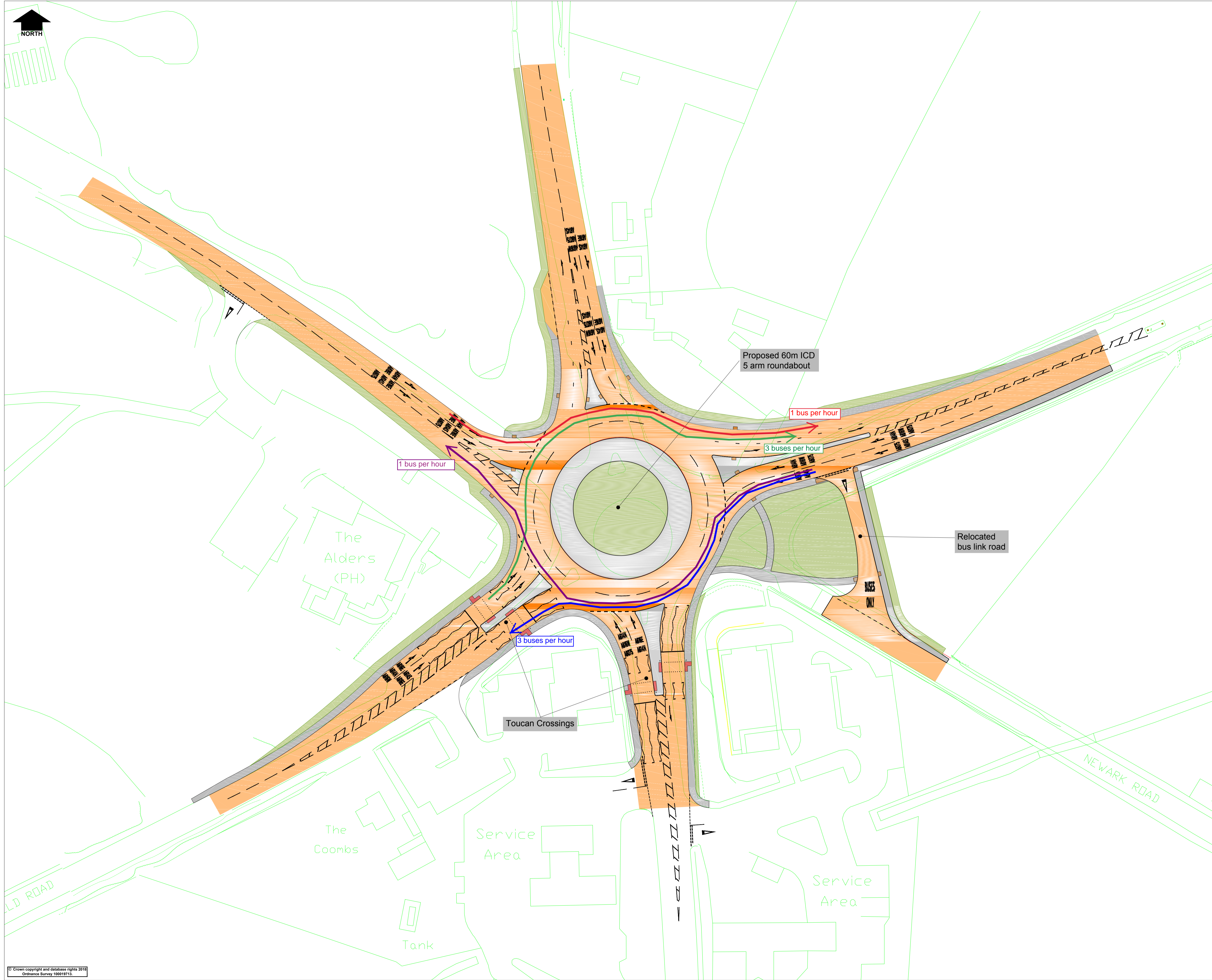


### PM Lowdham



# Appendix G – Observed Public Service Vehicle Flows





- NOTES**
1. This drawing shows the updated revised layout of the enlarged 60m ICD roundabout improvements.
  2. The lane arrangements are configured to suit the current and future traffic forecast (2033) requirements.
  3. The proposed lane destination markings are provided to suit the current and future peak flow and are suggested to compliment the road signage to reduce the potential conflict associated with vehicles crossing over lanes.
  4. The layouts are subject to further road safety audits which will be commissioned following the detailed design stage.
  5. The revised layout has been produced using updated topographical survey information obtained June 2018.
  6. The precise extents of private land are subject to change which may be required as a result of the the detailed design process. The extents of embankments/ earth slopes are shown for indicative purposes and are based on the assumption that adjoining land does not significantly fluctuate in level. Where private land interfaces are restricted in respect of widths available retaining features may be required at these locations. Further verification for the embankment interface will be determined once updated private land topographical survey information and detailed design information is available.
  7. A preliminary analysis has been undertaken to verify vertical design requirements, this has determined that the proposals could meet this design criteria if the speed limits on the approaches were altered to 30mph. Further verification in to the affect of the vertical design on to adjoining land is to be determined during the detailed design process.
  8. Refer to feasibility report produced August 2018 by Via EM Ltd. for further information on the proposals and the departures from standards required.

**KEY**

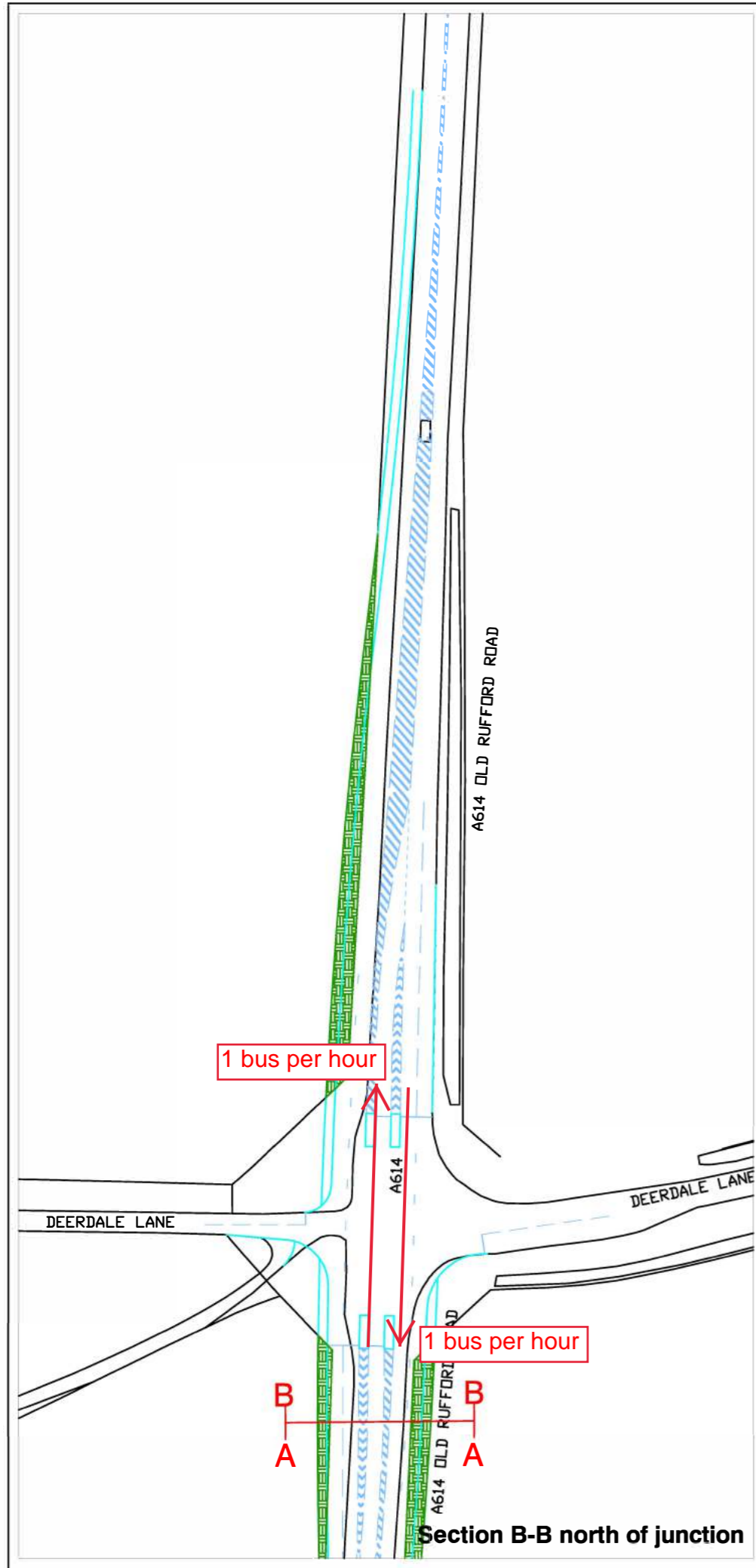
	Proposed carriageway areas
	Proposed footway areas, areas of red and buff contained within footways are tactile paving at crossing location
	Proposed traffic islands and hardstanding area on roundabout island
	Proposed embankment/verge areas
	Proposed landscaped areas

Rev.	Description	Drawn	Ch'kd	Auth	Date
Project					
<b>A614/A6097 CORRIDOR IMPROVEMENTS</b>					
Status		Project No.			
FOR INFO		HW20949			
Drawing Title					
<b>OUTLINE CORRIDOR DESIGN OLLERTON ROUNDABOUT COMMITTEE PLAN</b>					
Scale		Drawn	Auth	Date	
1:500 @A1		AP	AP	20.02.2019	
		Ch'kd	JJP	20.02.2019	
		Auth	AP		
Drawing No.					
PLAN 1 (HW 20949 001/03)					0

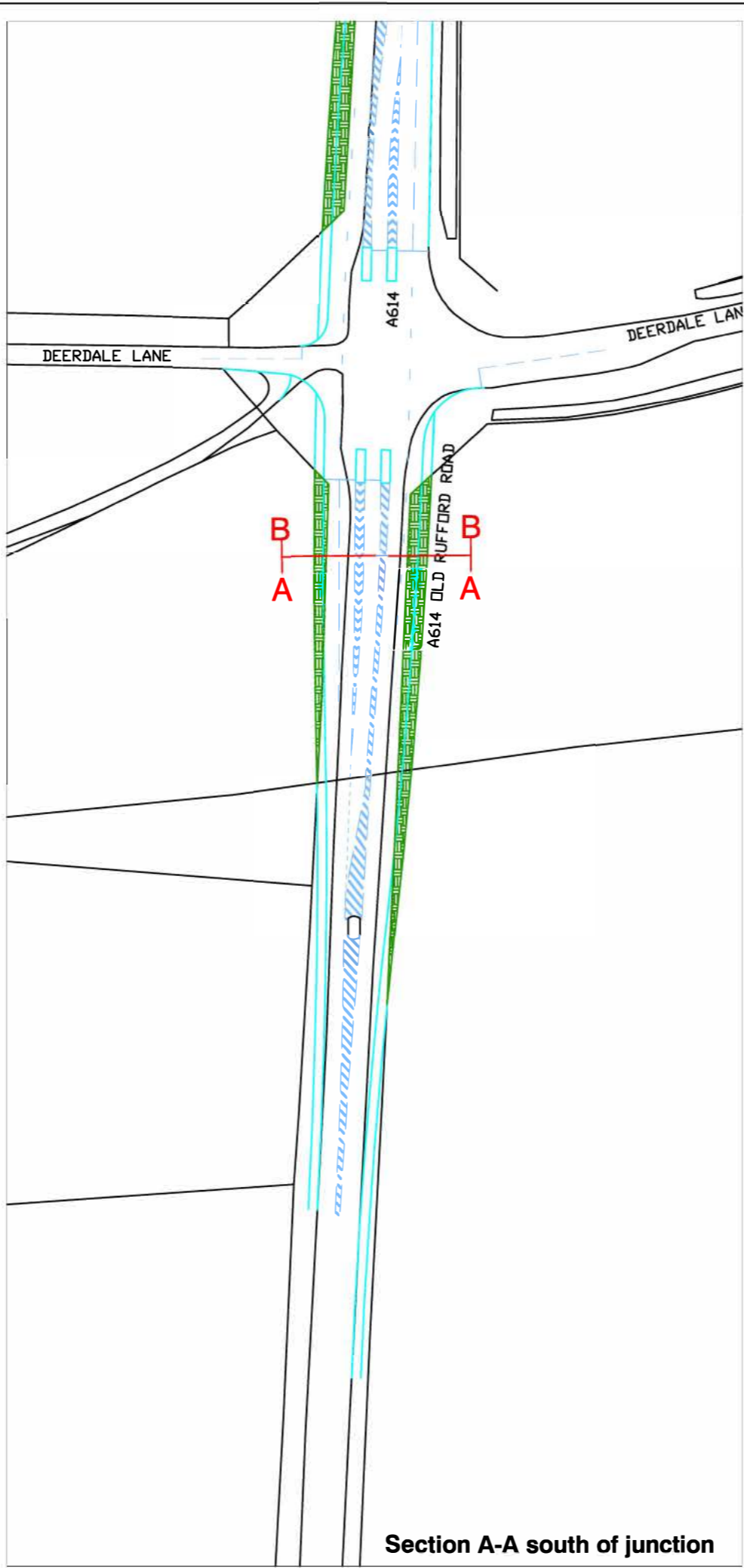
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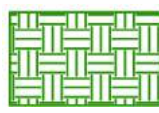


Section B-B north of junction



Section A-A south of junction

**KEY:**

-  Existing kerblines
-  Proposed kerblines
-  Proposed lining
-  Land required beyond Highway Boundary (approx. 823 sq.m)

Rev Status	Description	Drawn	Chkd	Auth	Date
Project	<b>A614/ A617 Bilsthorpe Junction Improvements</b>				
Property No.	HW20949/CN1800922				
Title	<b>A614/ Deerdale Lane proposed traffic signals 2+2 OS ref: 463812/361984</b>				
Scale	1/1250 @A3	Drawn	rr	Date	Dec 2017
		Chkd		Date	Jan 2018
		Auth		Traced	
Drawing No.	PLAN 2 (HW20949/2/TS102)				

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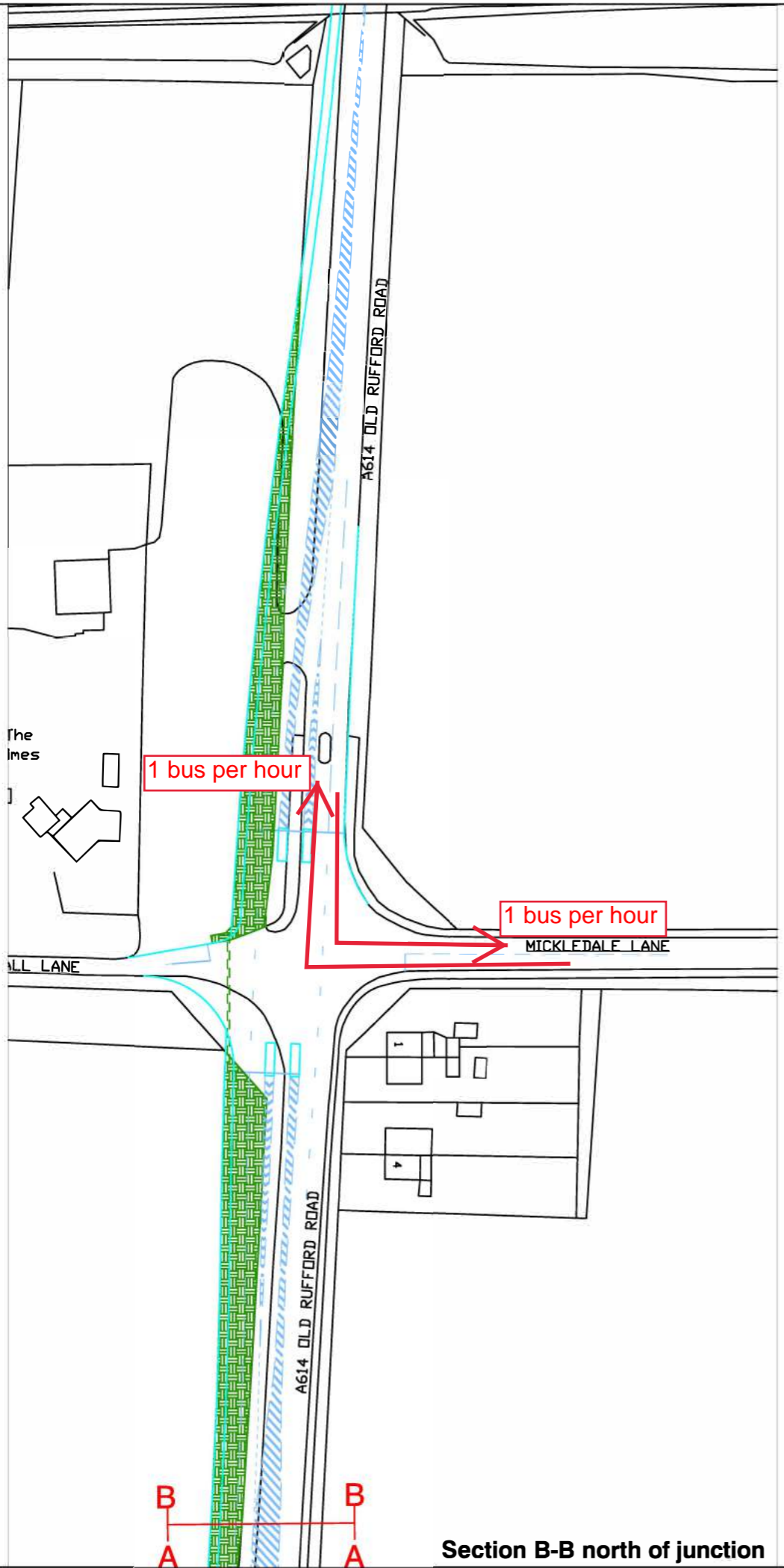
In partnership with



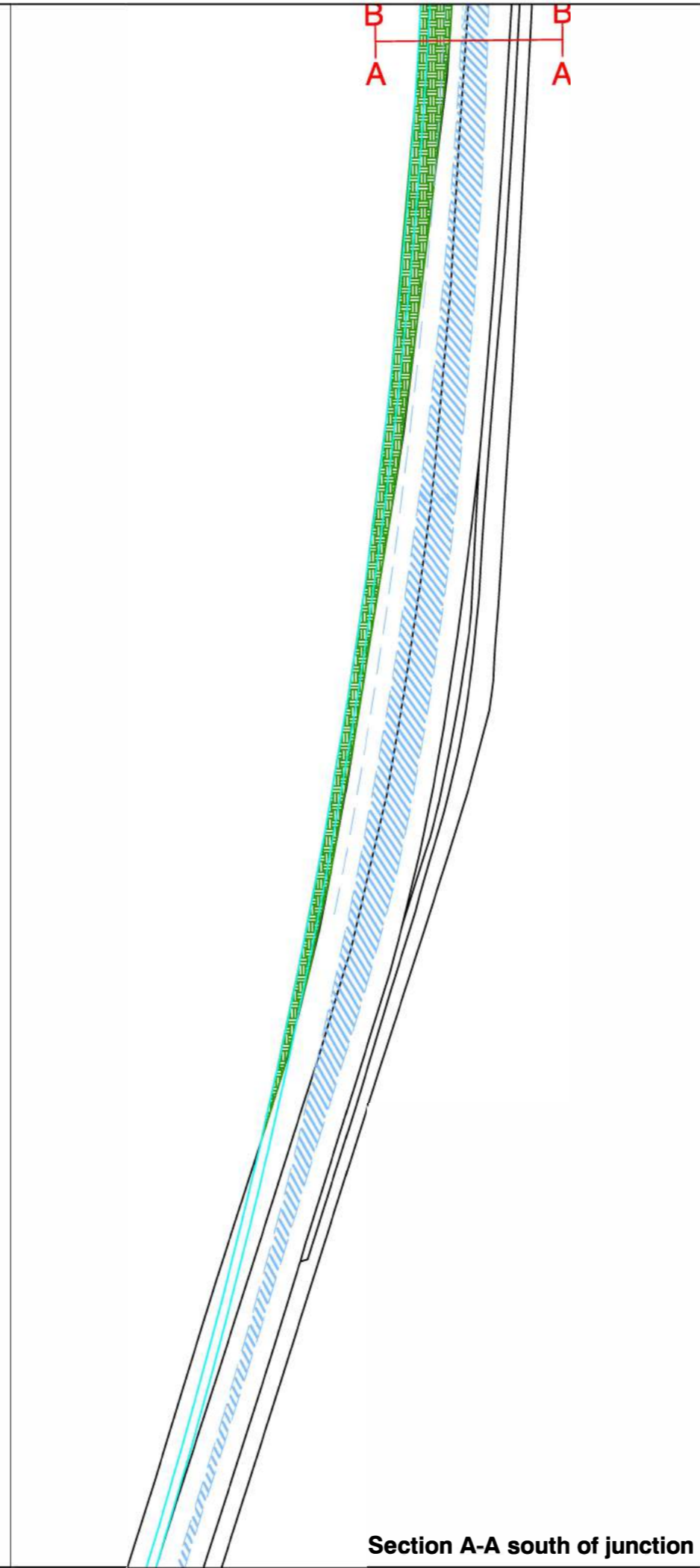

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I:\Highways\Design and Construction\Roads and Highways\Projects\A614-A617 bigger junctions os basedwg





Section B-B north of junction



Section A-A south of junction



**KEY:**

- Existing kerblines
- Proposed kerblines
- Proposed lining
- Land required beyond Highway Boundary (approx. 2445 sq.m)

Rev Status	Description	Drawn	Chkd	Auth	Date
Project	<b>A614/ A617 Bilsthorpe Junction Improvements</b>				
Property No.	Project No. HW20949/CN1800924				
Title	<b>A614/ Mickledale Lane proposed traffic signals 2+2 OS ref: 463755/360943</b>				
Scale	Drawn	rr	Date	Dec 2017	
1/1250 @A3	Chkd	cfa	Date	Jan 2018	
	Auth		Traced		
Drawing No.	Rev				

**PLAN 3 (HW20949/4/TS101)**

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06.02.2019 - 5:42pm in:\Highways\Design and Construction\Roads and Highways\Projects\19\20000\20949 A614 Corridor\Signals\CAD\A614-A617 bigger Junctions os based.dwg



**NOTES**

1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
2. Do not scale from this drawing.
3. All measurements are given in metres unless otherwise stated.

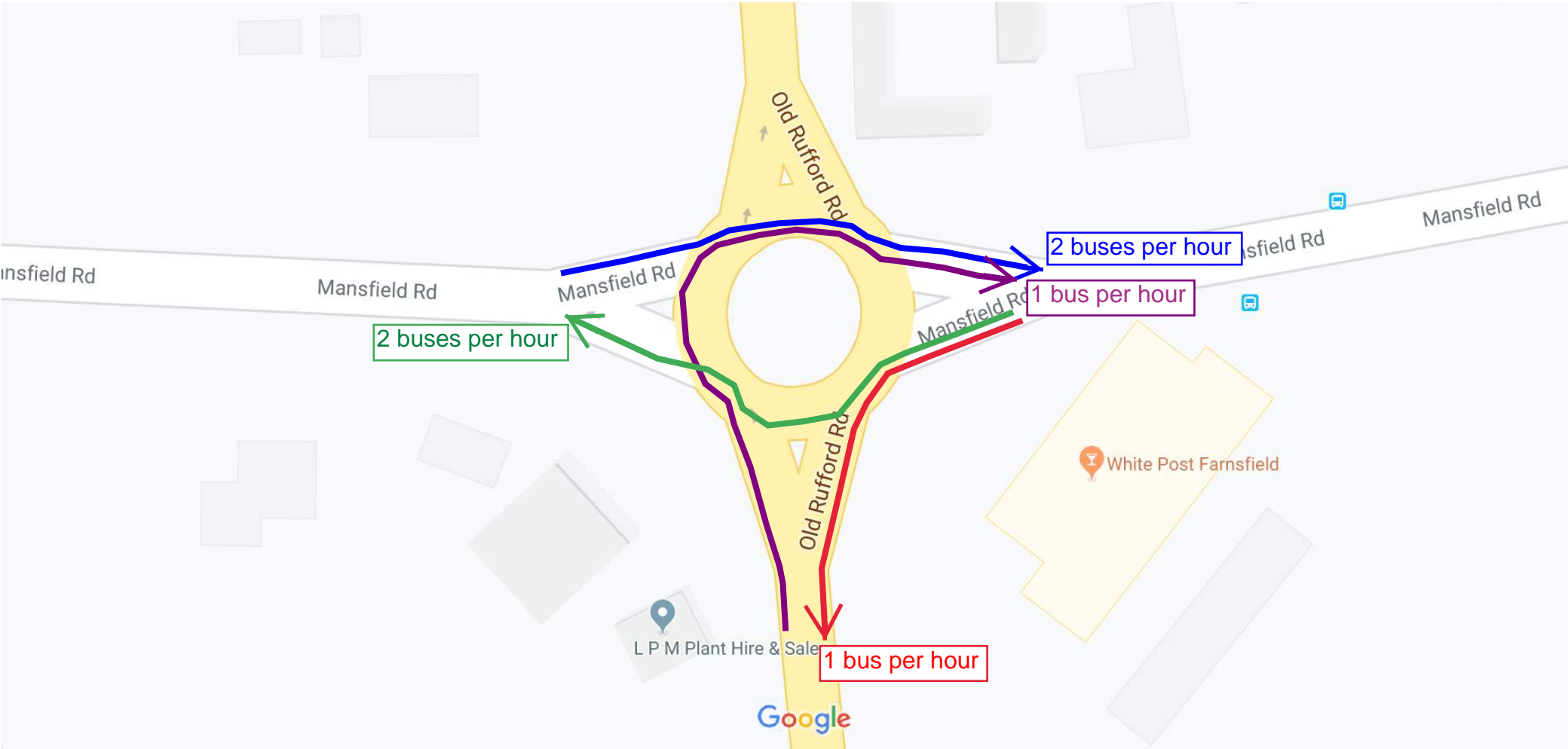
**KEY**

- Proposed Carriageway Construction
- Resurfacing only
- Proposed Kerbline

Rev.	Description	Drawn	Ch'kd	Auth	Date
Project					
<b>A614/A6097 CORRIDOR IMPROVEMENTS WARREN HILL JUNCTION</b>					
Status		Project No.			
FOR INFO		20949			
Drawing Title					
<b>GENERAL ARRANGEMENT</b>					
Scale		Drawn		Date	
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		Ch'kd		Date	
		JJP		03/11/20	
		Auth	Traced	JD	
		JJP			
Drawing No.					Rev.
20949/GEN/WH005/00004					0

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Nottinghamshire, NG22 8ST













**NOTES**

1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
2. Do not scale from this drawing.
3. All measurements are given in metres unless otherwise stated.

**KEY**

-  Proposed carriageway
-  Proposed footway
-  Proposed grass verge
-  Proposed access road
-  Land for property 15 for proposed new boundary and gate
-  New boundary fence and gate to property 15



Rev.	Description	Drawn	Ch'kd	Auth	Date
------	-------------	-------	-------	------	------

Project: **A614/A6097  
CORRIDOR IMPROVEMENTS  
LOWDHAM ROUNDABOUT**

Status: **FOR INFOR** Project No: **HW20949**

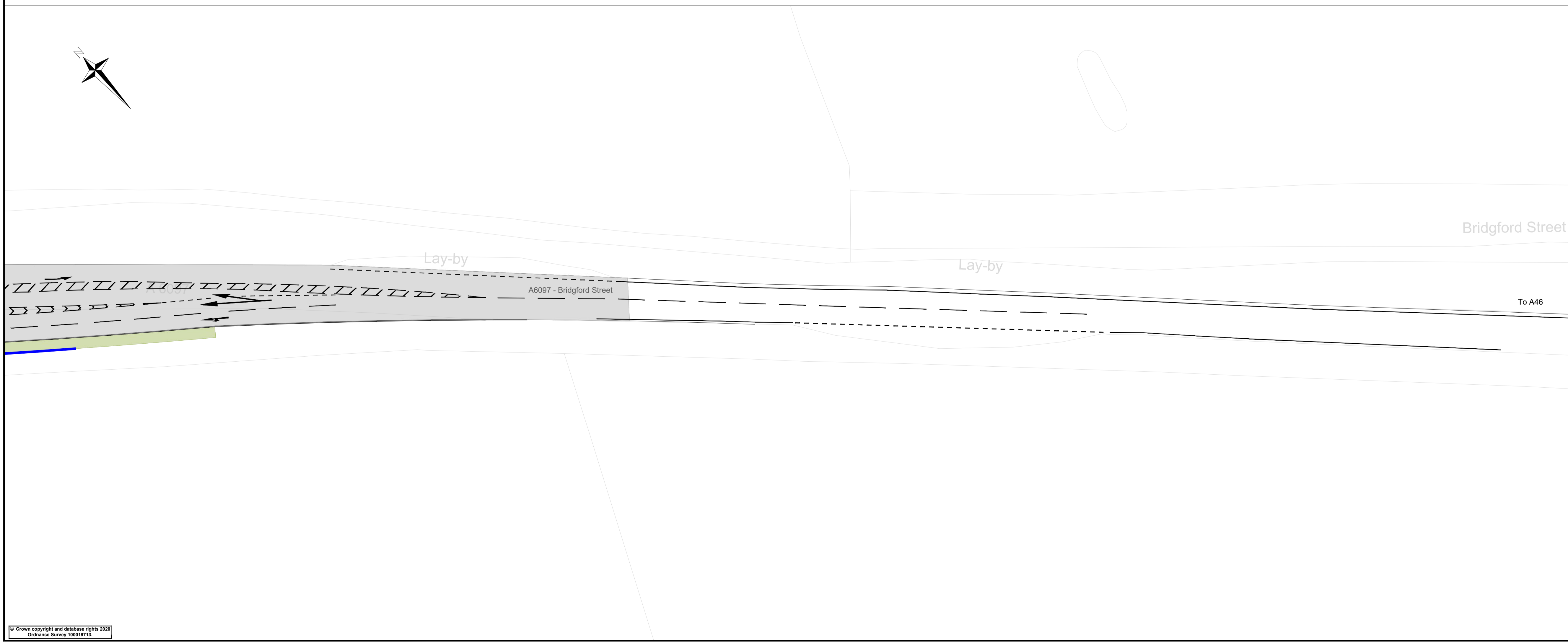
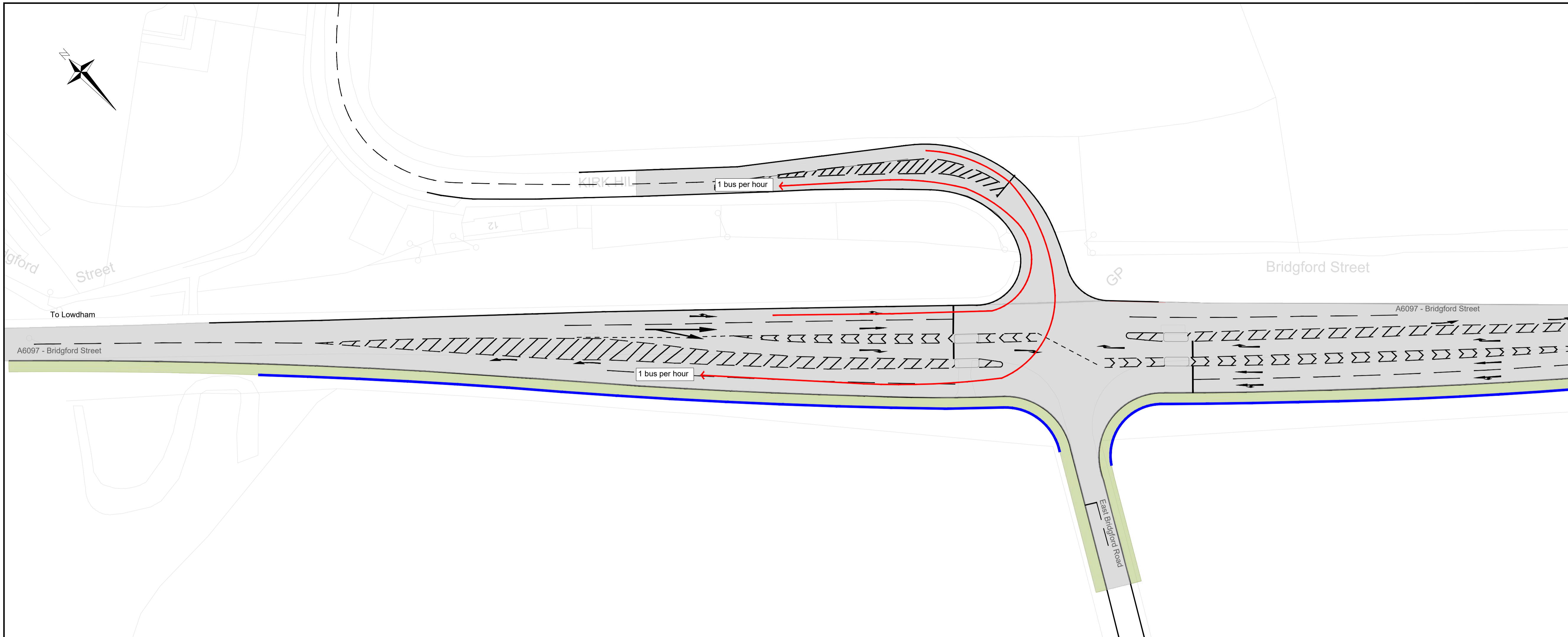
Drawing Title: **GENERAL ARRANGEMENT**

Scale: <b>1:500 @A1</b>	Drawn: <b>JD</b>	Date: <b>MAR 20</b>
	Ch'kd: <b>JJP</b>	Date: <b>APRIL 20</b>
	Auth: <b>JJP</b>	Traced: <b>JD</b>

Drawing No: **20949/GEN/L006/00001**


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- NOTES**
1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
  2. Do not scale from this drawing.
  3. All measurements are given in metres unless otherwise stated.
  4. For accident data refer to Feasibility Study document.
  5. Refer to drawing HW 30676/014 for statutory undertakers information.

- KEY**
- Proposed carriageway
  - Proposed grass verge
  - Proposed retaining wall

Rev.	Description	Drawn	Ch'kd	Auth	Date
Project					
<b>A614/A6097 CORRIDOR IMPROVEMENTS KIRK HILL JUNCTION</b>					
Status		Project No.			
For Info		HW 20949			
Drawing Title					
<b>GENERAL ARRANGEMENT OPTION 1</b>					
Scale		Drawn		Date	
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		Ch'kd		Date	
		JJP		06/11/20	
		Auth	Traced	Rev.	
		JJP	JD		
Drawing No.					Rev.
20949/GEN/KH007/SK/00001					P01

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# Appendix H – Nottinghamshire County Council Bus Map



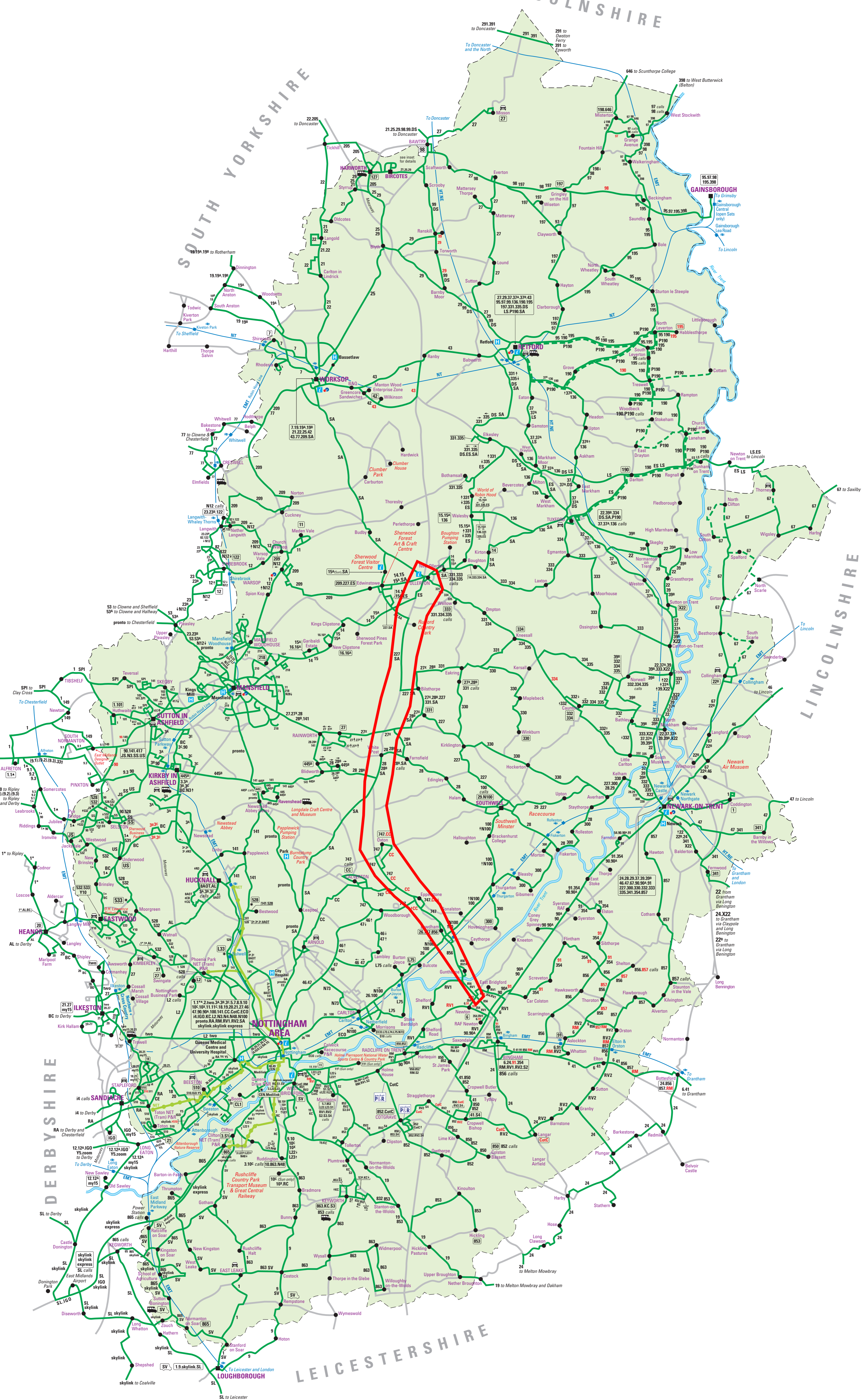
# NORTH LINCOLNSHIRE

# SOUTH YORKSHIRE

# LINCOLNSHIRE

# DERBYSHIRE

# LEICESTERSHIRE





# Appendix I – Dependent Development TN

Project:	<b>A614</b>	Job No:	<b>60625845</b>
Subject:	<b>TN02_Dependent Development Base Year Test</b>		
Prepared by:	<b>Sam Shearstone</b>	Date:	<b>24/11/20</b>
Checked by:	<b>Adam Hall</b>	Date:	<b>17/12/20</b>
Lead Verifier:	<b>David Elliott</b>	Date:	<b>18/12/20</b>
Approved by:	<b>Adam Hall</b>	Date:	<b>18/12/20</b>

# 1. Introduction

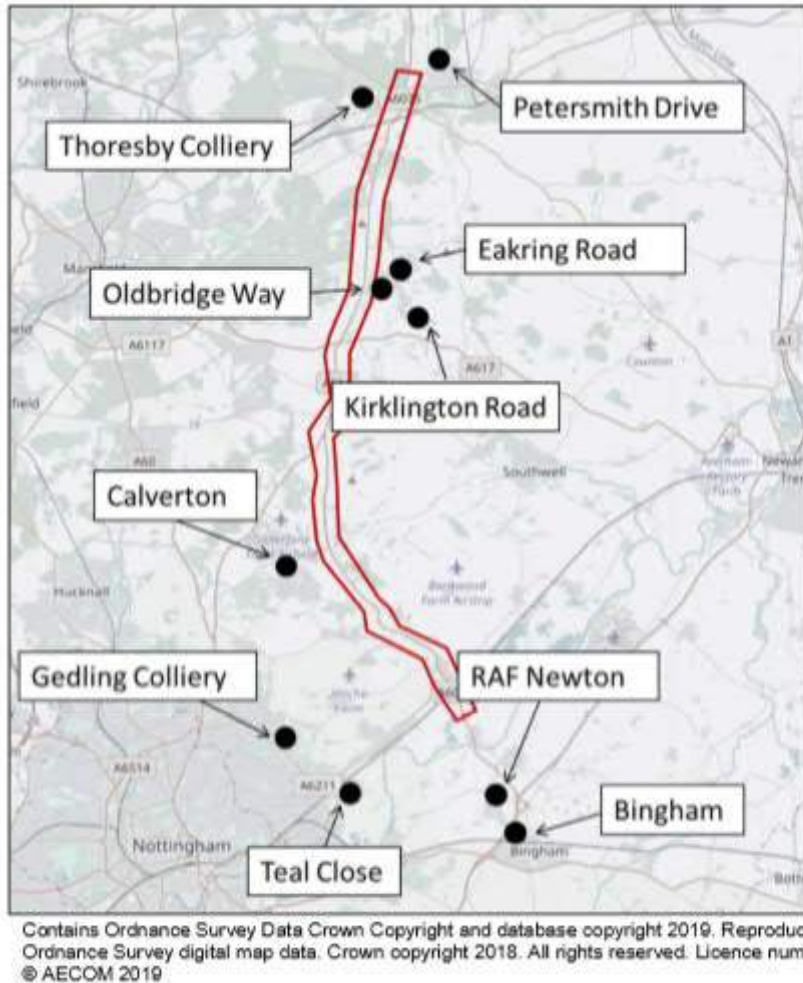
1.1 Nottinghamshire County Council (NCC) is promoting junction improvements at a series of locations on the A614 – A6097 corridor as a single scheme package. The location of these junctions are shown in Figure 1.

**Figure 1 - Junction Locations**



1.2 As detailed in the A614/A6097 Major Road Network Improvement Scheme-Traffic and Economic Assessment Report (TEAR), Table 2.4, numerous development sites were identified in vicinity of the scheme along with any planning conditions attached. The location of these sites is shown in Figure 2.

Figure 2 – Development Locations



- 1.3 This technical note provides details of the planning conditions relating to the junction improvements at Ollerton and Lowdham and provides evidences to conclude that the development at Thoresby Colliery and Teal Close is considered dependent development on the A614/A6097 MRN Improvement Scheme.
- 1.4 As noted in the TEAR dated December 2020, Table 2.4, the developments at Thoresby Colliery (Planning Application Number- 16/02173) and Teal Close (Planning Application Numbers- 2013/0546 and 2017/0999) are limited until improvements at Ollerton Roundabout and Lowdham Roundabout are made.
- 1.5 As outlined in TAG guidance unit A2.2 (May 2020), Section 3, Dependent development “*refers to new development that is dependent on the provision of a specific transport scheme and for which, with the new development but in the absence of the transport scheme, the existing transport network would not provide a reasonable level of service to existing and/or new users. This has the implication that the development would not be delivered in the absence of the specific transport scheme. It is also noted that the development may have planning permission conditional on a transport investment, but this is not a prerequisite for it to be considered dependent.*”



## 2. Dependent Development Dependency Test

- 2.1 TAG unit A2.2, May 2020 notes that the level of dependency of a site is dependent on the proportion of development that may be accommodated before breaching an acceptable level of service on the transport network.
- 2.2 TAG Unit A2.2, paragraph 3.1.6 states:
- 2.3 *“There is no precise definition of reasonable level of service, such that decisions about dependency are judgement based. However, if additional traffic can be accommodated by the network without significant increases in the costs of travel for existing users, then the network can be assumed to provide a reasonable level of service. “*
- 2.4 TAG Unit A2.10, paragraph A2.10 states:
- 2.5 *“... it is assumed that in the baseline scenario the network provides a reasonable level of service. Clearly if that is not the case then the new development is likely to be wholly dependent on some form of transport scheme. However, it must be demonstrated that the baseline scenario does not provide a reasonable level of service before this conclusion can be reached.”*
- 2.6 A ARCADY junction models, developed by VIA East Midlands, were used to assess the capacity of the Ollerton and Lowdham Roundabouts using 2018 Base Year observed traffic flows.
- 2.7 For existing junctions, Ratio to Flow Capacity (RFC) values above 0.85 are likely to produce queues which increase slowly. Above an RFC value of 1.0, a junction is more than likely to be at capacity (with resulting larger increases in queue length).

The outputs from the 2018 Base Year ARCADY junction models are shown in Table 1 to

2.8 Table 4.

**Table 1: Ollerton Base Year ARCADY Assessment Results-AM**

AM								
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
BY								
Arm A616E	0.9	1.8	4.04	0.48	A	36.78	E	-8 % [Arm A614S]
Arm A614S	20.9	74.6	79.77	1.00	F			
Arm A6075	1.5	4.9	12.96	0.61	B			
Arm A616W	7.1	34.7	69.20	0.91	F			
Arm A614N	1.0	2.8	6.91	0.51	A			

**Table 2: Ollerton Base Year ARCADY Assessment Results-PM**

PM								
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
BY								
Arm A616E	2.4	4.1	7.23	0.71	A	30.42	D	-9 % [Arm A614S]
Arm A614S	21.8	69.4	100.71	1.01	F			
Arm A6075	1.1	3.8	10.15	0.52	B			
Arm A616W	1.5	5.5	16.64	0.60	C			
Arm A614N	0.9	2.7	5.60	0.47	A			

**Table 3: Lowdham Base Year ARCADY Assessment Results-AM**

AM							
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Existing Layout - BY							
1 - Southwell Road	3.2	27.09	0.77	D	14.65	B	2 % [1 - Southwell Road]
2 - A6097	4.9	14.75	0.84	B			
3 - Nottingham Road	3.0	15.23	0.76	C			
4 - Epperstone By-Pass	3.7	10.13	0.79	B			

**Table 4: Lowdham Base Year ARCADY Assessment Results-PM**

PM							
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Existing Layout - BY							
1 - Southwell Road	1.3	10.38	0.58	B	72.01	F	-14 % [3 - Nottingham Road]
2 - A6097	6.8	17.37	0.88	C			
3 - Nottingham Road	73.5	266.32	1.18	F			
4 - Epperstone By-Pass	1.4	5.35	0.59	A			

- 2.9 In the 2018 Base Year, Ollerton roundabout is overcapacity, with at least one arm having a Ratio to Flow Capacity (RFC) value in excess 1.0) in both the AM and PM Peak periods, demonstrating that the existing junction is not currently providing a reasonable level of service.
- 2.10 At Lowdham, the existing roundabout is approaching capacity in the AM peak and is over capacity in the PM peak with large delays occurring, demonstrating that the existing junction is not providing a reasonable level of service
- 2.11 In both cases, the new trips associated with the developments will further reduce the level of service at the two junctions and result in significant increases in the costs of travel for existing users.
- 2.12 The developments at Thoresby Colliery and Teal Close can therefore be considered as dependant development and excluded from the Core traffic forecast scenario.
- 2.13 Noting that dependent development is not included in the Core forecasts used to assess the transport user benefits of the scheme, an alternative forecast scenario that includes the trips associated with the dependent development sites has been produced. This forecast has been used to ensure the proposed junction designs have sufficient capacity.

### 3. Transport External Costs

- 3.1 As outlined in TAG unit A2.2 (May 2020), Paragraph 3.3.9, “Transport external costs refer to the costs imposed by dependent transport users on all other users, such as increased levels of congestion or over-crowding. These costs arise as a result of those trips which are dependent on the transport scheme.”
- 3.2 The approach to assessing the Transport External Costs (TEC) is detailed in TAG Unit A2.2, section 3.3.9 onwards.
- 3.3 The assessment of TEC requires two scenarios:

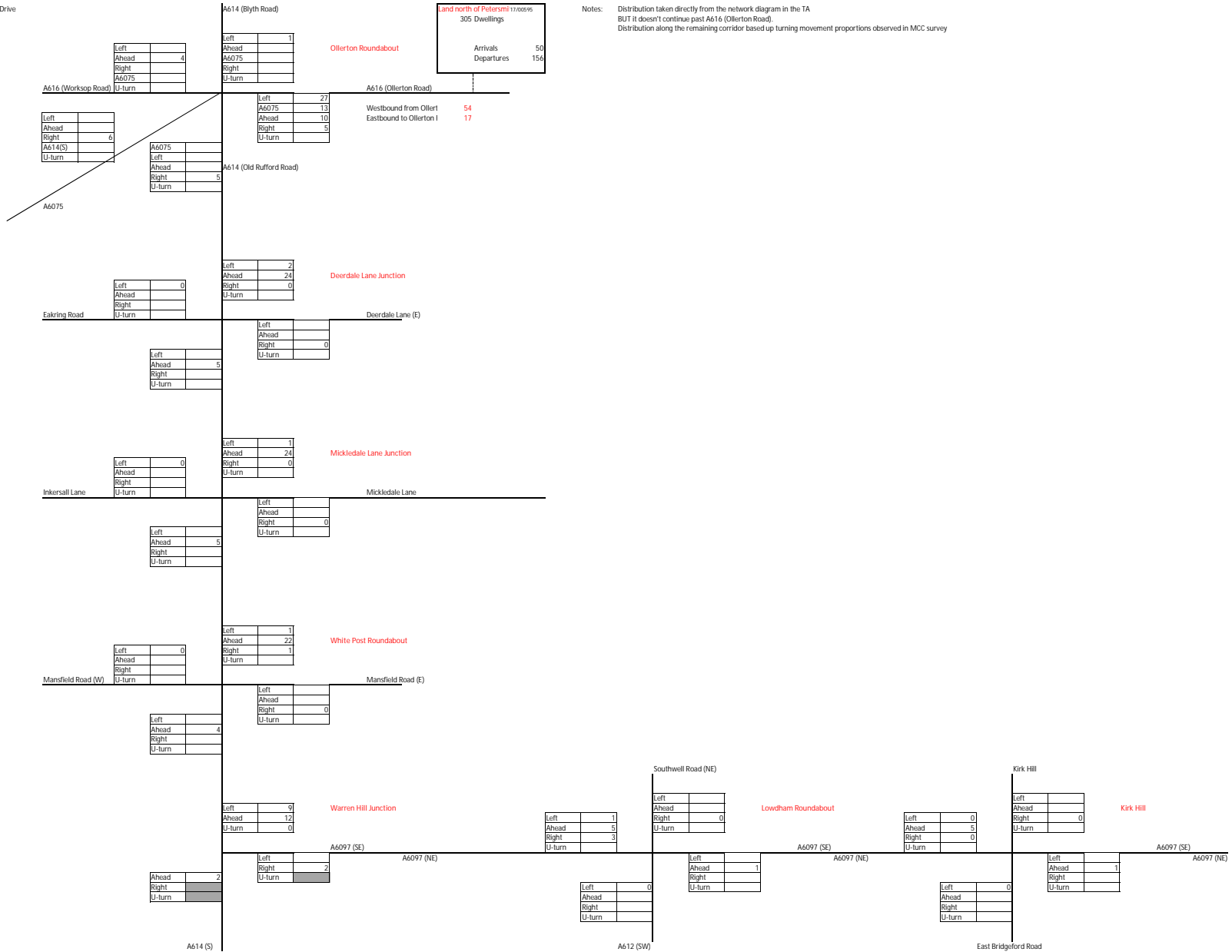
- Scenario S - without the new housing but with the transport scheme; and
  - Scenario R - with the new housing and with the transport scheme.
- 3.4 The TEC assessment, in accordance with TAG Unit A2.2, paragraph 3.3.10 consisted:
- Scenario S – Core Scenario Demand assigned on to the Do Something junction models
  - Scenario R –Dependent Development Demand assigned onto the Do Something junction models
- 3.5 The formulation of the forecast scenarios for the opening year (2023) and design year (2037) is documented in the TEAR (December 2020), Paragraph 2.76 onwards. This details the production of a Core forecast (excluding Dependent Development) and an alternative Dependent Development forecast.
- 3.6 The dependent elements of the Thoresby Colliery and Teal Close sites occur after the 2023 opening year but are fully included in the 2037 design year forecasts. Therefore, Scenario S and Scenario R in the 2023 element of the TEC analysis are the same.
- 3.7 A TEC analysis was undertaken for the Ollerton and Lowdham roundabouts using the Do Something (with scheme) ARCADY models. In 2023 both Scenario S and Scenario R used the Core trip demand. In 2037, Scenario S used the Core trip demand and Scenario R used the Dependent Development trip demand.
- 3.8 The methodology as detailed in TAG guidance unit A2.2 (May 2020) and the Department for Transport TUBA software V1.9.14 was used to undertake this analysis, with the TUBA economic parameters file (23/08/2020 v2, TAG Data Book v1.13.1 July 2020).
- 3.9 The TEC impacts are summarised for each junction in Table 5 below.

**Table 5: Transport External Costs (£000's)**

	Ollerton	Lowdham	Combined
<b>Consumer - Commuting user benefits</b>	-868	-754	-1622
<b>Consumer - Other user benefits</b>	-2,652	-961	-3,613
<b>Business User benefits</b>	-1,830	-641	-2,471
<b>Net Present Value of Benefits (PVB)</b>	<b>-5,350</b>	<b>-2,356</b>	<b>-7,706</b>

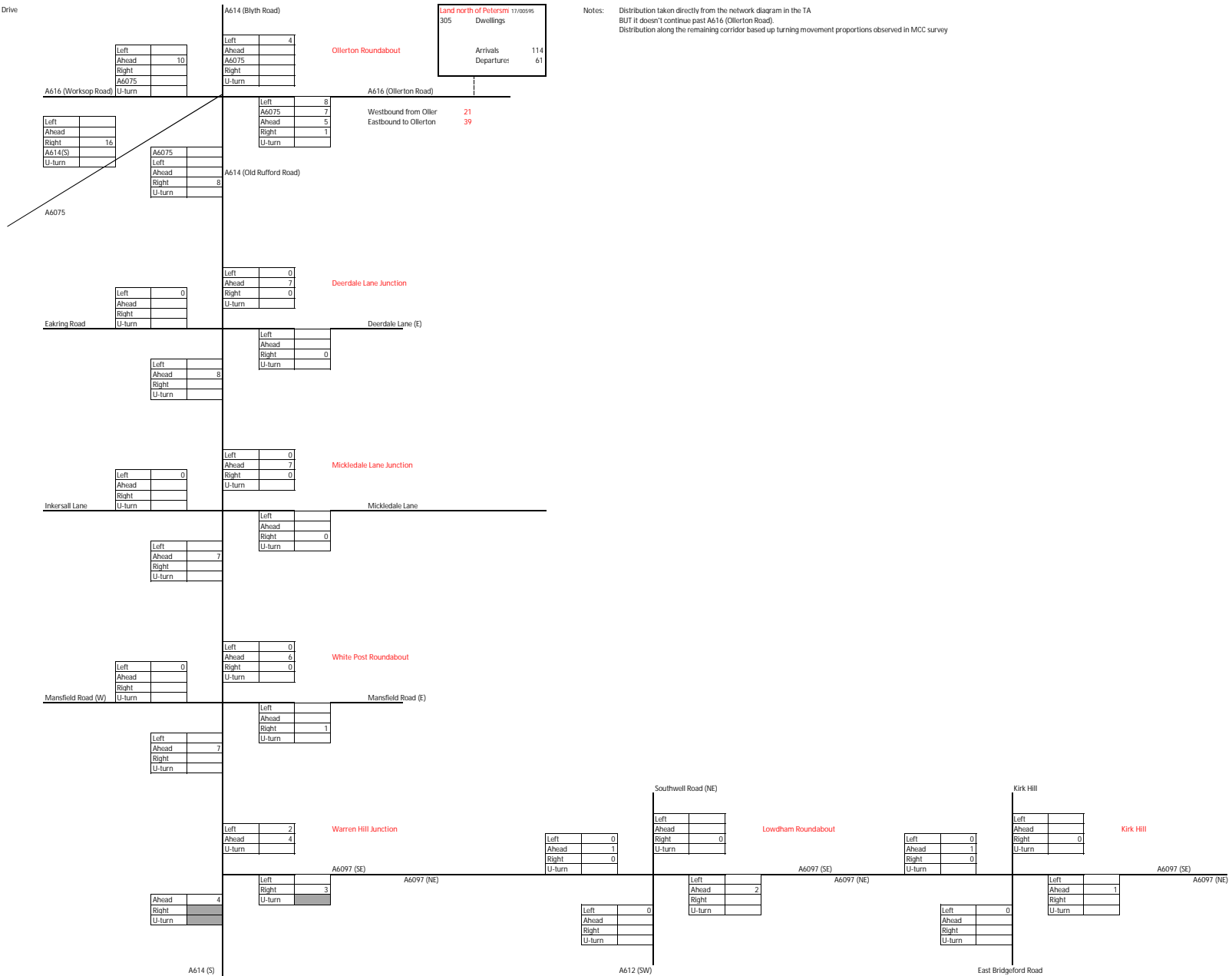
- 3.10 The TAG assessment of Transport External Costs results in an overall disbenefit with Present Value of Benefits of -£7.706m.
- 3.11 These TEC impacts represent an increase in costs to existing road users as a result of the addition of new trips from the dependent development sites.
- 3.12 The DfT's Value for Money Framework states that whilst benefits associated with Induced Investment should not be included in the initial benefit-cost results, it may be used to inform the scheme's value for money assessment. As such, monetised TEC impacts were excluded from the initial Analysis of Monetised Costs and Benefits but are presented to support the value for money case.

# Appendix J – Development Site Trip Distributions

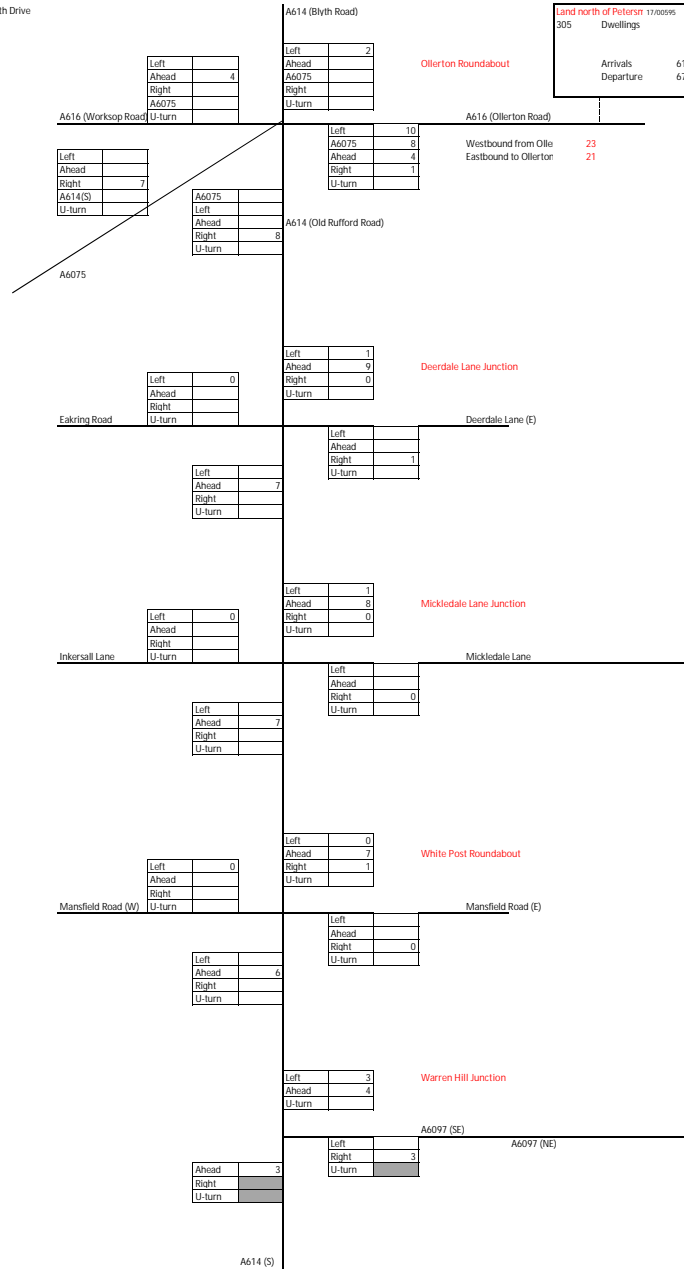


Notes: Distribution taken directly from the network diagram in the TA  
BUT it doesn't continue past A616 (Ollerton Road).  
Distribution along the remaining corridor based up turning movement proportions observed in MCC survey





Traffic Distribution- Petersmith Drive  
IP (1000-1600 average)



Land north of Peters	17,000/95
305 Dwellings	
Arrivals	61
Departure	67

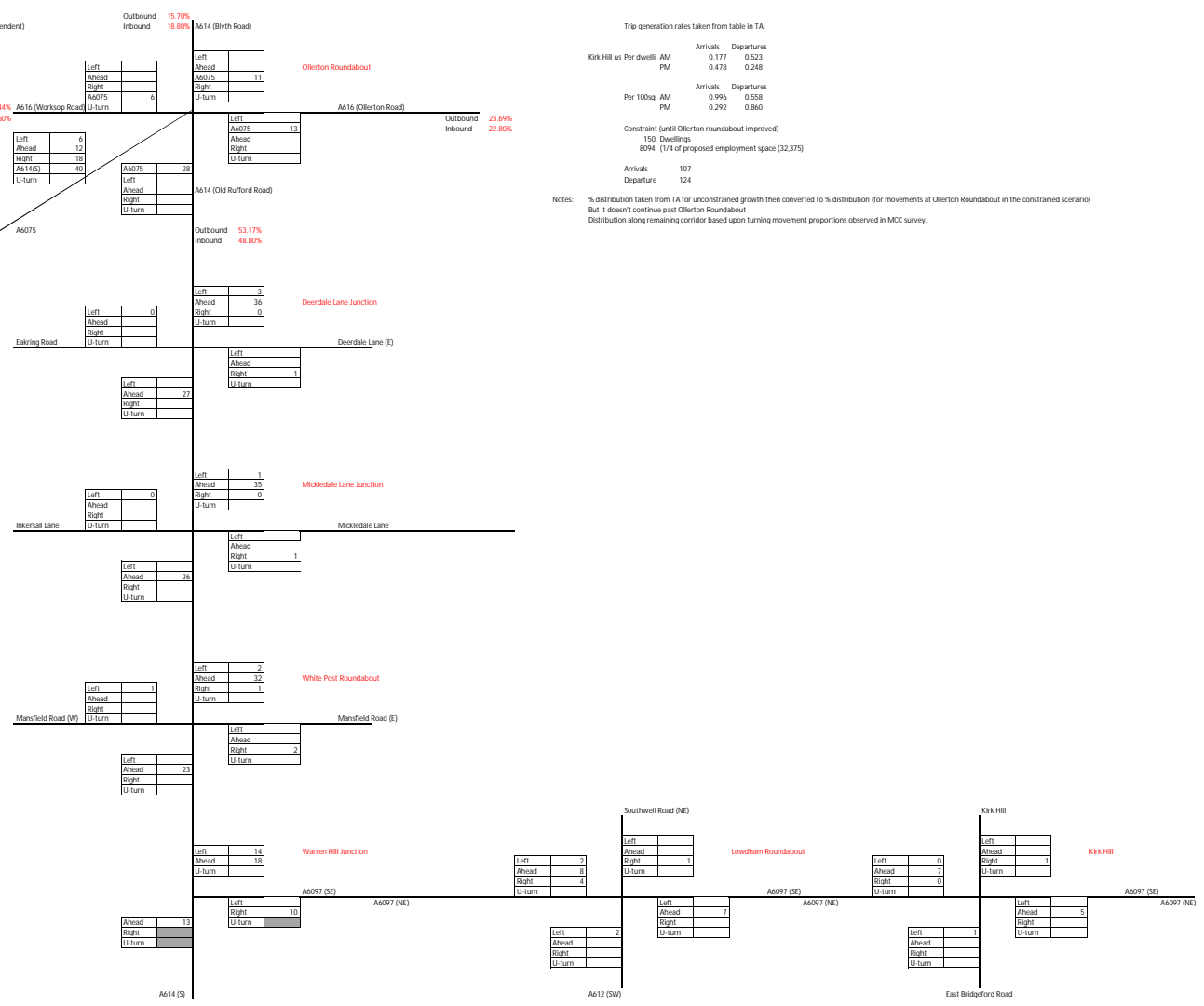
Notes: Distribution calculated from AM and PM average  
Distributions past A616 (Ollerton Road) have been calculated from observed distributions from survey  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

	AM	PM	Interpeak (Average)
Routing westbound	34.6%	34.4%	34.5%
Routing Eastbound	34.0%	34.2%	34.1%

Traffic Distribution- Thoresby (Non-Dependent)  
AM (07:30-08:30)

<b>Thoresby Colliery</b>	1402171
150 Dwellings	
8094 Employment	
Arrivals	107
Departure	124

Routes to 61%  
Routes from 54%



Trip generation rates taken from table in TA:

Kirk Hill us Per dwells	Arrivals	Departures
AM	0.177	0.523
PM	0.478	0.248

Per 100sq	Arrivals	Departures
AM	0.996	0.358
PM	0.292	0.860

Constraint: Limit Orlerton roundabout (improved)  
150 Dwellings  
8094 (1/4 of proposed employment space (32,375))

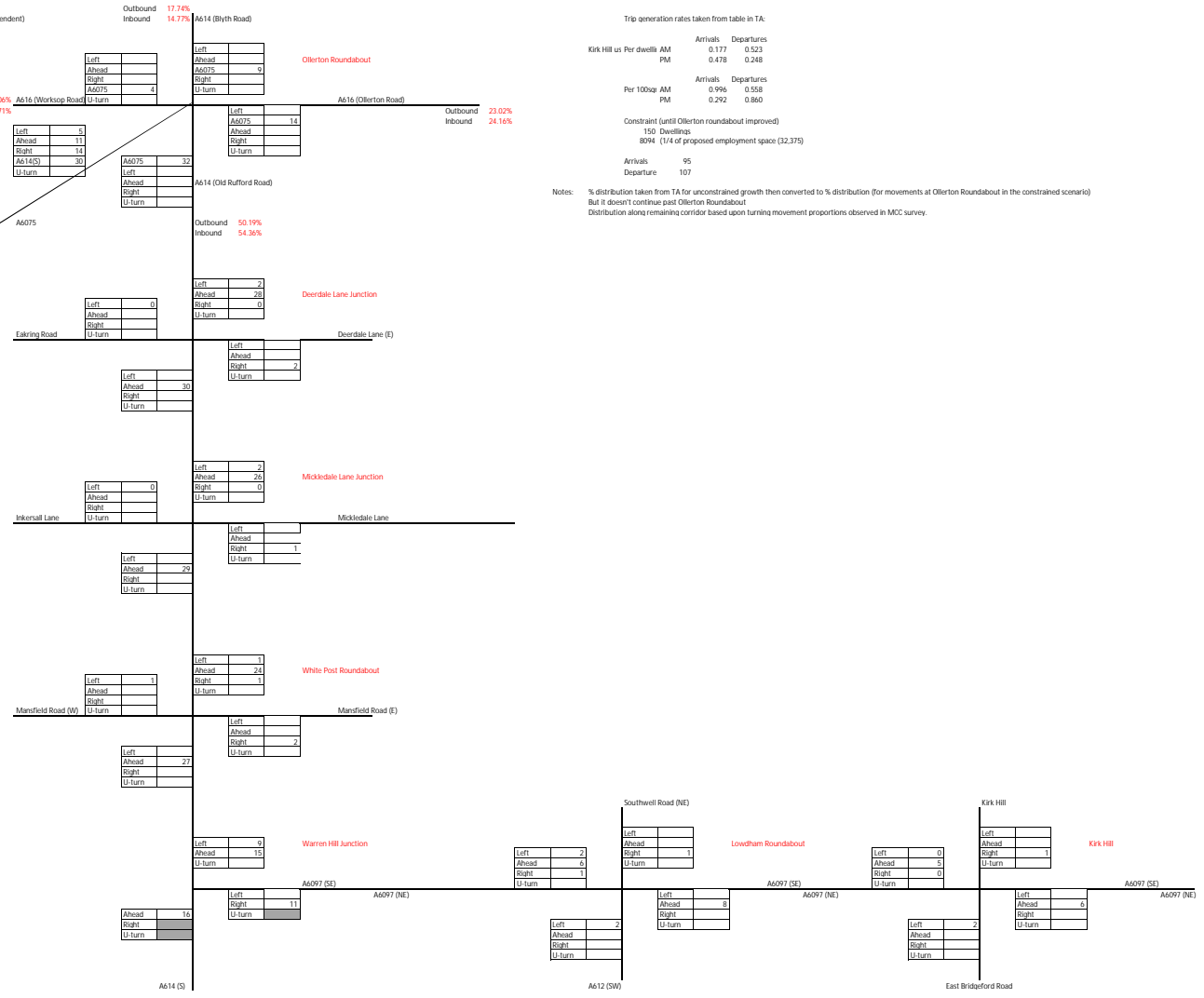
Arrivals	107
Departure	124

Notes: % distribution taken from TA for unconstrained growth then converted to % distribution for movements at Orlerton Roundabout in the constrained scenario  
But it doesn't continue past Orlerton Roundabout  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

Traffic Distribution- Thoresby (Non-Dependent)  
PM (16:30-17:30)

Thoresby Colliery	1402171
150 Dwellings	
8094 Employment	
Arrivals	95
Departure	107

Routes to 56%  
Routes from 62%



Trip generation rates taken from table in TA:

Kirk Hill us Per dwells	AM	PM	Arrivals	Departures
			0.177	0.523
			0.478	0.248

Per 100sq	AM	PM	Arrivals	Departures
			0.996	0.358
			0.292	0.860

Constraint: Limit Ollerton roundabout (improved)  
150 Dwellings  
8094 (1/4 of proposed employment space (32,375))

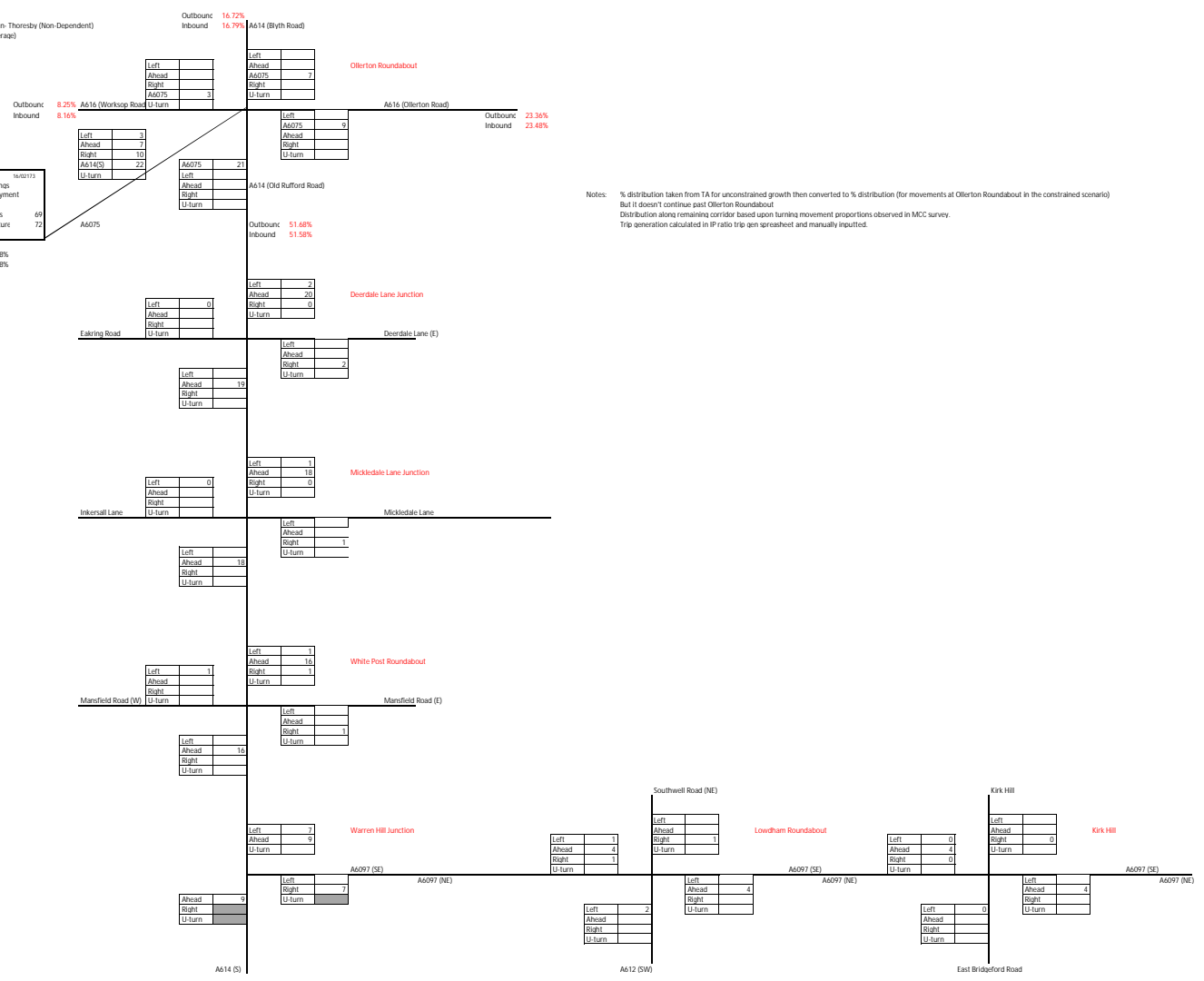
Arrivals	95
Departure	107

Notes: % distribution taken from TA for unconstrained growth then converted to % distribution for movements at Ollerton Roundabout in the constrained scenario  
But it doesn't continue past Ollerton Roundabout  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

Traffic Distribution: Thoresby (Non-Dependent)  
 IP (1000-1400 average)

<b>Thoresby Colliery</b>	1400/1718
150 Dwellings	
8094 Employment	
Arrivals	69
Departure	72

Roads to 58%  
 Routes to 58%



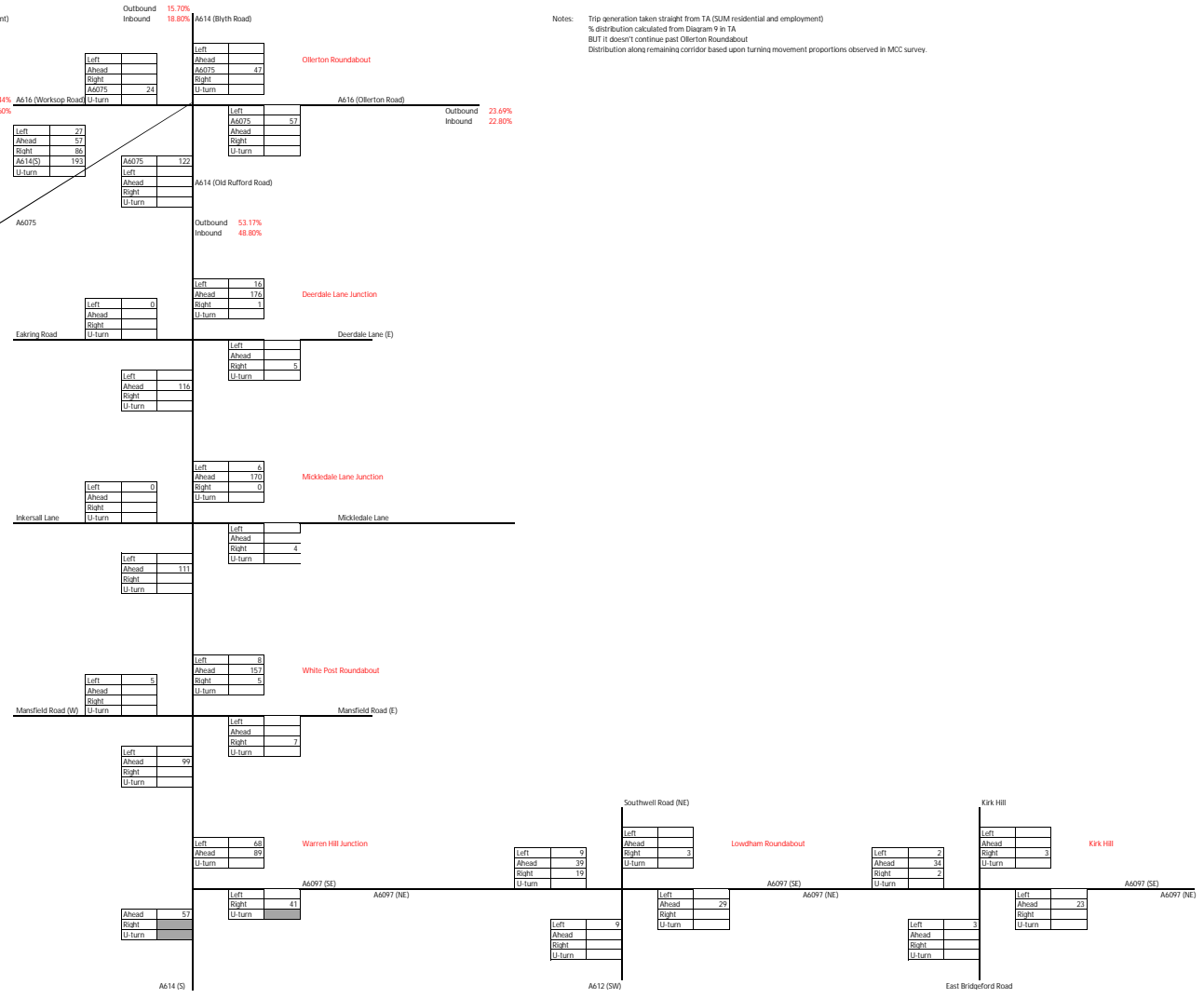
Notes: % distribution taken from TA for unconstrained growth then converted to % distribution for movements at Offerton Roundabout in the constrained scenario  
 But it doesn't continue past Offerton Roundabout  
 Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.  
 Trip generation calculated in IP ratio trip ven spreadsheet and manually inputted.



Traffic Distribution: Thoresby (Dependent)  
AM (07:30-08:30)

**Thoresby Colliery** 1402071  
800 Dwellings  
32,375 sq. Employment  
Arrivals: 464  
Departure: 599

Routes to: 61%  
Routes from: 54%

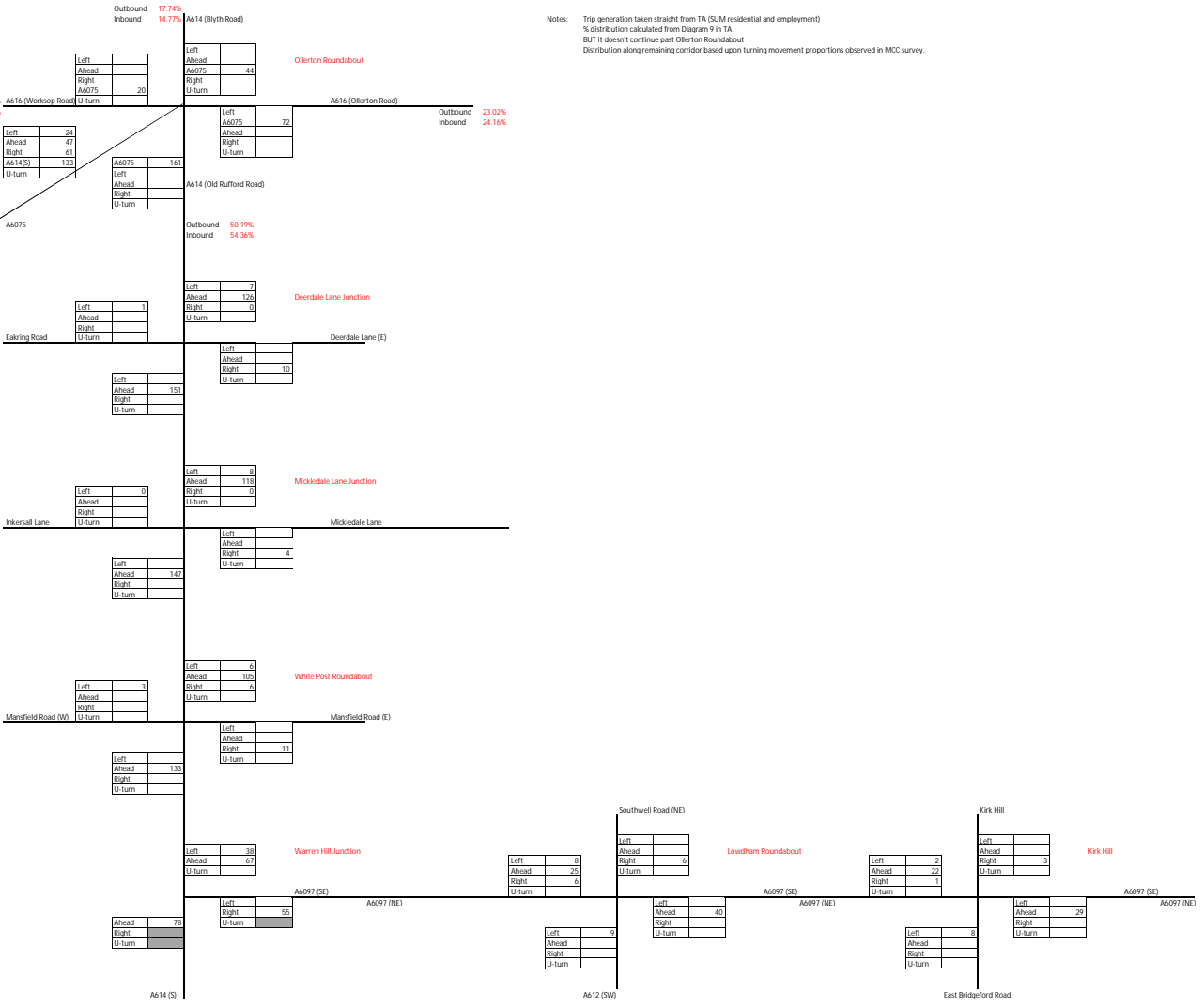


Notes: Trip generation taken straight from TA (SUM residential and employment)  
% distribution calculated from Diagram 9 in TA  
BUT IT DOESN'T CONTINUE PAST OLLERTON ROUNDABOUT  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

Traffic Distribution - Thoresby (Dependent)  
RM (1630-1730)

**Thoresby Colliery** 14000 m<sup>2</sup>  
800 Dwellings  
32,375 sq. Employment  
Arrivals 477  
Departure 476

Routes to 56%  
Routes fro 62%

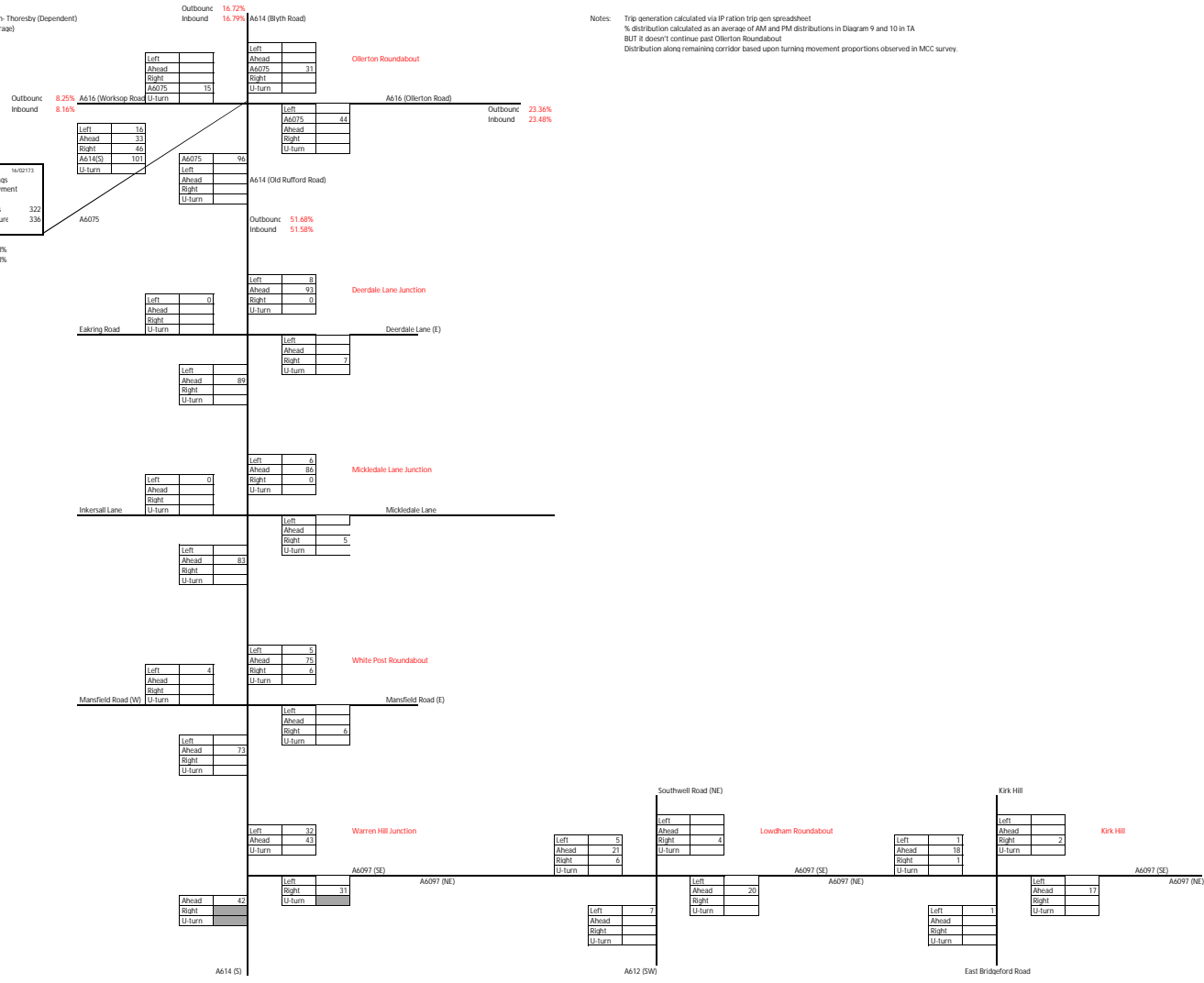


Notes: Trip generation taken straight from TA (SUM residential and employment)  
% distribution calculated from Diagram 9 in TA  
BUT it doesn't continue past Orleton Roundabout  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

Traffic Distribution: Thoresby (Dependent)  
 IP (1000-1400 average)

<b>Thoresby Colliery</b>	1400/1718
800 Dwellings	
32,375 sq Employment	
Arrivals	322
Departure	334

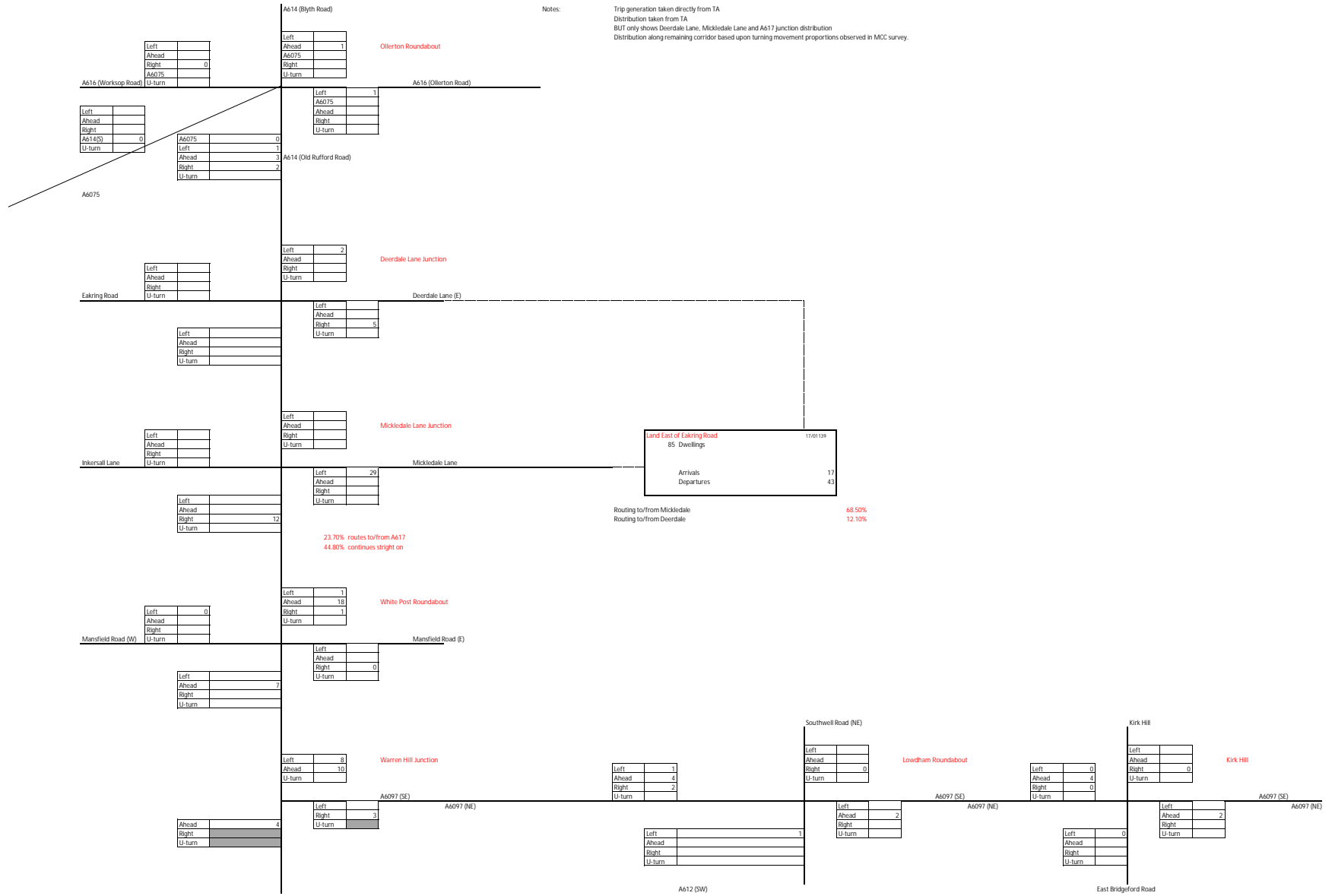
Roads to 58%  
 Routes to 58%

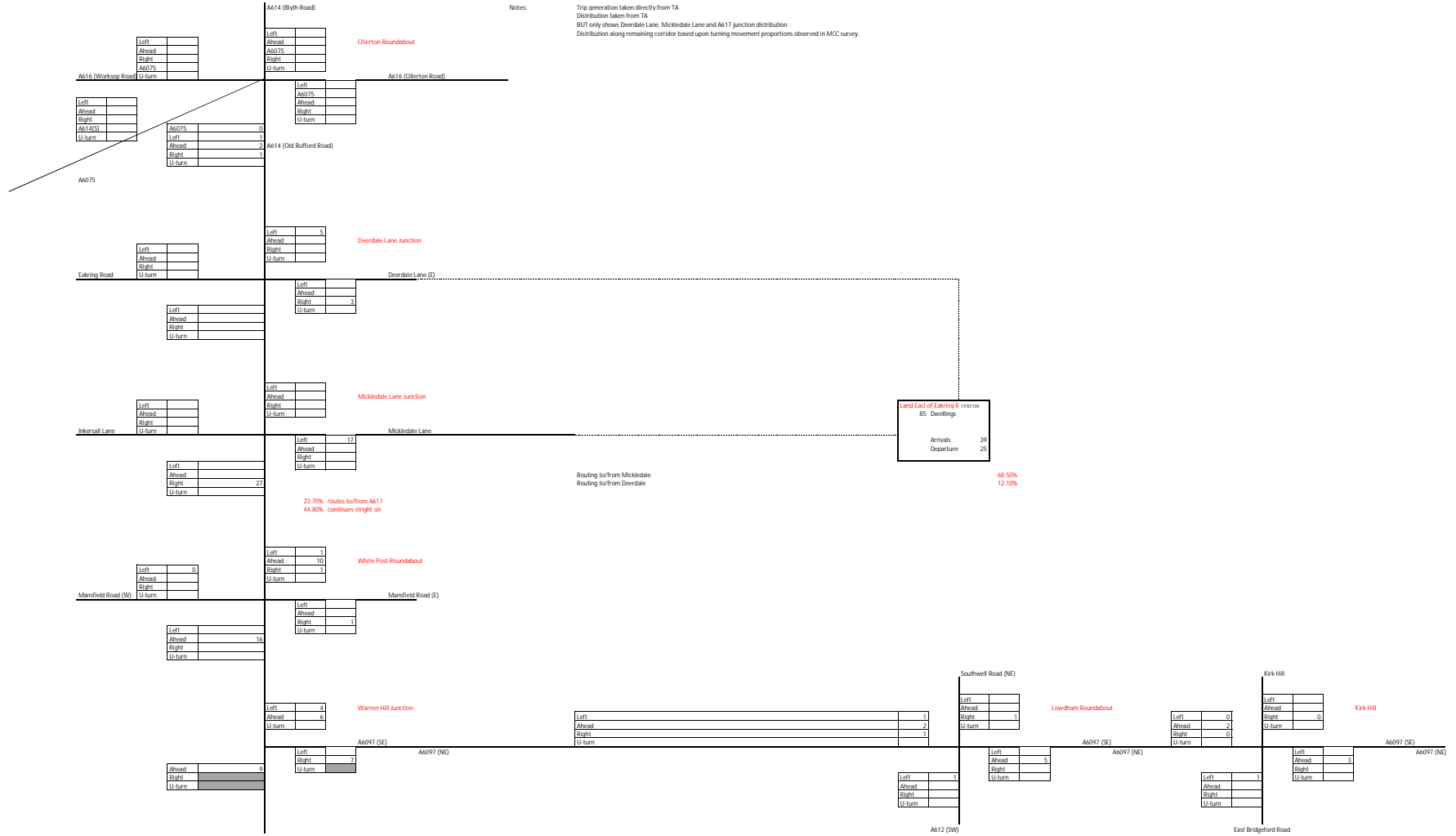


Notes: Trip generation calculated via IP ration trip gen spreadsheet  
 % distribution calculated as an average of AM and PM distributions in Diagram 9 and 10 in TA  
 BUT it doesn't continue past Orlerton Roundabout  
 Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

Notes:

Trip generation taken directly from TA  
Distribution taken from TA  
BUT only shows Deerdale Lane, Mickledale Lane and A417 Junction distribution  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

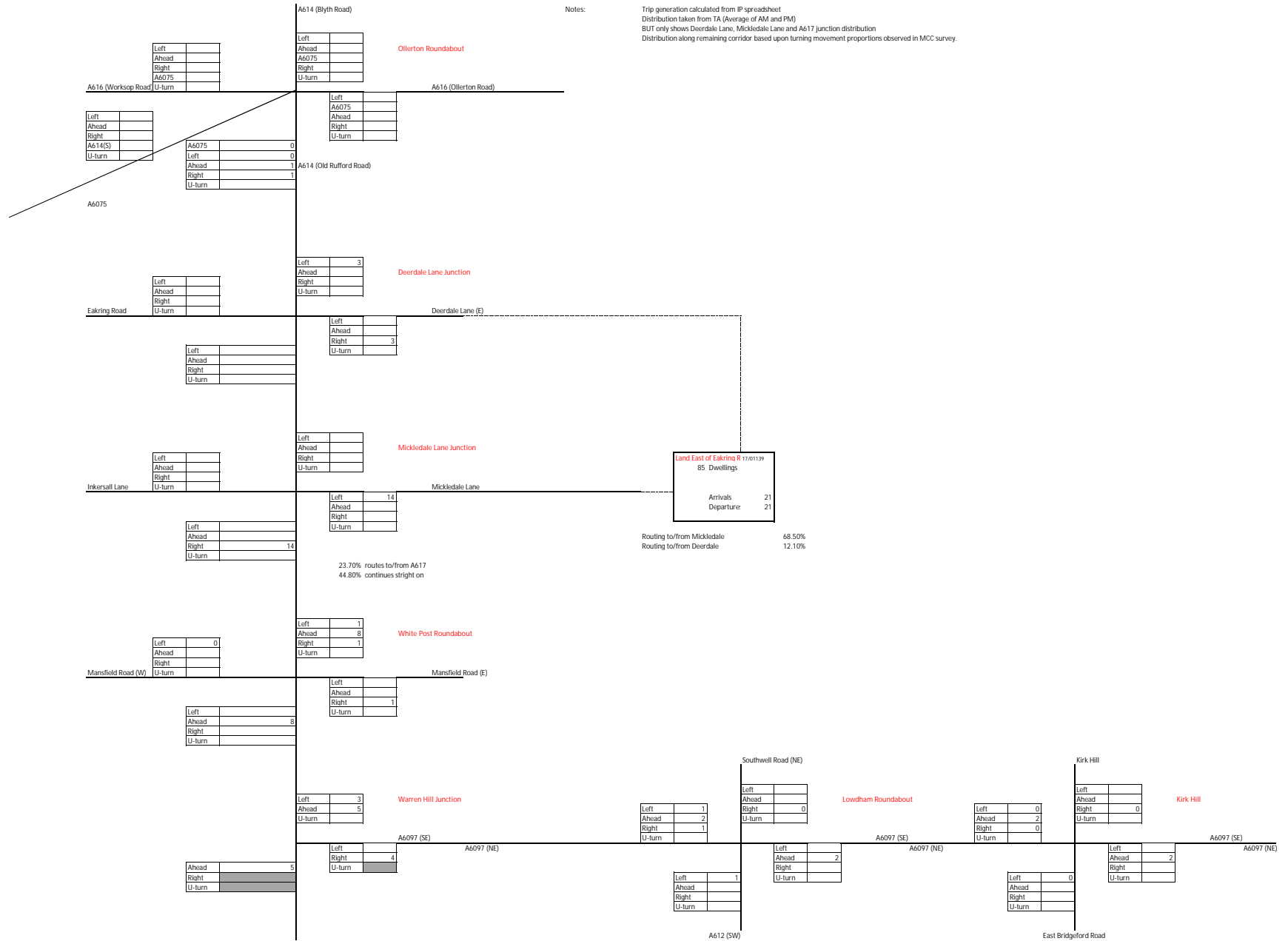




Notes:

Trip generation taken directly from TA  
Distribution taken from TA  
BUT only shows Deerdale Lane, Mickleddale Lane and A617 junction distribution  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.





Traffic Distribution- Kirklington Road  
AM (0730-0830)

Inbound 4.0% Outbound 2.6%

Bolsover 50%

Left	
Ahead	
Right	0
A6075	
U-turn	

Left	
Ahead	
Right	
A614(S)	
U-turn	

A6075	
Left	1
Ahead	0
Right	1
U-turn	

A614 (Blyth Road) Inbound 10.5% Outbound 10.7%

Left	
Ahead	2
A6075	
Right	
U-turn	

Ollerton Roundabout

A616 (Ollerton Road) Lincoln 50%

Left	1
A6075	
Ahead	
Right	
U-turn	

Lincoln Inbound 10.1% Outbound 6.0%

A614	
Left	
Ahead	
Right	
U-turn	

A614 (Old Rufford Road)

Bolsover 25%

Left	
Ahead	
Right	
U-turn	

Left	3
Ahead	
Right	
U-turn	

Deerdale Lane Junction

Eaking Road

Left	
Ahead	
Right	7
U-turn	

Deerdale Lane (E)

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Mickledale Lane Junction

Inkersall Lane

Left	
Ahead	
Right	
U-turn	

Mickledale Lane

Kirklington Road	18.0091
136 Dwellings	
Arrivals	16
Departures	47

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	21
Right	
U-turn	

White Post Roundabout

Mansfield Road (W)

Left	
Ahead	
Right	5
U-turn	

Mansfield Road (E)

Ashfield Inbound 7.3% Outbound 11.0%

Ashfield 25%

Left	
Ahead	
Right	
U-turn	

Left	7
Ahead	13
U-turn	

Warren Hill Junction

Southwell Road (NE)

Left	
Ahead	1
Right	
U-turn	

Lowdham Roundabout

Left	0
Ahead	6
Right	0
U-turn	

Kirk Hill

Left	
Ahead	
Right	0
U-turn	

Kirk Hill

Ahead	3
Right	
U-turn	

Left	
Right	2
U-turn	

A6097 (SE)

A6097 (NE)

A612 (SW)

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	2
Right	
U-turn	

A6097 (NE)

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	1
Right	
U-turn	

A6097 (NE)

Nottingham 75% Ashfield 25%

Inbound 8.2% Outbound 21.7%  
Nottingham 10.0% 9.2%  
Gedling 7.0% 6.9%

Nottingham 25% South Keat 25%

Inbound 7.9% Outbound 6.7%

Notes: Trip generation taken directly from IA  
IP ratio calculated from IP ratio spreadsheet  
Distribution calculated from 2011 journey to Work Data and online route planner

Traffic Distribution- Kirklington Road  
PM (1630-1730)

	Inbound	Outbound
Bolsover	2.6%	4.0%

Bolsover 50%

	Left	Ahead	Right	U-turn
A616 (Workop Road)			1	
A6075				

	Left	Ahead	Right	U-turn
A614(S)				
A6075				

	Left	Ahead	Right	U-turn
A614 (Old Rufford Road)	0	2	1	
A6075				

Bolsover 25%

	Left	Ahead	Right	U-turn
Eaking Road				
A6075				

	Left	Ahead	Right	U-turn
Inkersall Lane				
A6075				

	Left	Ahead	Right	U-turn
Mansfield Road (W)				
A6075				

	Left	Ahead	Right	U-turn
Mansfield Road (W)				
A6075				

	Left	Ahead	Right	U-turn
Mansfield Road (W)				
A6075				

	Left	Ahead	Right	U-turn
Mansfield Road (W)		18		
A6075				

Ashfield Inbound 11.0%  
Outbound 7.3%

Ashfield 25%

	Ahead	Right	U-turn
Ashfield	17		
A6075			

Nottingham 75%  
Ashfield 25%

A614 (Byth Road) Inbound 10.7%  
Outbound 10.5%

	Left	Ahead	Right	U-turn
A614 (Byth Road)		4		
A6075				

Ollerton Roundabout

	Left	Ahead	Right	U-turn
A616 (Ollerton Road)	1			
A6075				

	Left	Ahead	Right	U-turn
A614 (Old Rufford Road)				
A6075				

	Left	Ahead	Right	U-turn
Deerdale Lane Junction	6			
A6075				

Deerdale Lane Junction

	Left	Ahead	Right	U-turn
Deerdale Lane (E)			4	
A6075				

	Left	Ahead	Right	U-turn
Mickledale Lane Junction				
A6075				

Mickledale Lane Junction

	Left	Ahead	Right	U-turn
Mickledale Lane				
A6075				

	Left	Ahead	Right	U-turn
White Post Roundabout	6			
A6075				

White Post Roundabout

	Left	Ahead	Right	U-turn
Mansfield Road (E)				
A6075				

Mansfield Road (E)

	Left	Ahead	Right	U-turn
Warren Hill Junction	2	4		
A6075				

Warren Hill Junction

	Left	Ahead	Right	U-turn
Kirklington Road		2		
A6075				

	Arrivals	Departure
Kirklington Road	41	21
136 Dwellings		

A612 (SW)

Southwell Road (NE)

	Left	Ahead	Right	U-turn
Southwell Road (NE)				
A6075				

	Left	Ahead	Right	U-turn
Lowdham Roundabout				
A6075				

	Left	Ahead	Right	U-turn
Southwell Road (NE)		6		
A6075				

	Left	Ahead	Right	U-turn
Southwell Road (NE)				
A6075				

Nottingham 25%  
South Kest 25%

Kirk Hill

	Left	Ahead	Right	U-turn
Kirk Hill				
A6075				

	Left	Ahead	Right	U-turn
Kirk Hill		4		
A6075				

	Left	Ahead	Right	U-turn
Kirk Hill				
A6075				

East Bridgford Road

Inbound 6.7%  
Outbound 7.9%

Inbound 21.7%  
Outbound 8.2%  
Nottingham 9.2%  
Gedling 10.0%  
Ruscliffe 6.9%  
7.0%

Notes: Trip generation taken directly from TA  
IP ratio calculated from IP ratio spreadsheet  
Distribution calculated from 2011 Journey to Work Data and online route planner

Traffic Distribution- Kirklington Road  
 IP average (1000-1600)  
 Inbound Outbound  
 Bolsover 3.3% 3.3%

Inbound Outbound  
 Basissetlaw 10.6% 10.6%

Notes: Trip generation taken directly from TA  
 IP ratio calculated from IP ratio spreadsheet  
 Distribution calculated from 2011 journey to Work Data and online route planner  
 AM and PM distributions have been averaged to represent the IP scenario.

Bolsover 50%

Lincoln 50%  
 Lincoln Inbound Outbound  
 8.0% 8.0%

Bolsover 25%

Ashfield 25%

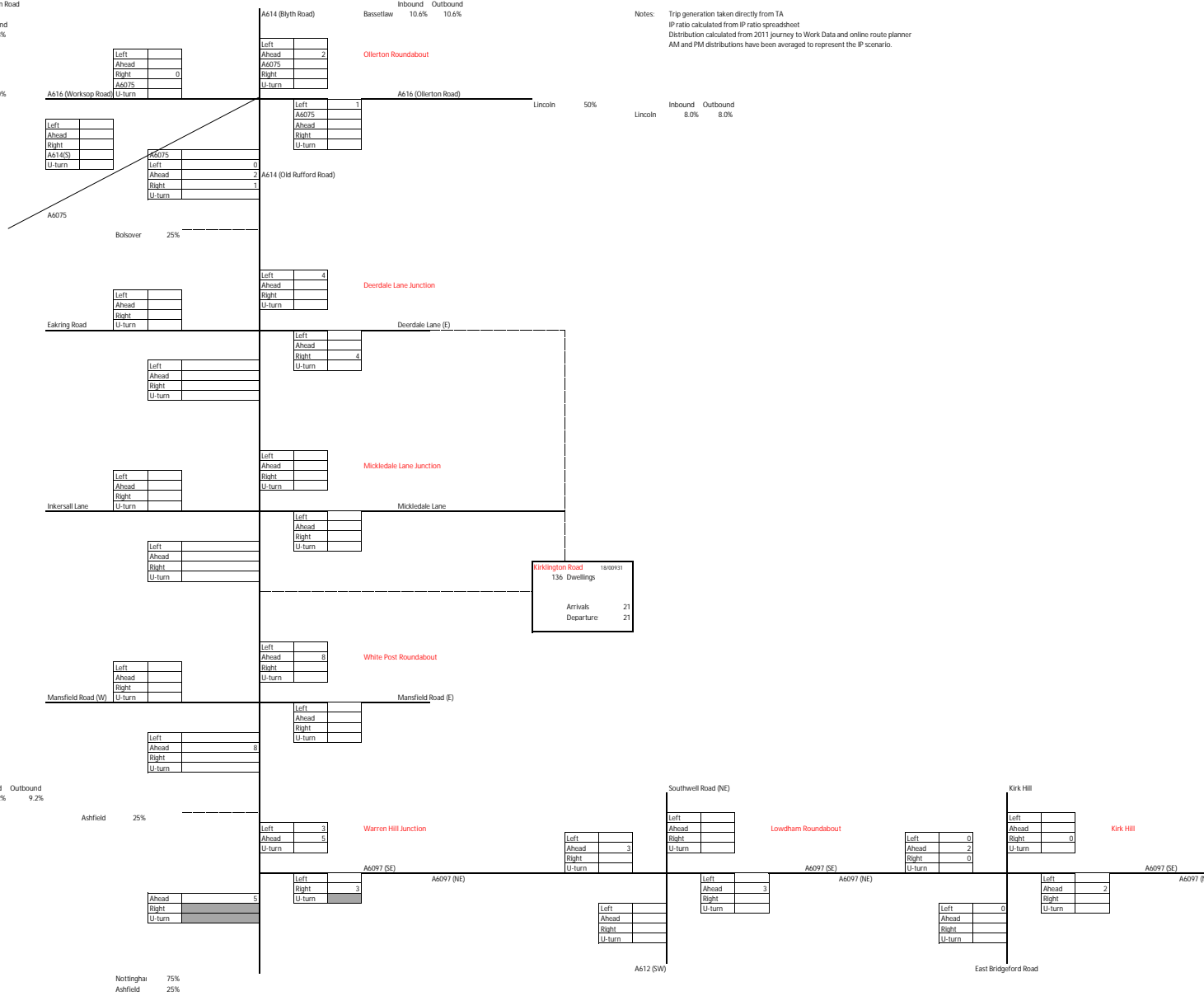
Ashfield Inbound Outbound  
 9.2% 9.2%

Nottingham 75%  
 Ashfield 25%

Inbound Outbound  
 Nottingham 14.9% 14.9%  
 Gedling 9.6% 9.6%  
 Rushcliffe 7.0% 7.0%

Nottingham 25%  
 South Kest 25%

Inbound Outbound  
 South Kest 7.3% 7.3%



Traffic Distribution- Oldbridge Way  
AM (0730-0830)

Inbound 4.0%  
Outbound 2.6%

Bolsover 50%

Left	
Ahead	
Right	0
A6075	
U-turn	

Left	
Ahead	
Right	
A6143	
U-turn	

A6075	
Left	1
Ahead	4
Right	1
U-turn	

Bolsover 25%

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	18
Right	
U-turn	

Left	
Ahead	5
Right	
U-turn	

Ashfield Inbound 7.3%  
Outbound 11.0%

Ashfield 25%

Left	5
Ahead	11
Right	
U-turn	

Ahead	3
Right	
U-turn	

Nottingham 75%  
Ashfield 25%

Inbound 10.5%  
Outbound 10.7%

Notes: Trip generation taken directly from TA  
Distribution calculated from 2011 journey to Work Data and online route planner

A614 (Byth Road)

Left	
Ahead	2
Right	
U-turn	

Ollerton Roundabout

A616 (Ollerton Road) Lincoln 50%

Lincoln Inbound 10.1%  
Outbound 6.0%

Left	1
A6075	
Ahead	
Right	
U-turn	

A614 (Old Rufford Road)

Left	3
Ahead	
Right	
U-turn	

Deerdale Lane Junction

Deerdale Lane (E)

Left	
Ahead	
Right	6
U-turn	

Mickledale Lane Junction

Mickledale Lane

Left	
Ahead	
Right	
U-turn	

Oldbridge Way	16,016/18
113 Dwellings	
Arrivals	16
Departure	39

White Post Roundabout

Mansfield Road (E)

Left	
Ahead	
Right	
U-turn	

Warren Hill Junction

Southwell Road (NE)

Left	
Ahead	5
Right	
U-turn	

Lowdham Roundabout

Kirk Hill

Left	0
Ahead	5
Right	0
U-turn	0

Kirk Hill

Left	
Ahead	0
Right	
U-turn	

A6097 (SE)

A6097 (NE)

A612 (SW)

Left	
Ahead	
Right	
U-turn	

A612 (SW)

A6097 (NE)

Left	
Ahead	2
Right	
U-turn	

A6097 (SE)

A6097 (NE)

Left	0
Ahead	
Right	
U-turn	

East Bridgford Road

A6097 (SE)

Left	
Ahead	1
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Inbound 8.2%  
Outbound 21.7%

Nottingham 10.0%  
Gedling 9.2%  
Rushcliffe 7.0% 6.9%

Nottingham 25%  
South Kest 25%

Inbound 7.9%  
Outbound 6.7%



Traffic Distribution- Oldbridge Way  
PM (1630-1730)

Inbound 2.6%  
Outbound 4.0%

Bolsover 50%

Left	
Ahead	0
Right	
A6075	
U-turn	

Left	
Ahead	
Right	
A6143	
U-turn	

A6075	
Left	0
Ahead	2
Right	1
U-turn	

Bolsover 25%

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	6
Right	
U-turn	

Left	
Ahead	14
Right	
U-turn	

Ashfield Inbound 11.0%  
Outbound 7.3%

Ashfield 25%

Ahead	9
Right	
U-turn	

Nottingham 75%  
Ashfield 25%

Inbound 10.7%  
Outbound 10.5%

Notes: Trip generation taken directly from TA  
Distribution calculated from 2011 journey to Work Data and online route planner

A614 (Byth Road)

Left	
Ahead	3
Right	
U-turn	

Ollerton Roundabout

Left	1
A6075	
Ahead	
Right	
U-turn	

A616 (Ollerton Road) Lincoln 50%

Lincoln Inbound 6.0%  
Outbound 10.1%

Left	
Ahead	2
Right	1
U-turn	

A614 (Old Rufford Road)

Left	5
Ahead	
Right	
U-turn	

Deerdale Lane Junction

Left	
Ahead	
Right	4
U-turn	

Deerdale Lane (E)

Left	
Ahead	
Right	
U-turn	

Mickledale Lane Junction

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Oldbridge Way	16,016/18
113 Dwellings	
Arrivals	32
Departure	20

White Post Roundabout

Left	
Ahead	
Right	
U-turn	

Mansfield Road (E)

Left	2
Ahead	4
U-turn	

Warren Hill Junction

Left	
Ahead	2
Right	
U-turn	

Southwell Road (NE)

Left	
Ahead	
Right	
U-turn	

Lowdham Roundabout

Left	0
Ahead	2
Right	0
U-turn	0

Kirk Hill

Left	
Ahead	0
Right	
U-turn	

Kirk Hill

Left	
Ahead	4
Right	
U-turn	

A6097 (SE) A6097 (NE)

Left	
Ahead	4
Right	
U-turn	

A6097 (SE) A6097 (NE)

Left	1
Ahead	
Right	
U-turn	

East Bridgford Road

Left	
Ahead	3
Right	
U-turn	

A6097 (SE) A6097 (NE)

Inbound 21.7%  
Outbound 8.2%  
Nottingham 9.2%  
Gedling 10.0%  
Ruscliffe 6.9%  
7.0%

Nottingham 25%  
South Kest 25%

Inbound 6.7%  
Outbound 7.9%

Traffic Distribution- Oldbridge Way  
 IP average (1000-1600)  
 Inbound Outbound  
 Bolsover 3.3% 3.3%

Bolsover 50%

Left	
Ahead	
Right	0
A6075	
U-turn	

Left	
Ahead	
Right	
A6143	
U-turn	

A6075	
Left	0
Ahead	2
Right	1
U-turn	

Bolsover 25%

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Ashfield Inbound Outbound  
 9.2% 9.2%

Ashfield 25%

Left	2
Ahead	4
U-turn	

Ahead	4
Right	
U-turn	

Nottingham 75%  
 Ashfield 25%

Inbound Outbound  
 Basissetaw 10.6% 10.6%

Notes: Trip generation taken directly from TA  
 IP ratio calculated from IP ratio spreadsheet  
 Distribution calculated from 2011 journey to Work Data and online route planner  
 Average of the AM and PM is used to calculate the IP

Left	
Ahead	2
Right	
U-turn	

Ollerton Roundabout

Left	1
A6075	
Ahead	
Right	
U-turn	

A616 (Ollerton Road) Lincoln 50%

Lincoln Inbound Outbound  
 8.0% 8.0%

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Left	3
Ahead	
Right	
U-turn	

Deerdale Lane Junction

Left	
Ahead	
Right	3
U-turn	

Deerdale Lane (E)

Left	
Ahead	
Right	
U-turn	

Mickledale Lane Junction

Left	
Ahead	
Right	
U-turn	

Oldbridge Way	16,016/18
113 Dwellings	
Arrivals	18
Departure	18

Left	
Ahead	
Right	
U-turn	

White Post Roundabout

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

Mansfield Road (E)

Left	2
Ahead	4
U-turn	

Warren Hill Junction

Left	
Ahead	
Right	2
U-turn	

Southwell Road (NE)

Left	
Ahead	
Right	
U-turn	

Lowdham Roundabout

Left	0
Ahead	2
Right	0
U-turn	

Kirk Hill

Left	
Ahead	
Right	0
U-turn	

Kirk Hill

Left	
Ahead	
Right	
U-turn	

A6097 (SE) A6097 (NE)

Left	
Ahead	
Right	
U-turn	

A6097 (SE) A6097 (NE)

Left	
Ahead	
Right	
U-turn	

Left	
Ahead	
Right	
U-turn	

A6097 (SE) A6097 (NE)

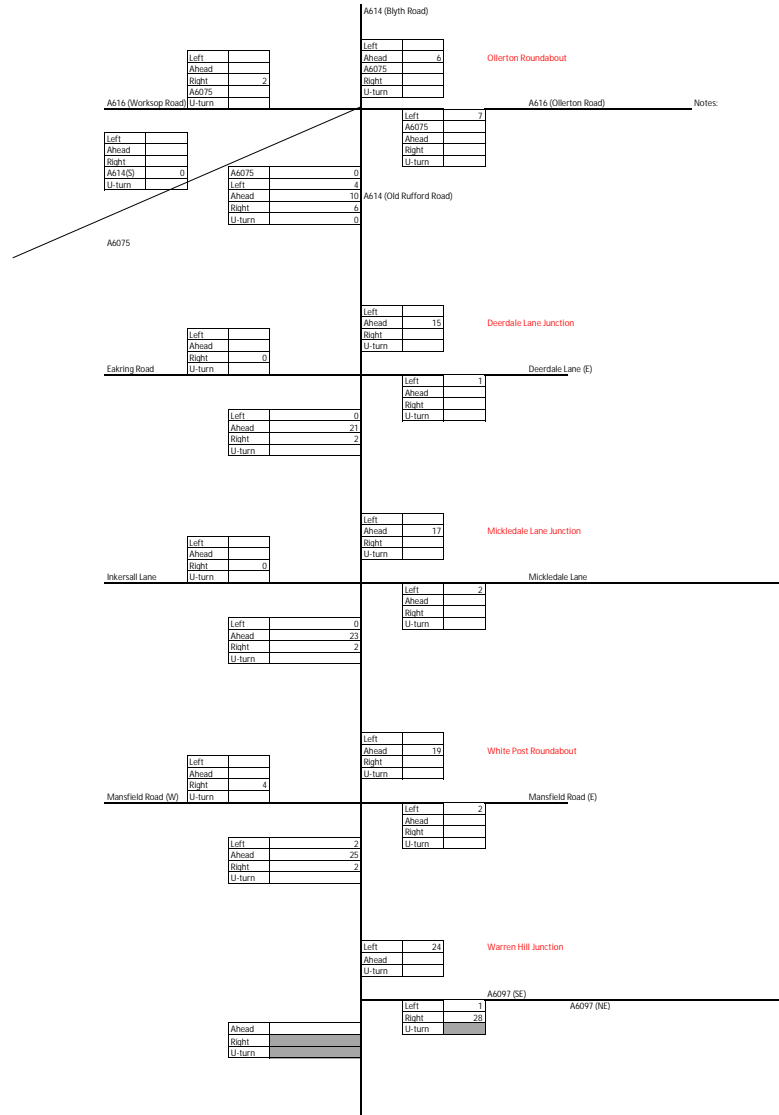
A612 (SW)

East Bridgford Road

Inbound Outbound  
 Nottingham 14.9% 14.9%  
 Gedling 9.6% 9.6%  
 Rushcliffe 7.0% 7.0%

Nottingham 25%  
 South Kest 25%

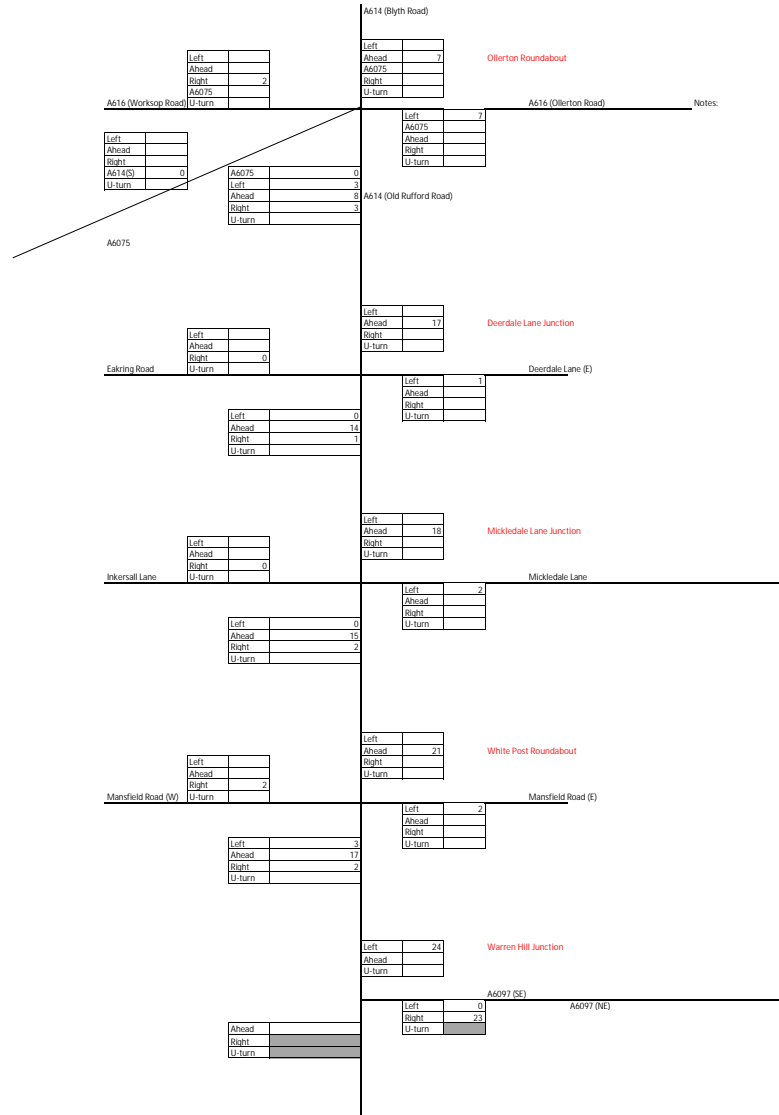
Inbound Outbound  
 South Kest 7.3% 7.3%



Distribution of traffic: shown in the TA  
Routing down the A6097:  
Residential: 15.60%  
Employment (B.G.V): 28%  
Employment (R.G.V): 10%  
Average: 17.87%

Trip generation taken directly from TA. Trip generation for each component not available (has been approximated in the IP ratio calculation)  
Trip Distribution taken as an average of the proportion routing down the A6097  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

<b>Bingham</b>		100% turnout
1,000 Dwellings		
55740 sqm Employment		
Arrivals	203	
Departure	251	

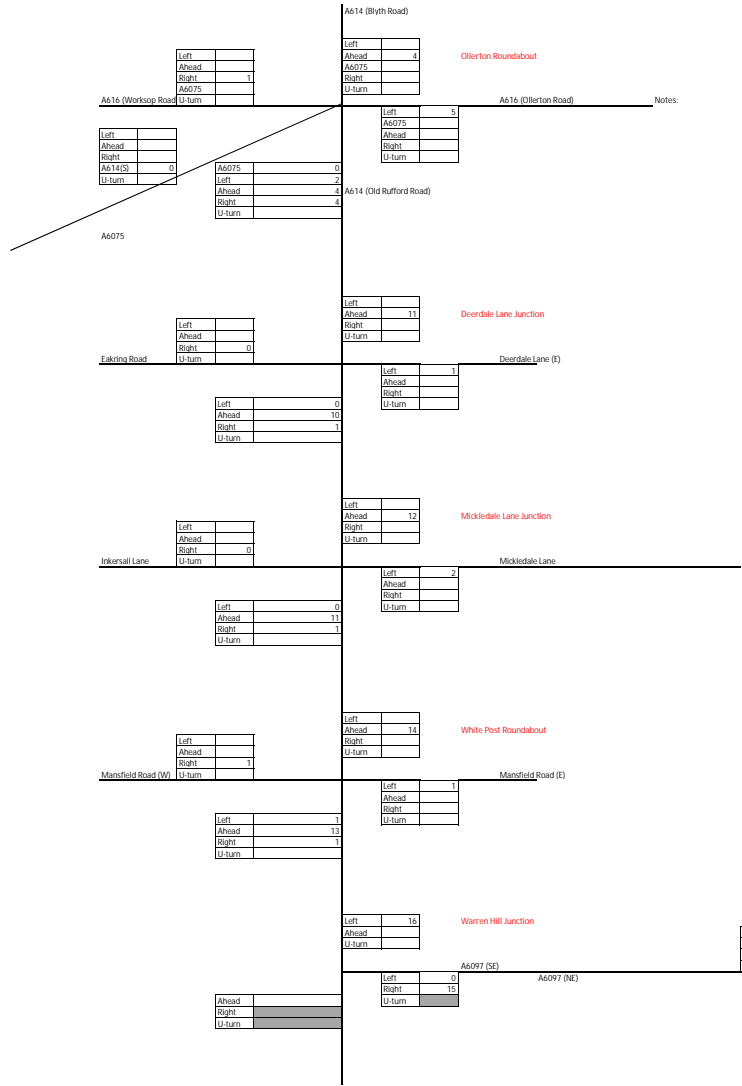


Distribution of traffic shown in the TA  
Routing down the A6097:  
Residential: 15.60%  
Kirk Hill us Employment (E.G.V): 28%  
Employment (R.G.V): 10%  
Average: 17.87%

Trip generation taken directly from TA. Trip generation for each component not available (has been approximated in the IP ratio calculation)  
Trip Distribution taken as an average of the proportion routing down the A6097  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

<b>Bingham</b>	1000000
1,000 Dwellings	
55740 sqm Employment	
Arrivals	212
Departure	186

Traffic Distribution: Bingham  
IP Average: (1000-1600)

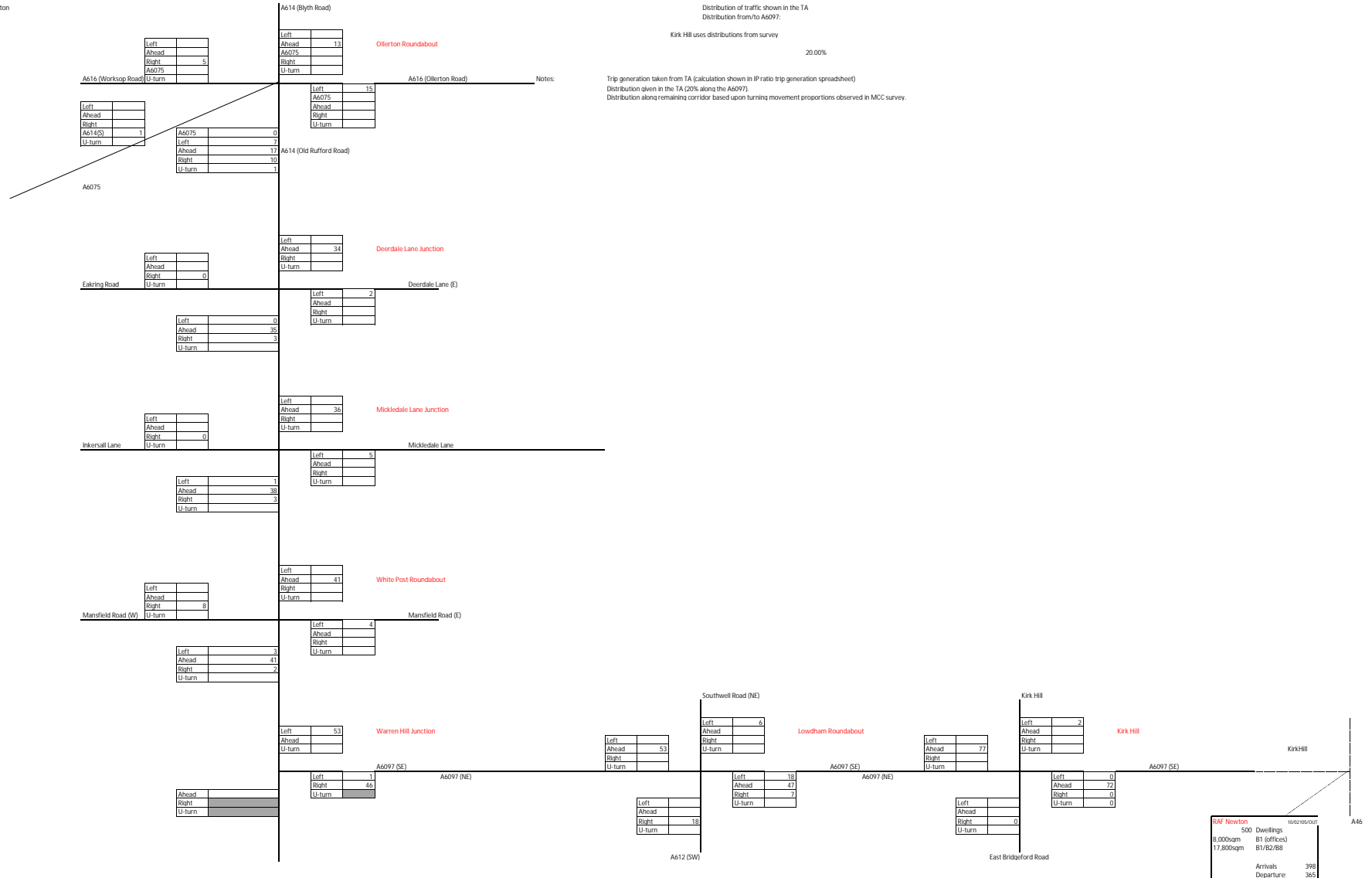


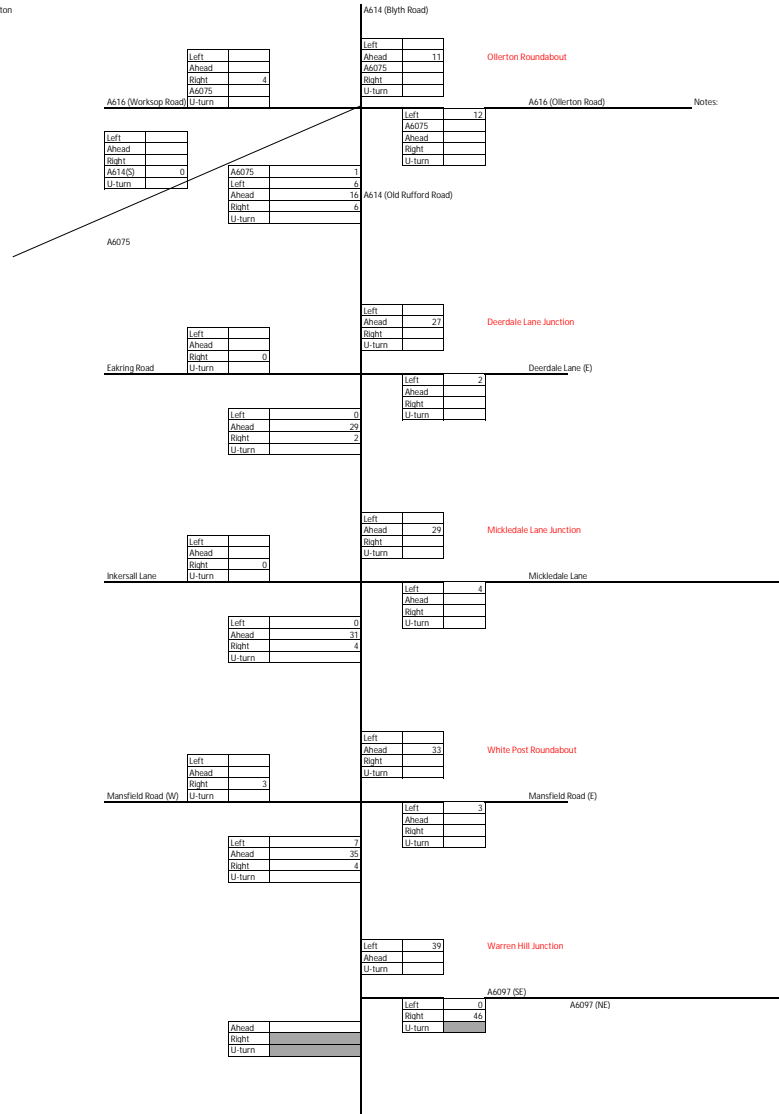
Distribution of traffic shown in the TA  
Routing down the A6097:  
Residential: 15.60%  
Kirk Hill us Employment (LGV): 28%  
Employment (HGV): 10%  
Average: 17.87%

Trip generation taken directly from TA. Trip generation for each component not available (has been approximated in the IP ratio calculation)  
Trip Distribution taken as an average of the proportion routing down the A6097  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

<b>Bingham</b>	1000162000
1,000 Dwellings	
55740 sqm Employment	
Arrivals	168
Departure	155



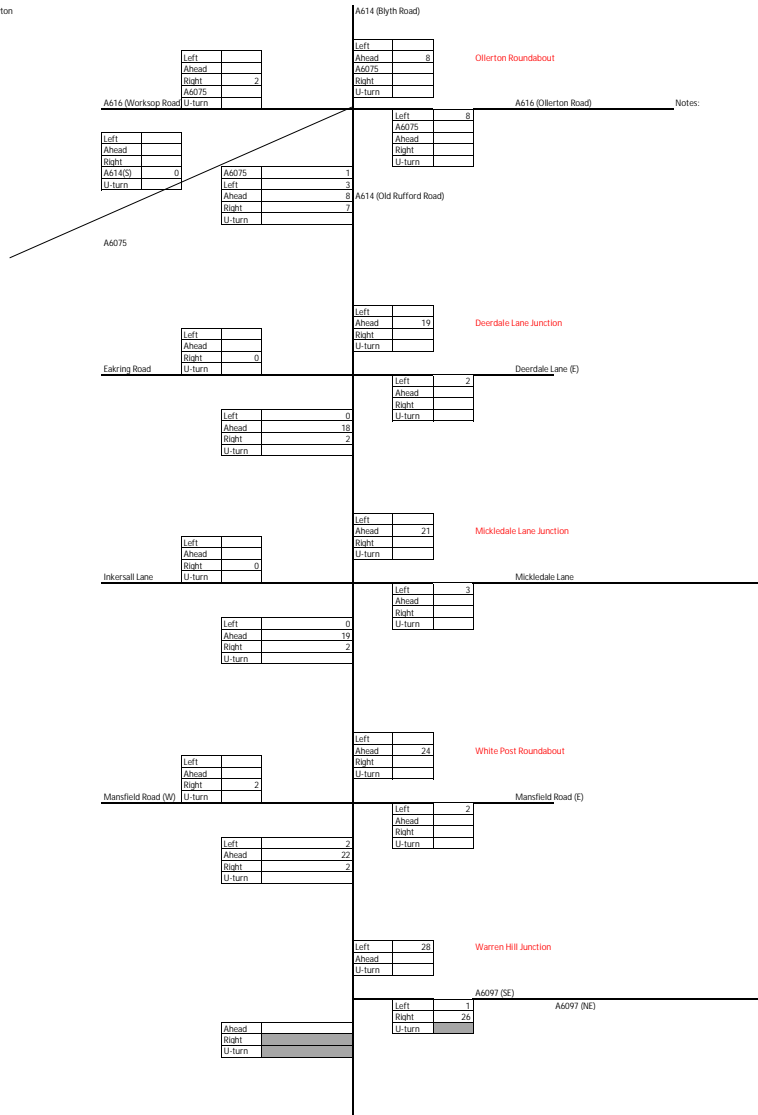




Kirk Hill uses distributions from survey  
20%

Trip generation taken from TA (calculation shown in IP ratio trip generation spreadsheet)  
Distribution given in the TA (20% along the A6097)  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

<b>RAF Newton</b>		1602165/017	
500 Dwellings	B1 (offices)		
8,000sqm	B1/B2/B8		
17,800sqm			
Arrivals		306	
Departure		340	

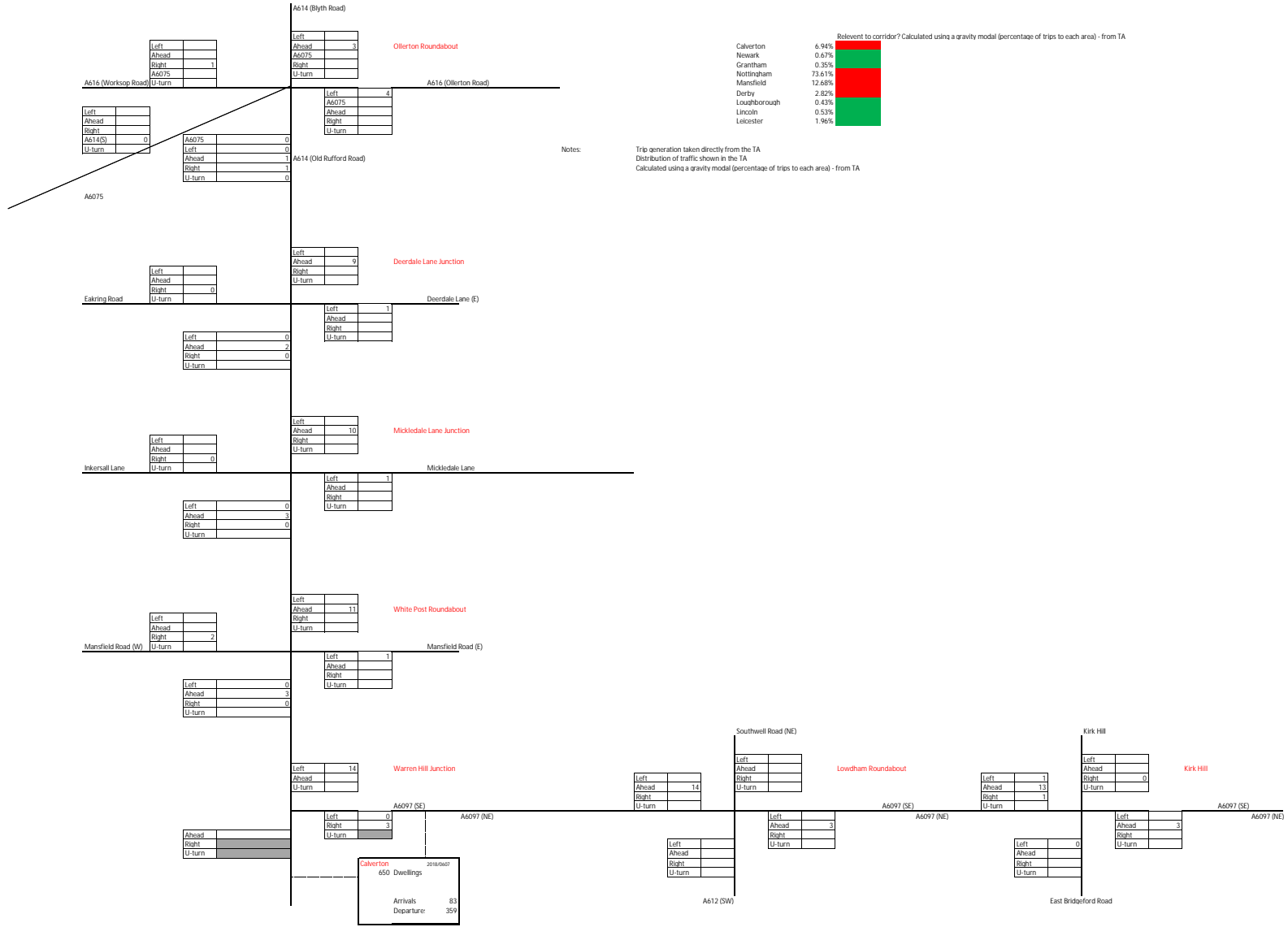


Kirk Hill uses distributions from survey

20%

Notes:  
Trip generation taken from TA (calculation shown in IP ratio trip generation spreadsheet)  
IP trip generation calculated in IP Ratio Trip gen spreadsheet  
Distribution given in the TA (20% along the A6097).  
Distribution along remaining corridor based upon turning movement proportions observed in MCC survey.

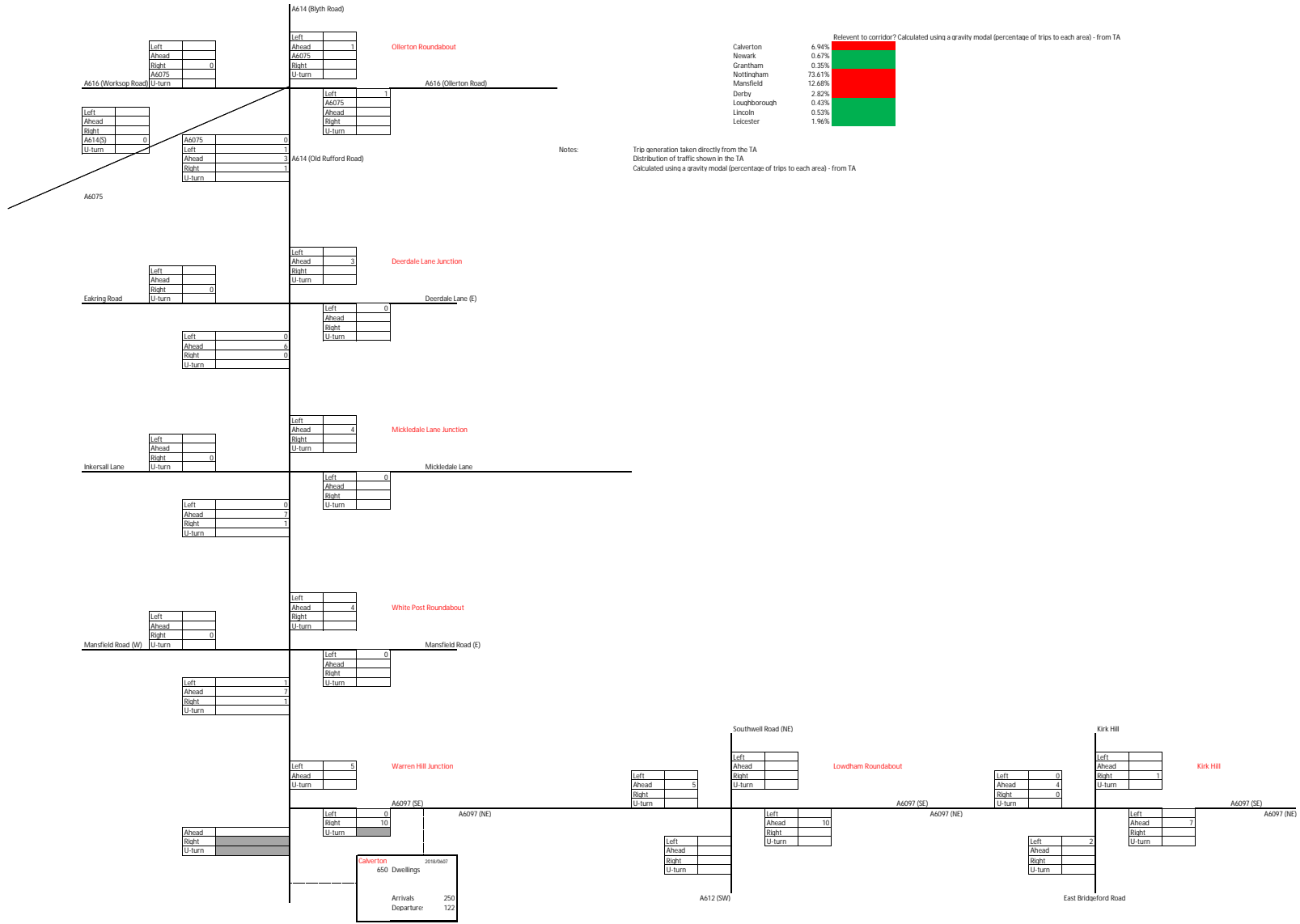
<b>RAF Newton</b>	500 Dwellings	1000/1600/2000
	8,000sqm	81 (offices)
	17,800sqm	81/82/88
	Arrivals	265
	Departure	241



Location	Percentage	Relevant to corridor?
Calverton	6.94%	Yes
Newark	0.67%	No
Grantham	0.35%	No
Nottingham	73.61%	Yes
Mansfield	12.60%	Yes
Derby	2.82%	No
Loughborough	0.43%	No
Lincoln	0.53%	No
Leicester	1.96%	No

Notes:  
Trip generation taken directly from the TA  
Distribution of traffic shown in the TA  
Calculated using a gravity modal (percentage of trips to each area) - from TA

Leicester	1.96%
Lincoln	0.53%
Loughborough	0.43%
Grantham	0.35%
Newark	0.67%
<b>Total</b>	<b>3.94%</b>



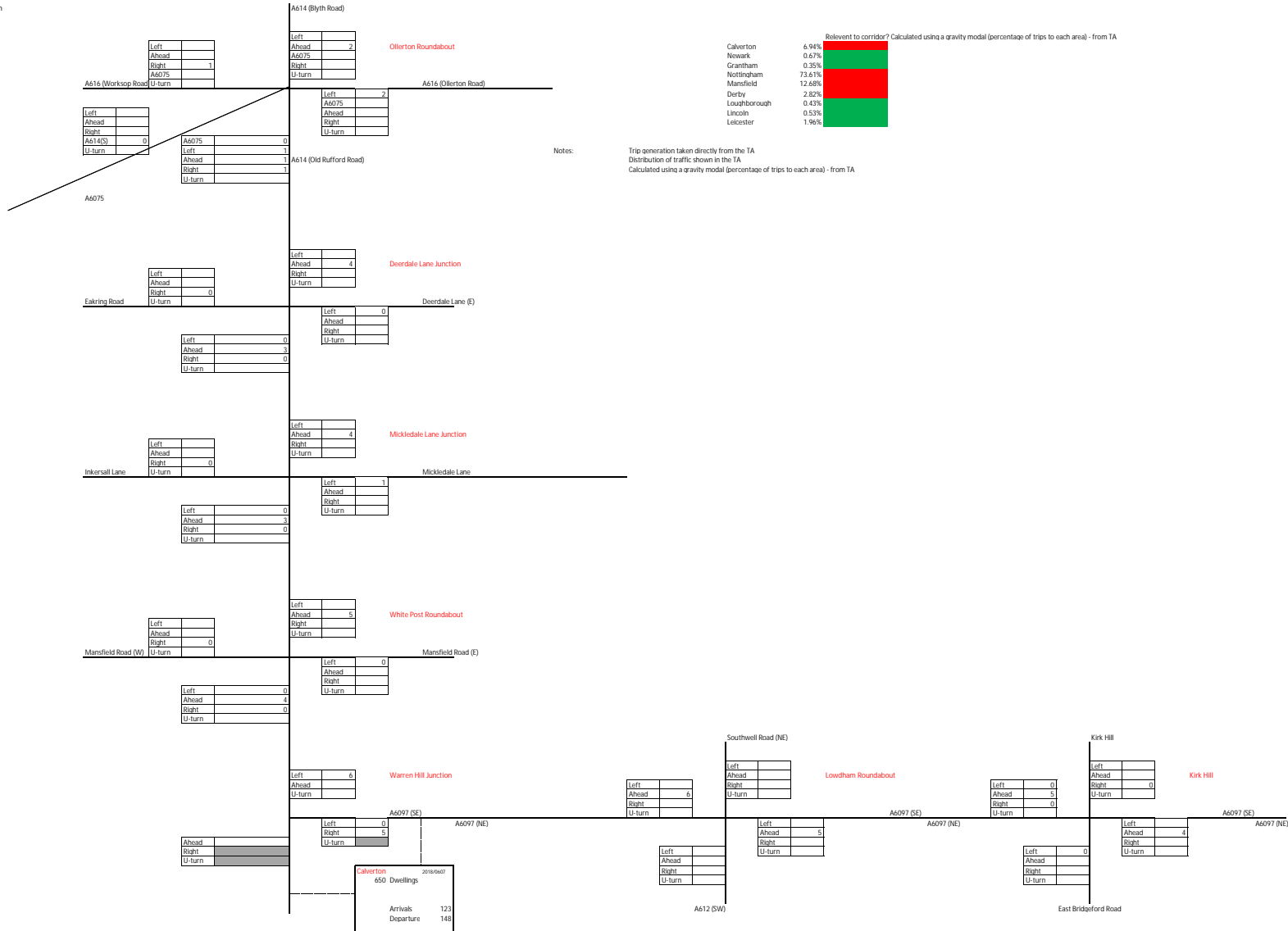
Relevant to corridor? Calculated using a gravity modal (percentage of trips to each area) - from TA

Calverton	6.94%
Newark	0.67%
Grantham	0.35%
Nottingham	73.61%
Mansfield	12.60%
Derby	2.82%
Loughborough	0.43%
Lincoln	0.53%
Leicester	1.96%

Notes:  
Trip generation taken directly from the TA  
Distribution of traffic shown in the TA  
Calculated using a gravity modal (percentage of trips to each area) - from TA

Leicester	1.96%
Lincoln	0.53%
Loughborough	0.43%
Grantham	0.35%
Newark	0.67%
Total	3.94%

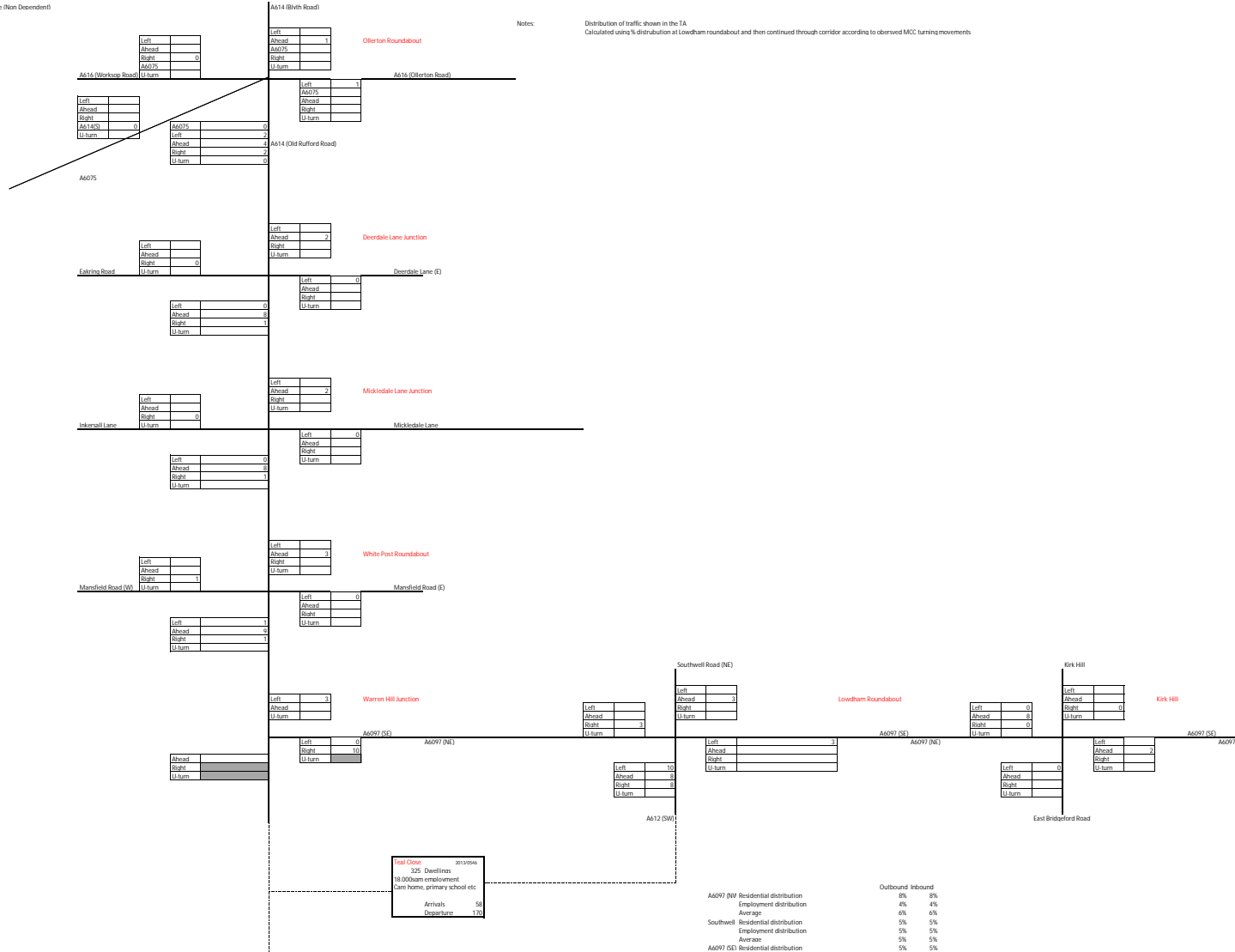




Relevant to corridor? Calculated using a gravity modal (percentage of trips to each area) - from TA

Calverton	6.94%
Newark	0.67%
Grantham	0.35%
Nottingham	73.61%
Mansfield	12.68%
Derby	2.82%
Loughborough	0.43%
Lincoln	0.53%
Leicester	1.96%

Leicester	1.96%
Lincoln	0.53%
Loughborough	0.43%
Grantham	0.35%
Newark	0.67%
Total	3.94%



Notes: Distribution of traffic shown in the TA  
Calculated using % distribution at Lovelham roundabout and then continued through corridor according to observed MCC turning movements

**Total Close** 2019/20  
325 Dwellings  
16,000am employment  
Retail, primary school etc.  
Arrivals 58  
Departure 170

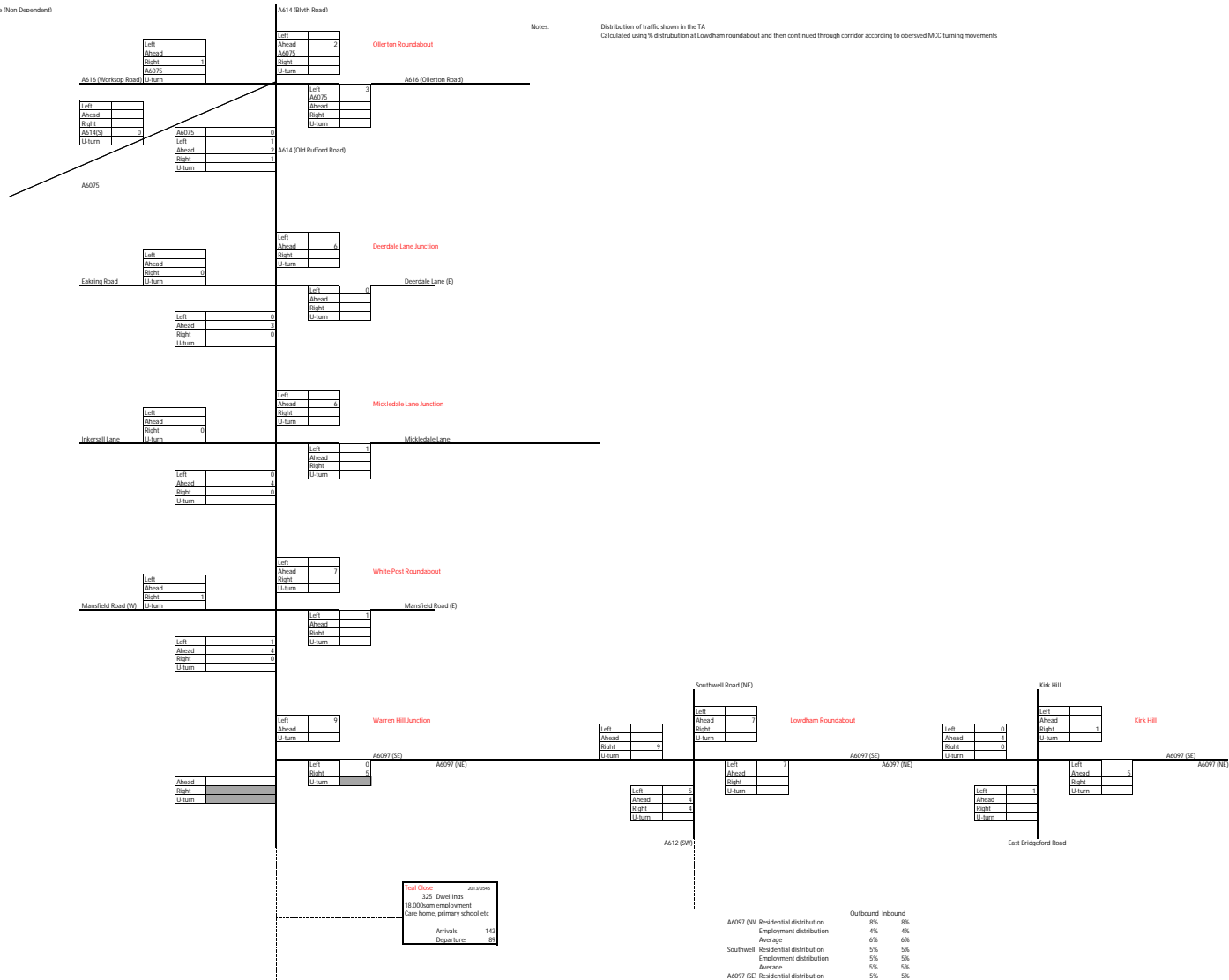
A6097 (NW)	Residential distribution	8%	8%
	Employment distribution	4%	4%
	Average	4%	4%
Southwell	Residential distribution	5%	5%
	Employment distribution	5%	5%
	Average	5%	5%
A6097 (SE)	Residential distribution	5%	5%
	Employment distribution	5%	5%
	Average	5%	5%

Trigger Point (dwellings) 325

Residential Trip generation

AM	PM				
Arrivals	Departure	Arrivals	Departures		
Rate (per c	0.177	0.523	0.439	0.274	
830	147	434	364	227	
325	58	170	143	89	
Chance	89	264	222	138	

Assumed that employment is DEPENDENT  
i.e. only when Lovelham roundabout is improved will employment be built!  
Only 325 houses will be built now until Lovelham improved!



Notes: Distribution of traffic shown in the TA  
Calculated using % distribution at Lowdham roundabout and then continued through corridor according to observed MCC turning movements

**Total Close** 2019/20  
325 Dwellings  
16,000em employment  
Retail, home, primary school etc.  
Arrivals 143  
Departure 89

	Outbound	Inbound
A6097 (W) Residential distribution	8%	8%
Employment distribution	4%	4%
Average	6%	6%
Southwell Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%
A6097 (S) Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%

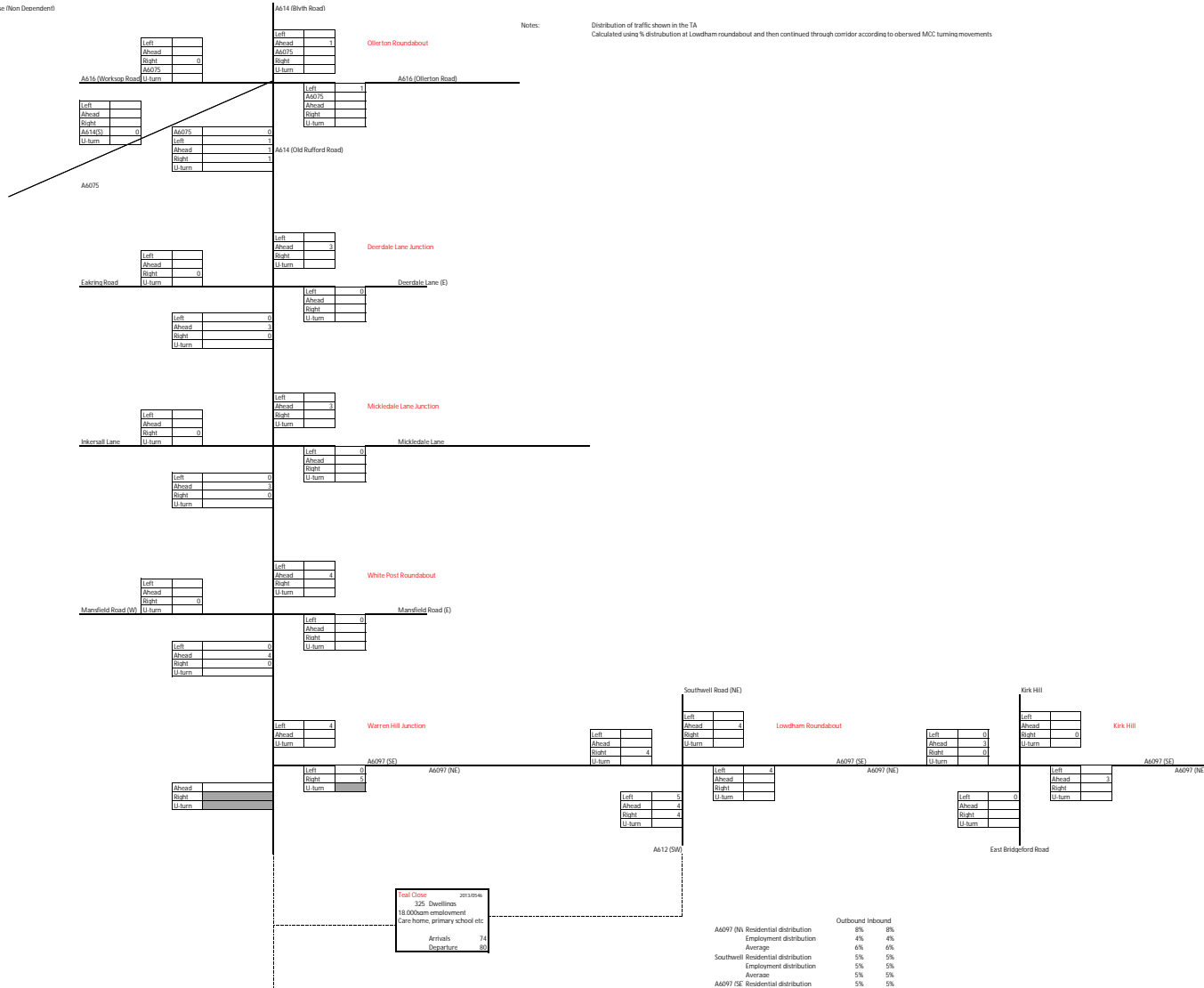
Trigger Point (dwellings) 325

Residential Trip generation

AM	PM			
Arrivals	Departure			
Rate (per c)	0.177	0.523	0.439	0.274
830	147	434	364	227
325	58	170	143	89
Chance	89	264	222	138

Assumed that employment is DEPENDENT  
ie. only when Lowdham roundabout is improved will employment be built!  
(Only 325 houses will be built now until Lowdham improved!)

Traffic Distribution- Trial Close (Non Dependent)  
 P average 19000 16000



Notes: Distribution of traffic shown in the TA  
 Calculated using % distribution at Lowtham roundabout and then continued through corridor according to observed MCC turning movements

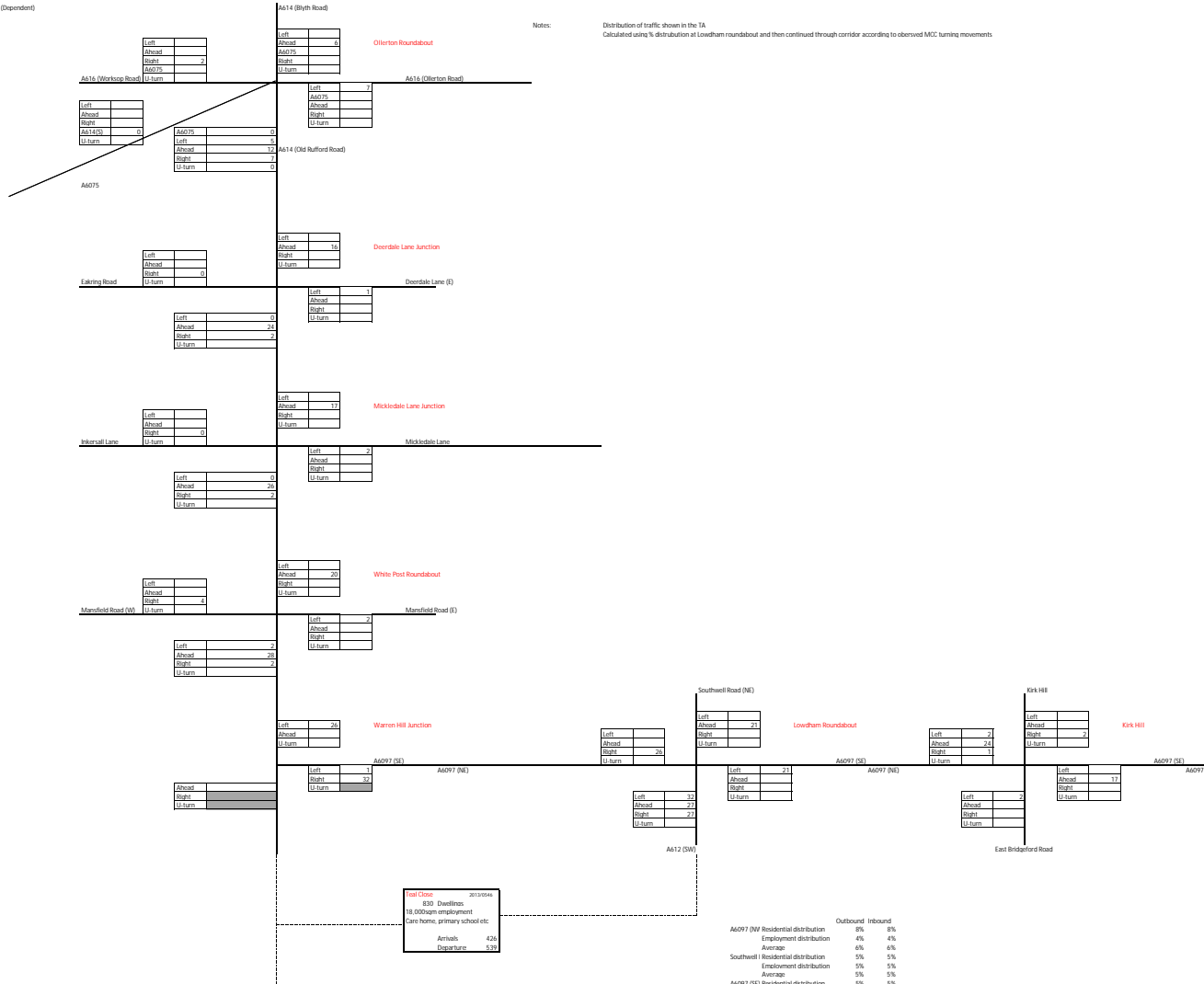
Triquet Point (dwellings) 325

Residential Trip-generation

AM	PM	Rate (per 1000)	Arrivals	Departure	Arrivals	Departures
0.177	0.523	0.439	0.274			
830	147	434	364	227		
325	58	170	143	89		
Change	-89	-264	-222	-138		

Assumed that employment is DEFENDANT  
 Is only when Lowtham roundabout is improved will employment be built  
 Only 325 houses will be built now (until Lowtham improved)

	Outbound	Inbound
A6097 (W) Residential distribution	8%	8%
Employment distribution	4%	4%
Average	6%	6%
Southwell Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%
A6097 (E) Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%



Tripper Point (dwellings) 325

Residential Trip generation

AM	PM
Arrivals	Departure
Departure	Arrivals
Departures	Departures

Rate per c

	0.717	0.923	0.439	0.274
B30	147	434	364	227
325	58	170	143	89
Chance	89	264	222	138

Total Trip generation

AM	PM
Arrivals	Departure
Departure	Arrivals
Departures	Departures

Unconstrained 426 539 431 463

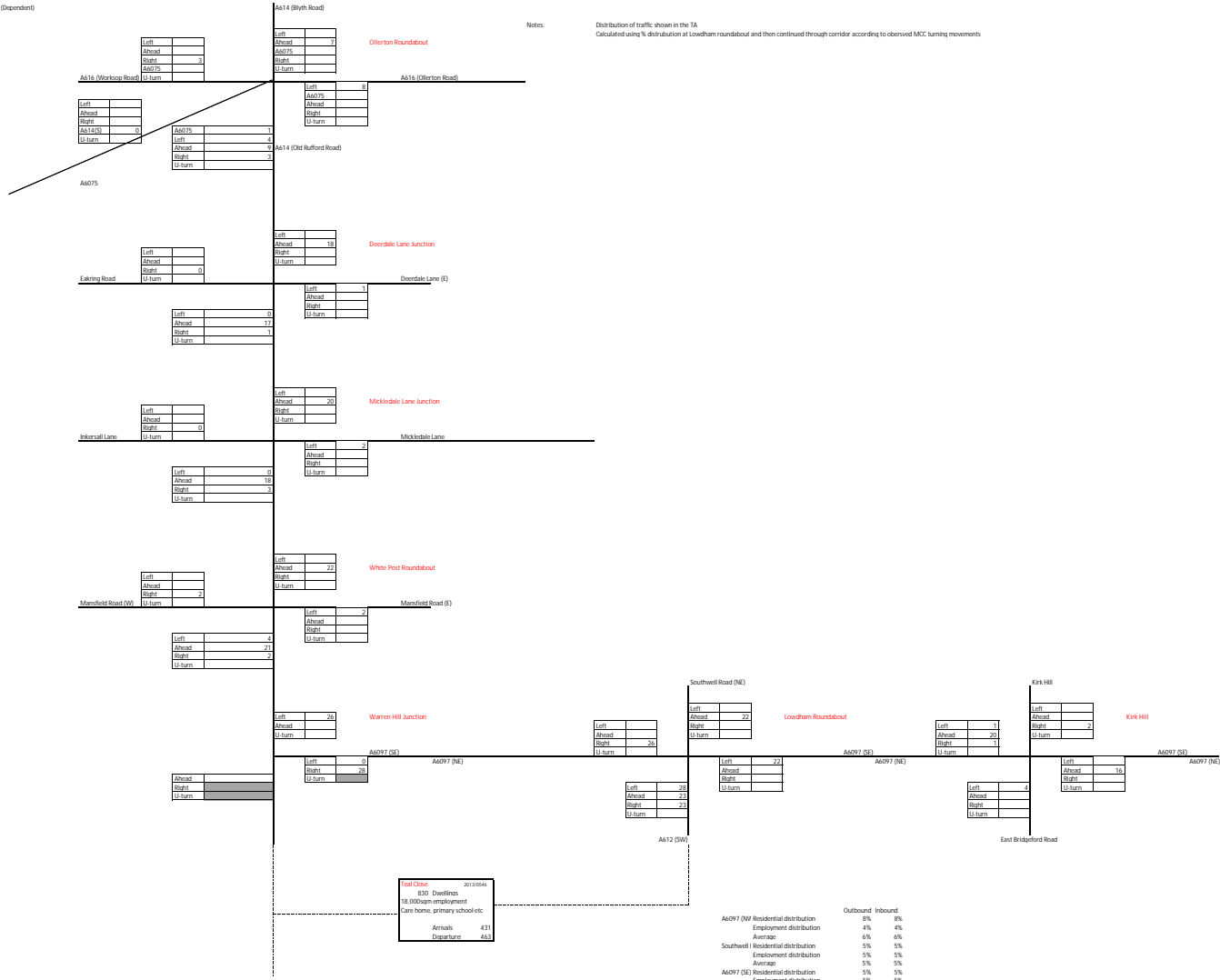
Constrained (Lowtham) 337 275 209 325

**Toll Cote** 30133944  
B30 Dwellings  
18,000sqm employment  
Care home, primary school etc  
Arrivals: 426  
Departures: 539

	Outbound	Inbound
A6097 (NW) Residential distribution	8%	8%
Employment distribution	4%	4%
Average	6%	6%
Southwell (Residential distribution)	5%	5%
Employment distribution	5%	5%
Average	5%	5%
A6097 (SE) Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%

**Assumes all houses and employment land built out**





Notes: Distribution of traffic shown in the TA. Calculated using % distribution at Lowtham roundabout and then continued through corridor according to observed MCC turning movements.

**Tool Close** 2019/04  
830 Dwellings  
18,000sqm employment  
Care home, primary school etc.  
Arrivals: 431  
Departures: 463

	Outbound	Inbound
A6097 (W) Residential distribution	8%	8%
Employment distribution	4%	4%
Average	6%	6%
Southwell Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%
A6097 (SE) Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%

Tripper Point (dwellings) 325

Residential Trip generation

AM	PM
Arrivals	Departure
Departure	Arrivals
Departures	Departures

Rate per c 0.173 0.223 0.439 0.274

830	147	434	364	227
325	58	170	143	89
Change	-89	-244	-222	-138

Total Trip generation

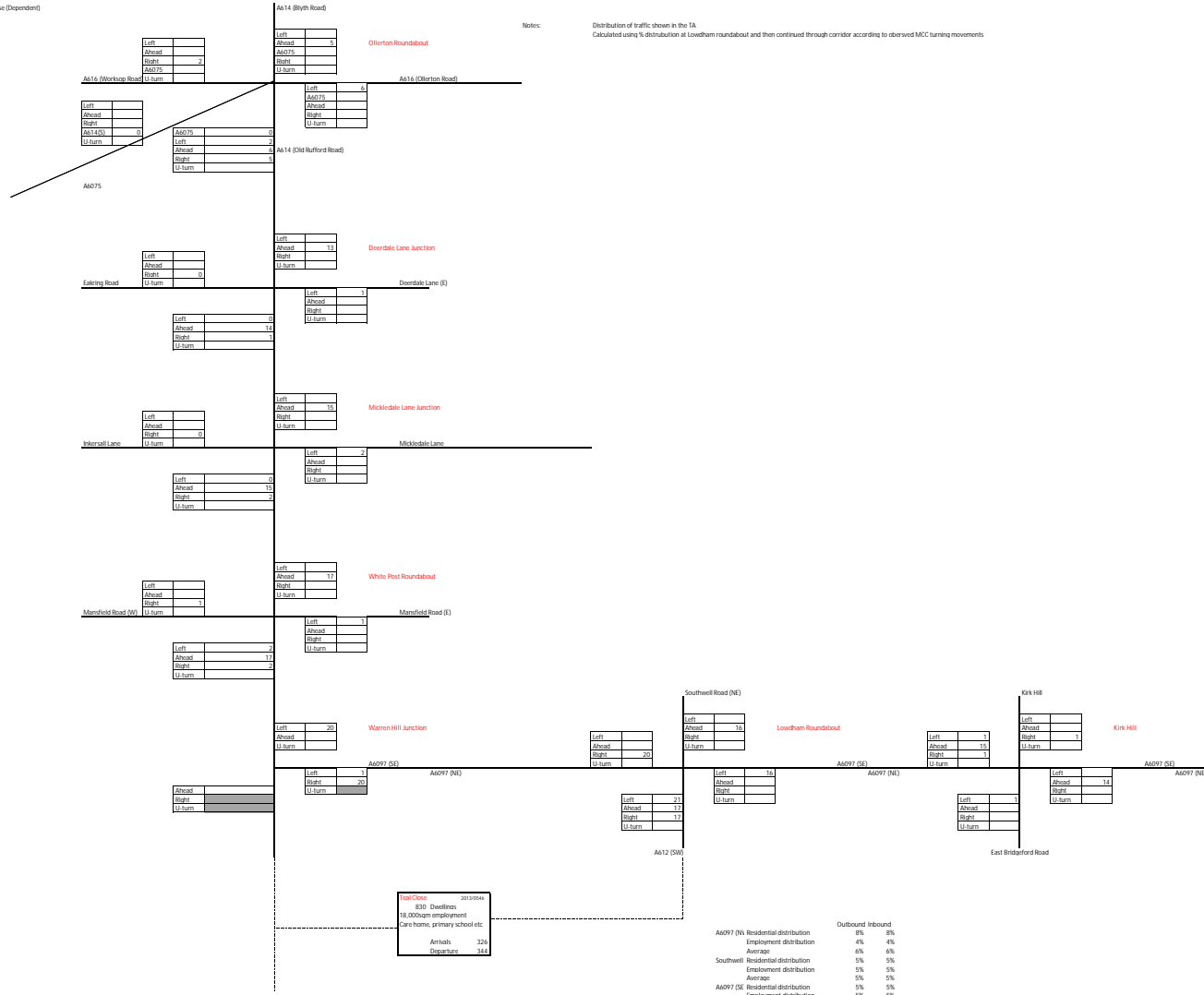
AM	PM
Arrivals	Departure
Departure	Arrivals
Departures	Departures

Unconstrained 424 539 431 463

Constrained (Lowtham) 337 275 209 325

**Assumes all houses and employment land built out**

Traffic Distribution - Total Closes (Dependent)  
 @ average 1500-1600



Notes: Distribution of traffic shown in the TA  
 Calculated using % distribution at Lowham roundabout and then continued through corridor according to observed MCC turning movements

**Total Closes** 2015/2016  
 830 Dwellings  
 18,000sqm employment  
 Care homes, primary school etc  
 Arrivals 326  
 Departures 344

	Outbound	Inbound
A6075 (W) Residential distribution	8%	8%
Employment distribution	4%	4%
Average	6%	6%
Southwell Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%
A6075 (E) Residential distribution	5%	5%
Employment distribution	5%	5%
Average	5%	5%

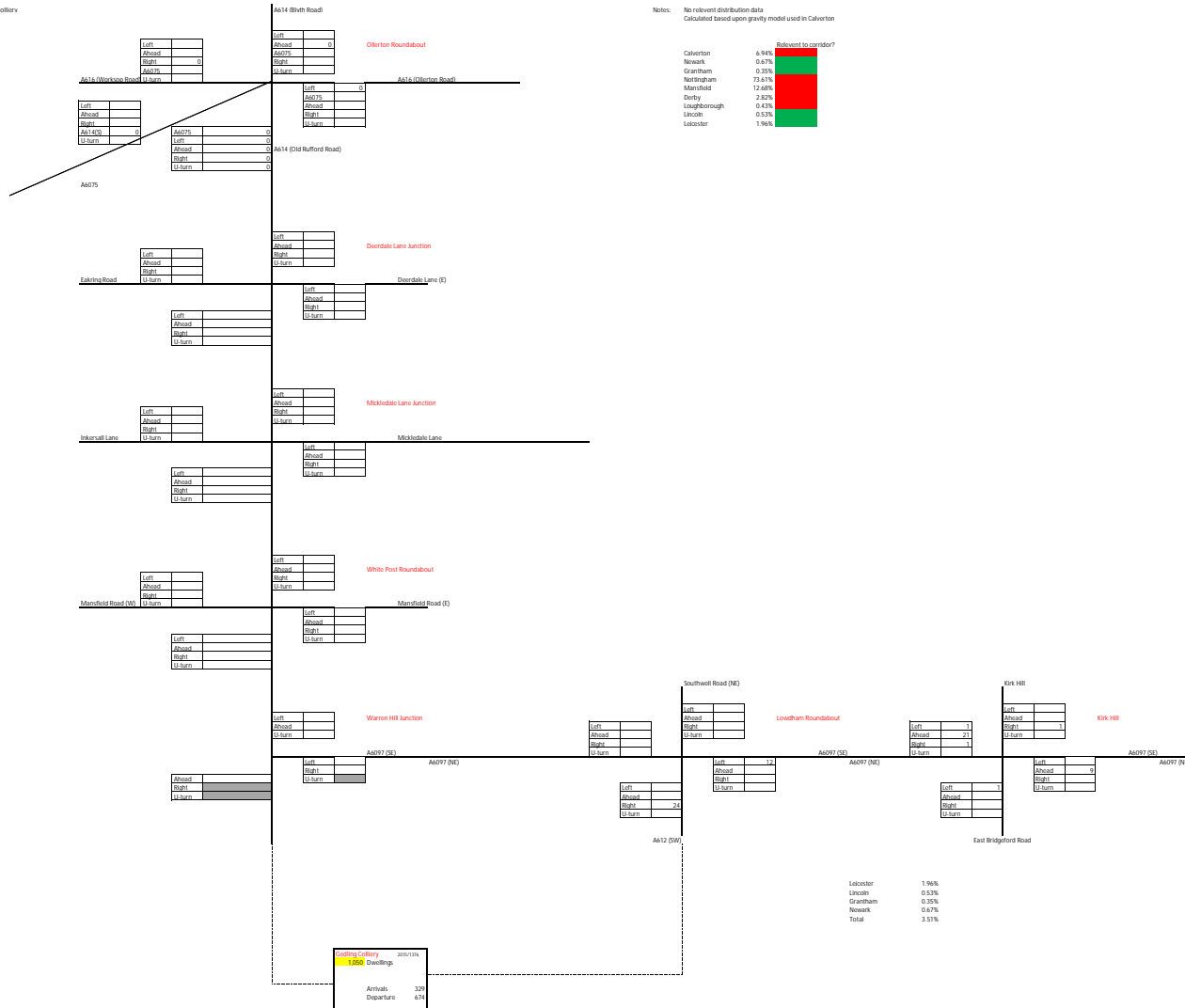
Trapper Point (dwellings) 325

Residential Trip-generation					
	AM		PM		
	Arrivals	Departure	Arrivals	Departure	
Rate per c	0.117	0.132	0.439		
830	147	434	364		227
325	38	170	143		89
Change	49	264	-222		-138

Total trip generation

	AM		PM		
	Arrivals	Departure	Arrivals	Departure	
Unconstrained	426	519	431		463
Constrained (Lowham)	337	275	209		325

**Assumes all houses and employment land built out**



Notes: No relevant distribution data  
Calculated based upon gravity model used in Calverton

Location	Percentage
Calverton	6.94%
Newark	0.67%
Grantham	0.35%
Nottingham	21.61%
Manfield	12.68%
Derby	2.82%
Loughborough	0.43%
Lipson	0.53%
Leicester	1.96%

Leicester	1.96%
Lipson	0.53%
Grantham	0.35%
Newark	0.67%
Total	5.51%

	AM		PM		Departures
	Arrivals	Departures	Arrivals	Departures	
Rate (per :)	0.235	0.588	0.519	0.259	
Dwellings	1050	247	617	545	272

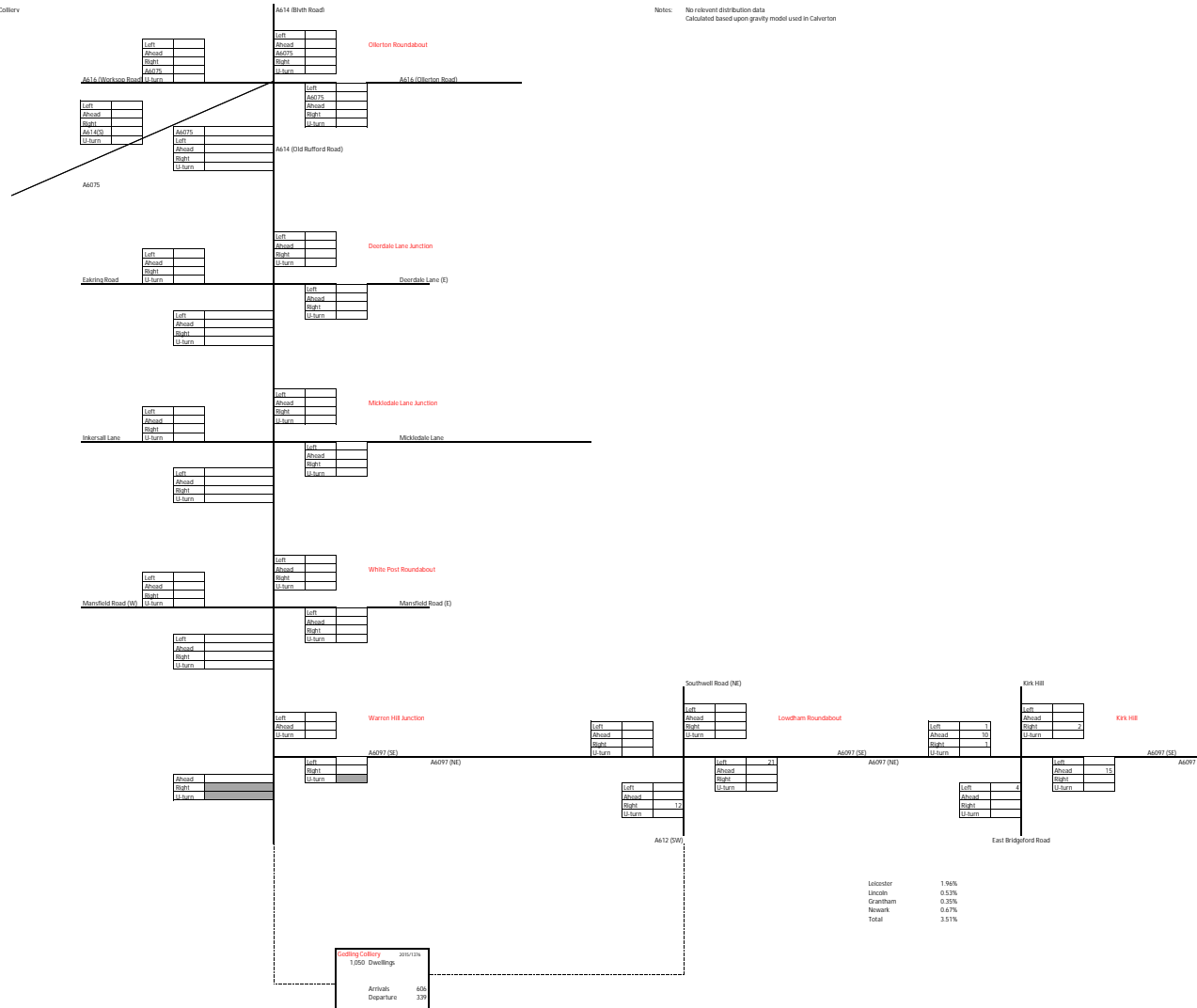
	AM		PM		Departures
	Arrivals	Departures	Arrivals	Departures	
Rate (per :)	0.9%	0.558	0.156	0.287	
Industrial units	5334	56	31	8	16
Public House	0	0	2,921	2,431	
Rate (per :)	0	0	23	19	
Drive Thru	9.6	9	11,429	11,297	
Rate (per :)	280	27	25	32	
	82	56	61	67	

Arrivals 329  
Departure 671

Trip rates from Travel Plan

Trip rates from TRICS (Excludes Saturdays and Sundays). PM peak hour is 1800 - 1900 (Busiest hour in PM period (1600 - 1900))

Trip rates from TRICS (Excludes Saturdays and Sundays). AM peak hour is 0800 - 0900 (Busiest hour in AM period (0700 - 1000)) and PM Peak is 1800-1900 (Busiest in PM peak (1600-1900))



Residential Trip-generation		AM		PM	
	Rate (per 1,000 Dwellings)	Arrivals	Departure	Arrivals	Departures
Dwellings	0.235	0.588	0.519	0.259	
		1,050	247	617	545
					272

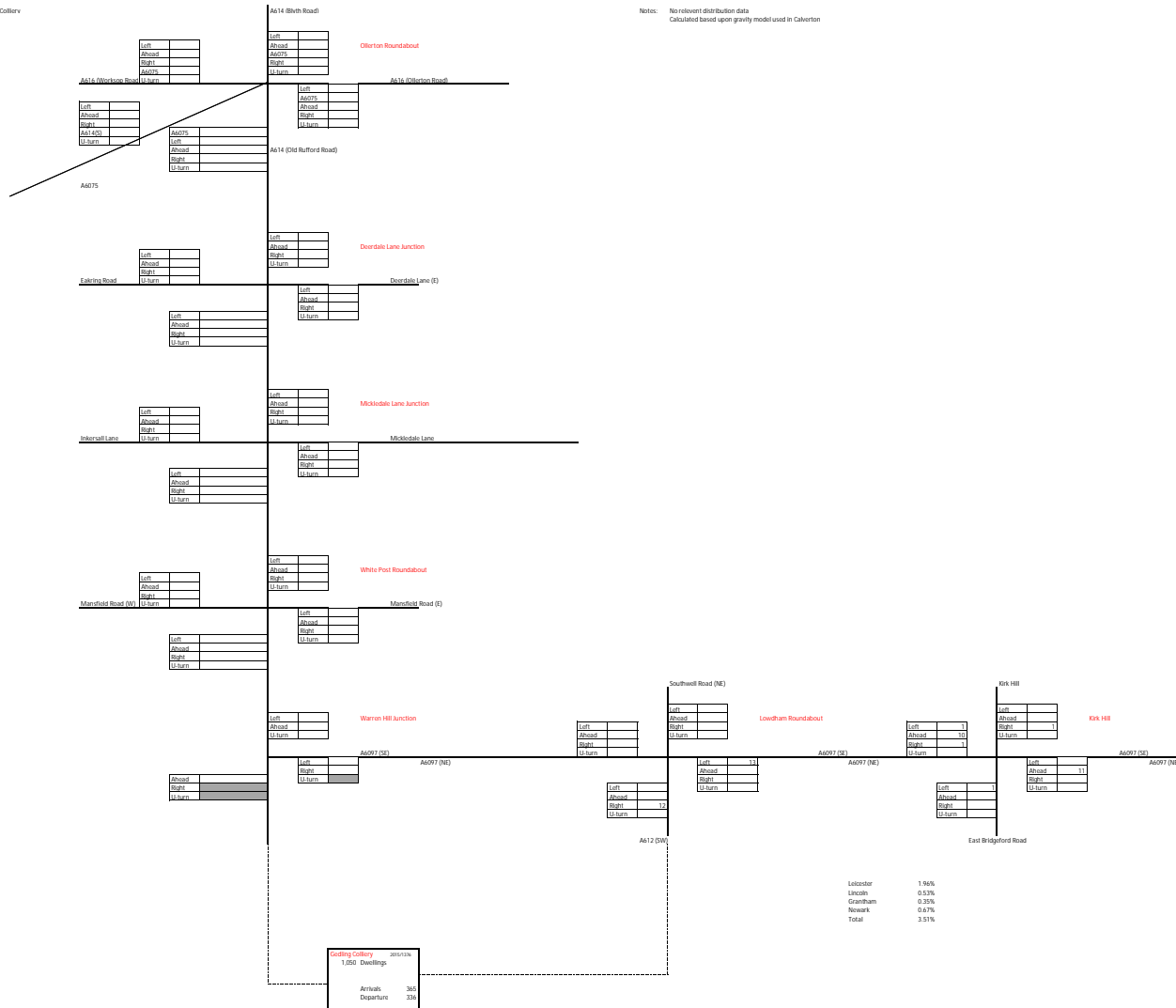
Employment Trip-generation		AM		PM	
	Rate (per 1,000 Dwellings)	Arrivals	Departure	Arrivals	Departures
Industrial units	0.9%	0.558	0.106	0.287	
Public House	0	0	2.921	2.431	
Drive Thru	9.6	9	11,429	11,297	
		280	27	25	32
		82	56	61	67

Godiva Colliery	2016/17
1,050 Dwellings	
Arrivals	606
Departure	330

Leicester	1.94%
Lincoln	0.53%
Grantham	0.35%
Newark	0.67%
Total	3.51%

Trip rates from TRIC (Excludes Saturdays and Sundays). PM peak hour is 1800 - 1900 (Busiest hour in PM period (1600 - 1900))

Trip rates from TRIC (Excludes Saturdays and Sundays). AM peak hour is 0800 - 0900 (Busiest hour in AM period (0700 - 1000) and PM Peak (1600 - 1900))



Leicester	1.96%
Lincoln	0.53%
Grantham	0.35%
Nottingham	0.67%
<b>Total</b>	<b>3.51%</b>

Residential Trip-generation		AM	PM		
		Arrivals	Departure	Arrivals	Departures
Rate (per	0.235	0.588	0.519	0.259	
Dwellings	1,050	247	617	545	272

Employment Trip-generation		AM	PM		
		Arrivals	Departure	Arrivals	Departures
Rate (per	0.996	0.558	0.106	0.287	
Industrial units	5514	56	31	6	16
Public House	800	0	0	2,921	2,431
Drive Thru	280	0	0	23	19
		9.6	9	11,429	11,297
		27	25	32	32
		82	56	61	67

Trip rates from Travel Plan  
 Trip rates from TRCs (Excludes Saturdays and Sundays). PM peak hour is 1800 - 1900 (busiest hour in PM period (1600 - 1900))  
 Trip rates from TRCs (Excludes Saturdays and Sundays). AM peak hour is 0800 - 0900 (busiest hour in AM period (0700 - 1000)) and PM Peak is 1800-1900 (busiest in PM peak (1600-1900))



# Appendix K – TRICS Outputs

TRICS 7.5.3

Trip Rate P Number of dwellings

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

Calculation Factor: 1 DWELLS

Count Type: VEHICLES

Time Range	No. Days	ARRIVALS			DEPARTURES			TOTALS	
		Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:0	75	77	0.074	75	77	0.259	75	77	0.333
08:00-09:0	75	77	0.131	75	77	0.358	75	77	0.489
09:00-10:0	75	77	0.142	75	77	0.16	75	77	0.302
10:00-11:0	75	77	0.126	75	77	0.15	75	77	0.276
11:00-12:0	75	77	0.134	75	77	0.152	75	77	0.286
12:00-13:0	75	77	0.155	75	77	0.15	75	77	0.305
13:00-14:0	75	77	0.159	75	77	0.156	75	77	0.315
14:00-15:0	75	77	0.157	75	77	0.179	75	77	0.336
15:00-16:0	75	77	0.243	75	77	0.171	75	77	0.414
16:00-17:0	75	77	0.265	75	77	0.165	75	77	0.43
17:00-18:0	75	77	0.309	75	77	0.16	75	77	0.469
18:00-19:0	75	77	0.253	75	77	0.163	75	77	0.416
19:00-20:0	1	97	0.062	1	97	0.052	1	97	0.114
20:00-21:0	1	97	0.031	1	97	0.021	1	97	0.052
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.241			2.296			4.537

TRICS 7.5.3

Trip Rate P Gross floor area

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

Calculation Factor: 100 sqm

Count Type: VEHICLES

Time Range	No. Days	Ave. GFA	ARRIVALS		DEPARTURES			TOTALS	
			Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00	1	10100	1.109	1	10100	0.168	1	10100	1.277
07:00-08:00	51	6731	0.588	51	6731	0.064	51	6731	0.652
08:00-09:00	52	6610	1.322	52	6610	0.153	52	6610	1.475
09:00-10:00	52	6610	0.778	52	6610	0.211	52	6610	0.989
10:00-11:00	52	6610	0.313	52	6610	0.2	52	6610	0.513
11:00-12:00	52	6610	0.249	52	6610	0.216	52	6610	0.465
12:00-13:00	52	6610	0.253	52	6610	0.295	52	6610	0.548
13:00-14:00	52	6610	0.295	52	6610	0.261	52	6610	0.556
14:00-15:00	52	6610	0.218	52	6610	0.272	52	6610	0.49
15:00-16:00	52	6610	0.171	52	6610	0.39	52	6610	0.561
16:00-17:00	52	6610	0.166	52	6610	0.842	52	6610	1.008
17:00-18:00	52	6610	0.108	52	6610	1.139	52	6610	1.247
18:00-19:00	50	6841	0.042	50	6841	0.381	50	6841	0.423
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			5.612			4.592			10.204

TRICS 7.5.3

Trip Rate P Gross floor area

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

Calculation Factor: 100 sqm

Count Type: VEHICLES

Time Range	No. Days	Ave. GFA	ARRIVALS		DEPARTURES			Ave. GFA	TOTALS Trip Rate
			Trip Rate	No. Days	Trip Rate	No. Days			
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00	40	12424	0.33	40	12424	0.104	40	12424	0.434
08:00-09:00	40	12424	0.381	40	12424	0.197	40	12424	0.578
09:00-10:00	40	12424	0.275	40	12424	0.217	40	12424	0.492
10:00-11:00	40	12424	0.235	40	12424	0.224	40	12424	0.459
11:00-12:00	40	12424	0.241	40	12424	0.242	40	12424	0.483
12:00-13:00	40	12424	0.251	40	12424	0.263	40	12424	0.514
13:00-14:00	40	12424	0.264	40	12424	0.243	40	12424	0.507
14:00-15:00	40	12424	0.232	40	12424	0.248	40	12424	0.48
15:00-16:00	40	12424	0.2	40	12424	0.274	40	12424	0.474
16:00-17:00	40	12424	0.201	40	12424	0.347	40	12424	0.548
17:00-18:00	40	12424	0.101	40	12424	0.34	40	12424	0.441
18:00-19:00	40	12424	0.06	40	12424	0.117	40	12424	0.177
19:00-20:00									
20:00-21:00									
21:00-22:00									
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			2.771			2.816			5.587

TRICS 7.5.3

Trip Rate P Gross floor area

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

Calculation Factor: 100 sqm

Count Type: VEHICLES

Time Range	No. Days	Ave. GFA	ARRIVALS		DEPARTURES			TOTALS	
			Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00	2	12610	0.028	2	12610	0.036	2	12610	0.064
06:00-07:00	2	12610	0.067	2	12610	0.059	2	12610	0.126
07:00-08:00	14	9863	0.109	14	9863	0.049	14	9863	0.158
08:00-09:00	14	9863	0.134	14	9863	0.064	14	9863	0.198
09:00-10:00	14	9863	0.095	14	9863	0.066	14	9863	0.161
10:00-11:00	14	9863	0.082	14	9863	0.075	14	9863	0.157
11:00-12:00	14	9863	0.067	14	9863	0.075	14	9863	0.142
12:00-13:00	14	9863	0.072	14	9863	0.063	14	9863	0.135
13:00-14:00	14	9863	0.102	14	9863	0.088	14	9863	0.19
14:00-15:00	14	9863	0.064	14	9863	0.093	14	9863	0.157
15:00-16:00	14	9863	0.066	14	9863	0.086	14	9863	0.152
16:00-17:00	14	9863	0.054	14	9863	0.098	14	9863	0.152
17:00-18:00	14	9863	0.038	14	9863	0.111	14	9863	0.149
18:00-19:00	13	10506	0.029	13	10506	0.052	13	10506	0.081
19:00-20:00	2	12610	0.056	2	12610	0.052	2	12610	0.108
20:00-21:00	2	12610	0.024	2	12610	0.044	2	12610	0.068
21:00-22:00	1	22270	0.031	1	22270	0.018	1	22270	0.049
22:00-23:00									
23:00-24:00									
Daily Trip Rates:			1.118			1.129			2.247



TRICS 7.5.4

Trip Rate P Gross floor area

TRIP RATE FOOD & DRINK/D - FAST FOOD - DRIVE THROUGH

Calculation Factor: 100 sqm

Count Type: VEHICLES

Time Range	ARRIVALS			DEPARTURES			Ave. GFA	TOTALS Trip Rate	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate			
00:00-01:00									
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00	1	480	0.417	1	480	0	1	480	0.417
06:00-07:00	2	445	3.708	2	445	2.921	2	445	6.629
07:00-08:00	4	384	8.664	4	384	7.231	4	384	15.895
08:00-09:00	5	400	9.6	5	400	9	5	400	18.6
09:00-10:00	5	400	8.7	5	400	9.1	5	400	17.8
10:00-11:00	6	379	8.176	6	379	8.264	6	379	16.44
11:00-12:00	6	379	10.505	6	379	9.846	6	379	20.351
12:00-13:00	6	379	16.088	6	379	14.681	6	379	30.769
13:00-14:00	6	379	13.89	6	379	15.824	6	379	29.714
14:00-15:00	6	379	9.626	6	379	10.813	6	379	20.439
15:00-16:00	6	379	9.846	6	379	8.967	6	379	18.813
16:00-17:00	6	379	11.077	6	379	9.846	6	379	20.923
17:00-18:00	6	379	10.198	6	379	10.769	6	379	20.967
18:00-19:00	6	379	11.429	6	379	11.297	6	379	22.726
19:00-20:00	6	379	10.242	6	379	10.989	6	379	21.231
20:00-21:00	6	379	6.549	6	379	6.901	6	379	13.45
21:00-22:00	6	379	5.758	6	379	6.066	6	379	11.824
22:00-23:00	4	408	2.822	4	408	3.313	4	408	6.135
23:00-24:00	2	473	0.212	2	473	1.058	2	473	1.27
Daily Trip Rates:			157.507			156.886			314.393

TRICS 7.5.4

Trip Rate P Gross floor area

TRIP RATE FOOD & DRINK/C - PUB/RESTAURANT

Calculation Factor: 100 sqm

Count Type: VEHICLES

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-01:00	1	1550	0.065	1	1550	0.129	1	1550	0.194
01:00-02:00									
02:00-03:00									
03:00-04:00									
04:00-05:00									
05:00-06:00									
06:00-07:00									
07:00-08:00	1	600	0	1	600	0	1	600	0
08:00-09:00	1	600	0	1	600	0	1	600	0
09:00-10:00	1	600	0	1	600	0	1	600	0
10:00-11:00	21	614	0.504	21	614	0.372	21	614	0.876
11:00-12:00	21	614	1.008	21	614	0.395	21	614	1.403
12:00-13:00	22	623	2.541	22	623	1.051	22	623	3.592
13:00-14:00	22	623	1.935	22	623	1.876	22	623	3.811
14:00-15:00	22	623	1.066	22	623	1.701	22	623	2.767
15:00-16:00	22	623	1.044	22	623	1.037	22	623	2.081
16:00-17:00	22	623	1.577	22	623	0.993	22	623	2.57
17:00-18:00	22	623	2.366	22	623	1.395	22	623	3.761
18:00-19:00	22	623	2.921	22	623	2.431	22	623	5.352
19:00-20:00	22	623	2.577	22	623	2.833	22	623	5.41
20:00-21:00	22	623	1.694	22	623	2.482	22	623	4.176
21:00-22:00	22	623	0.964	22	623	1.803	22	623	2.767
22:00-23:00	22	623	0.57	22	623	1.847	22	623	2.417
23:00-24:00	19	588	0.331	19	588	0.922	19	588	1.253
Daily Trip Rates:			21.163			21.267			42.43

# Appendix L – Committed Development Housing Trajectory

	Completions						Future Years															Total 2011-2028 (plan period)	Total 2028-2032 (beyond plan period)
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29 (beyond plan period)	2029-2030 (beyond plan period)	2030-2031 (beyond plan period)	2031-2032 (Beyond plan period)		
<b>Completions on non-allocated sites and identified SHLAA capacity</b>	293	209	199	373	375	338	341	463	172	101	71	80	32	1	1	0	20	20	10	0	0	3,069	30
Land at Melton Road, Edwalton						40	150	250	250	250	150	150	150	150	101							1,641	0
Land at former Cotgrave Colliery					112	150	100	100														462	0
Land at Former RAF Newton Phase 2									50	100	150	150	100									550	0
Land north of Bingham								50	100	150	150	150	150	150	150							1,050	0
Land south of Clifton									50	200	250	250	250	250	250	250	250	250	250	250	250	2,000	1,000
East of Gamston/North of Tollerton										50	200	250	250	250	250	250	250	250	250	250	250	1,750	1,000
<b>Infill and changes of use in broad locations</b>											104	104	104	104	104	104	78	78	78	78	78	806	312
Land rear of Mill Lane/The Old Park, Cotgrave											50	50	50	30								180	
Land south of Hollygate Lane, Cotgrave											50	50	50	40								190	
Land north of Rempstone Road, East Leake									50	50	50	50	35									235	
Land off Nicker Hill, Keyworth											50	50	50									150	
Land between Platt Lane and Station Road, Keyworth											50	50	50	40								190	
Land South of Debdale Lane Keyworth											50	50	50	40								190	
Hillside Farm, Keyworth											25	45										70	
Land north of Nottingham Road, Radcliffe on Trent											50	50	50									150	
Land adjacent to Grooms Cottage, Radcliffe on Trent											25	25										50	
Land Off Shelford Road Radcliffe on Trent											50	50	50	50	50	50	50					400	
Land north of Grantham Road Radcliffe on Trent											50	50	50	50	40							240	
72 Main Road, Radcliffe on Trent											1	2	2									5	
The Paddocks, Nottingham Road Radcliffe on Trent														50	25							75	
Land west of Wilford Road, Ruddington												50	50	30								130	
Land south of Flawforth Lane, Ruddington											25	25										50	
Land opposite Mere Way, Ruddington											20	50	50	50								170	
Land east of Church Street Cropwell Bishop											25	45										70	
Land between Butt Lane and Closes Side Lane, East Bridgford											25	55										80	
Land south of Butt Lane, East Bridgford											25	20										45	
Land east of Gypsum Way, Gotham											20	50										70	
Land north of Park Lane, Sutton Bonington											30	50										80	
Former Bunny Brickworks														25	50	25						100	
Former Islamic Institute, Flintham												20	50	20								90	
<b>Projected completions</b>	293	209	199	373	487	528	591	863	742	1,676	1,962	1,686	1,401	1,070	981	679	598	598	588	578	578	14,338	2,342
<b>Cumulative Completions</b>	293	502	701	1,074	1,561	2,089	2,680	3,543	4,285	5,961	7,923	9,609	11,010	12,080	13,061	13,740	14,338	14,936	15,524	16,102	16,680		

In addition, the following information was provided:

Newark sites

1. Land north of Petersmith Drive Ollerton. Gleasons the housebuilder are currently setting up the site and we expect construction to commence in 2019. Build out assumed at a rate of 50 houses per annum so should be completed in 5/6 yrs.
2. Thoresby Colliery- Detailed approval process ongoing. We construction to commence in 2020 at a build out rate of 50 -60 houses per annum. The current devt restriction of 150 dwgs should be triggered by 2023.
3. Land east of Eaking Rd Bilsthorpe. No recent activity on this appln / site. Still likely to be built out in next 3-5 years.
4. Kirklington Rd Bilsthorpe this application is not yet approved. Expect this site to be built out in next 3-5 years.
5. Oldbridge Way Bilsthorpe. A builder has been appointed (subject to contract) and construction expected late 2019 early 2020. Assume build out rate of 50 houses per annum

Rushcliffe sites

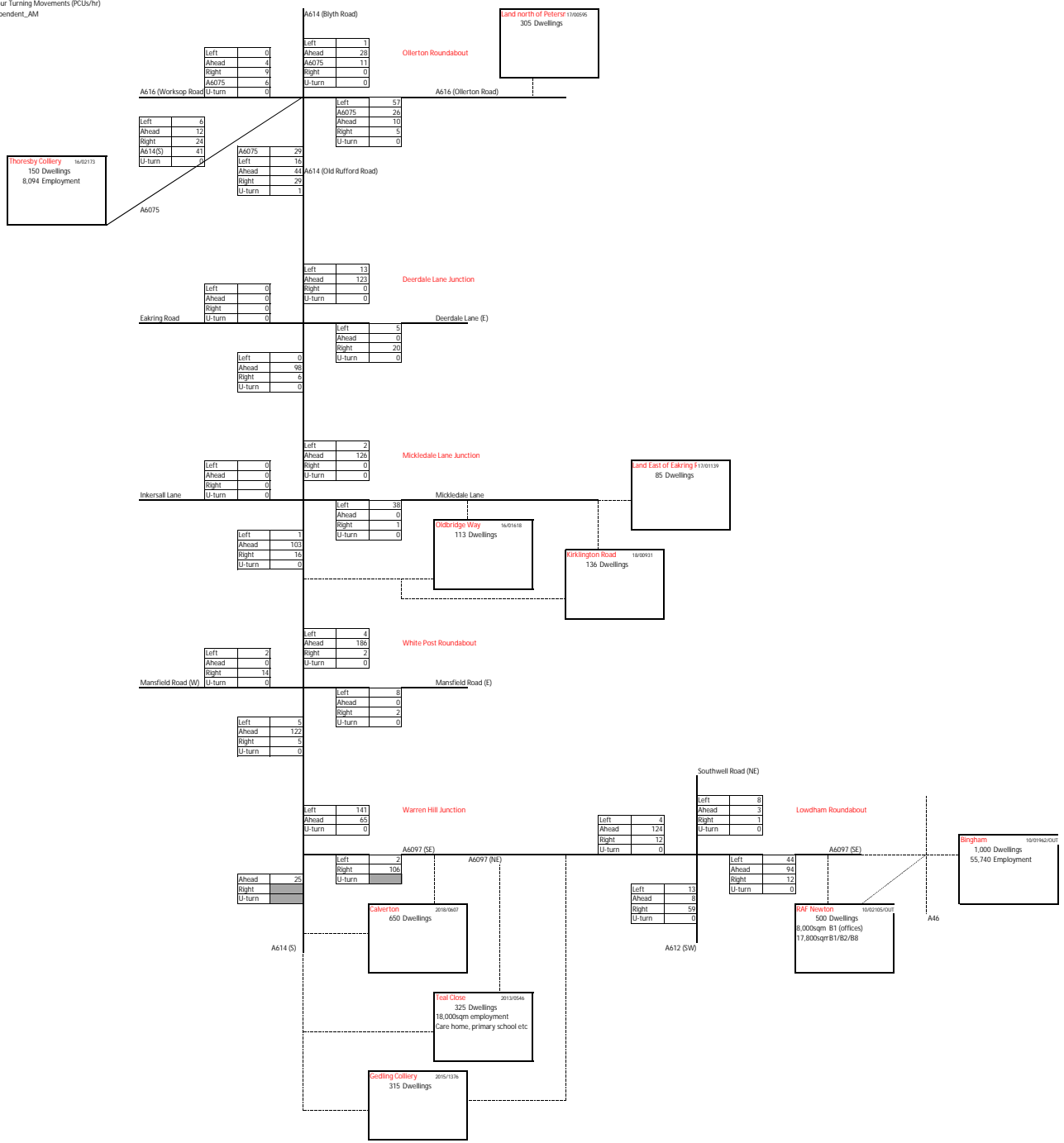
6. RAF Newton this site has had permission for some years. See attached projected delivery trajectory
7. Bingham this site has had permission for some years. See attached projected delivery trajectory.

Gedling sites

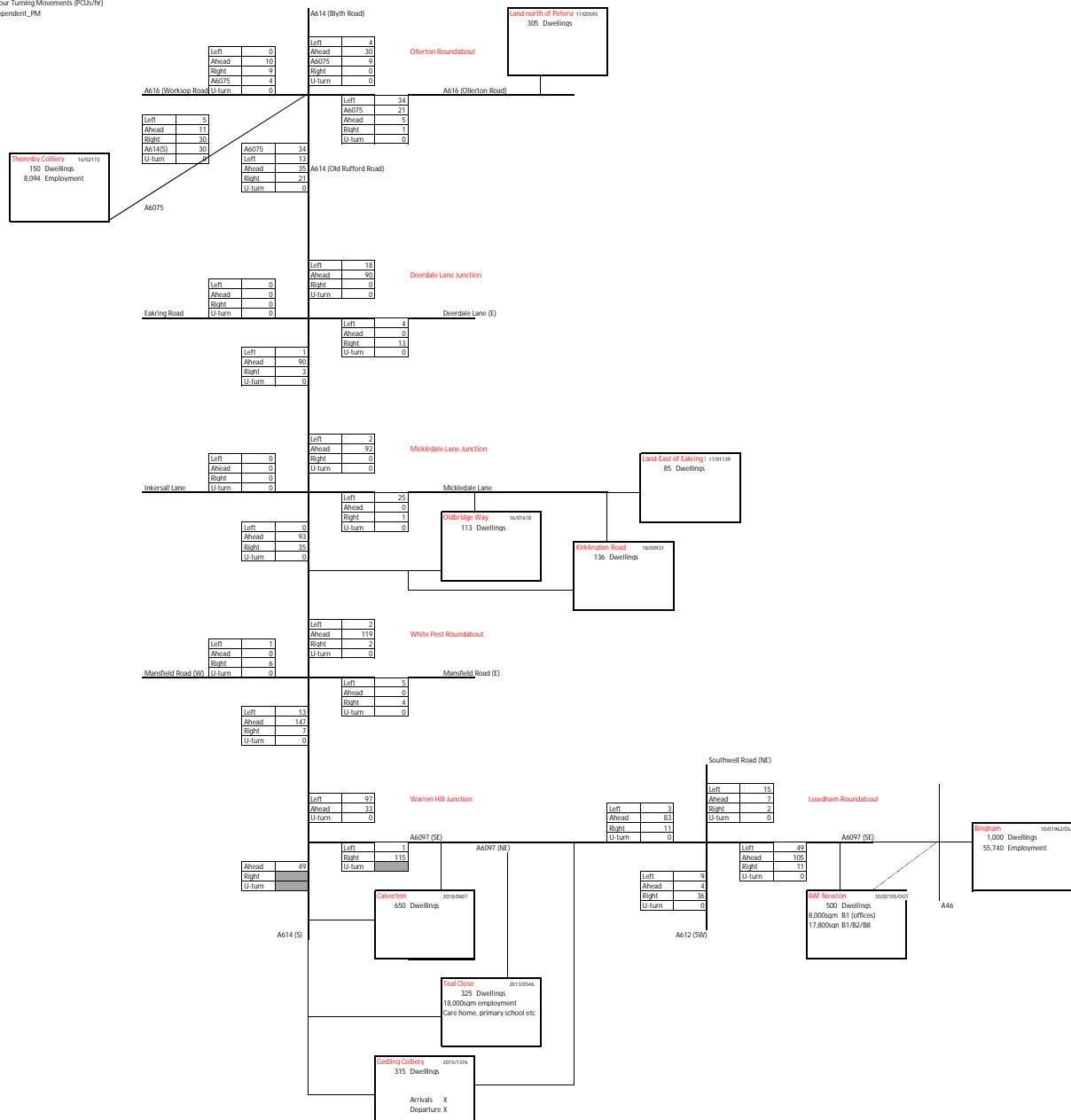
8. Calverton three current planning applications being considered 2018/1143, 2018/0817 and 2018/0607. We expect these sites to commence in 2019/20 and there to be 3 housebuilders. Assume 100 -150 houses per annum.
9. Teal Close site currently under construction no homes completed yet. Assume build out of 60 per annum from 2019 onwards.
10. Gedling Colliery- planning application 2015/1376 for 500 dwellings., of which the first 315 can be built in advance of the GAR. As at October 2018 there had been 53 completed houses on site. The site is being built out by Keepmoat Homes at a rate of 60 per year.

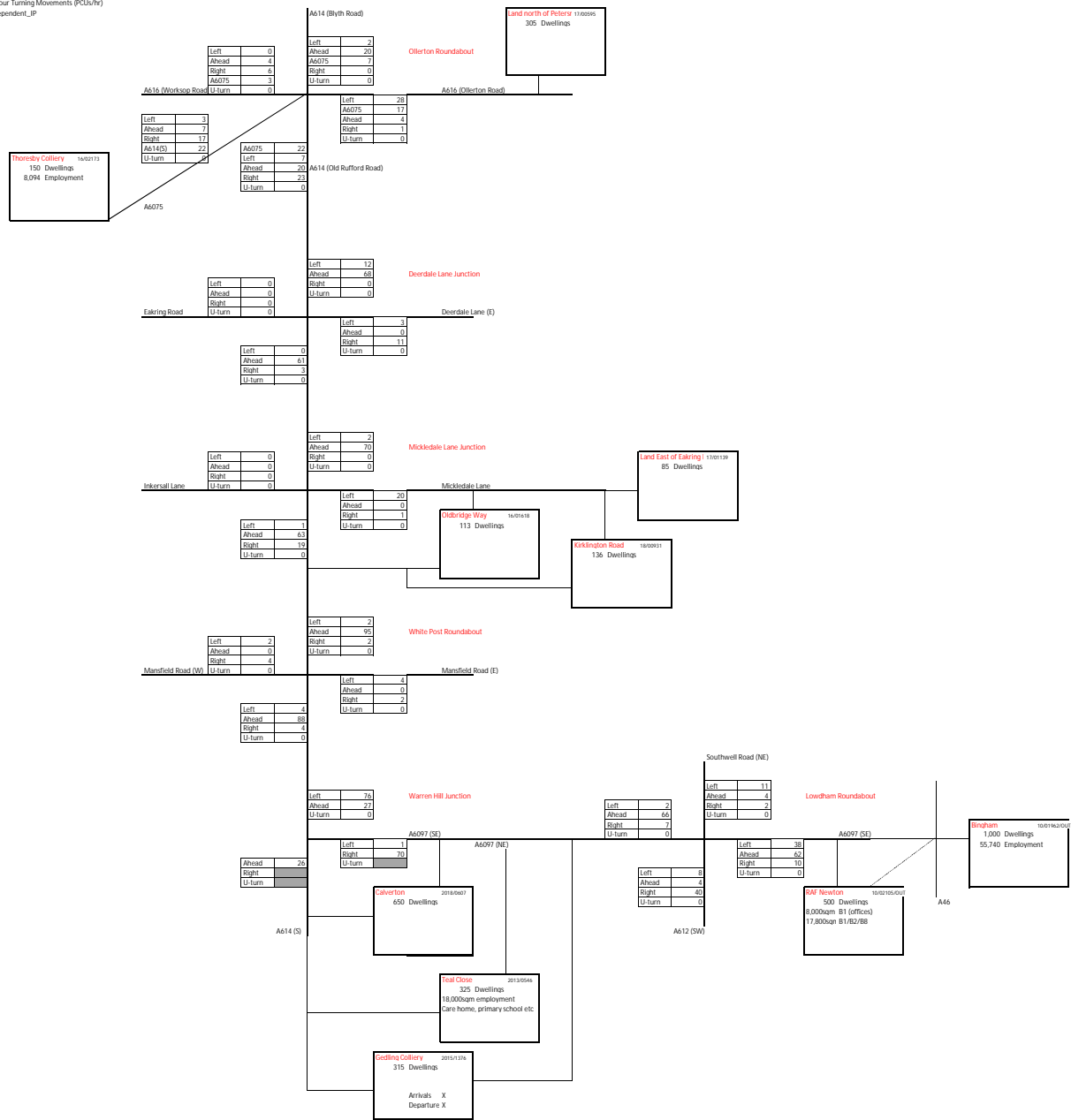
# Appendix M – Committed Development Flows

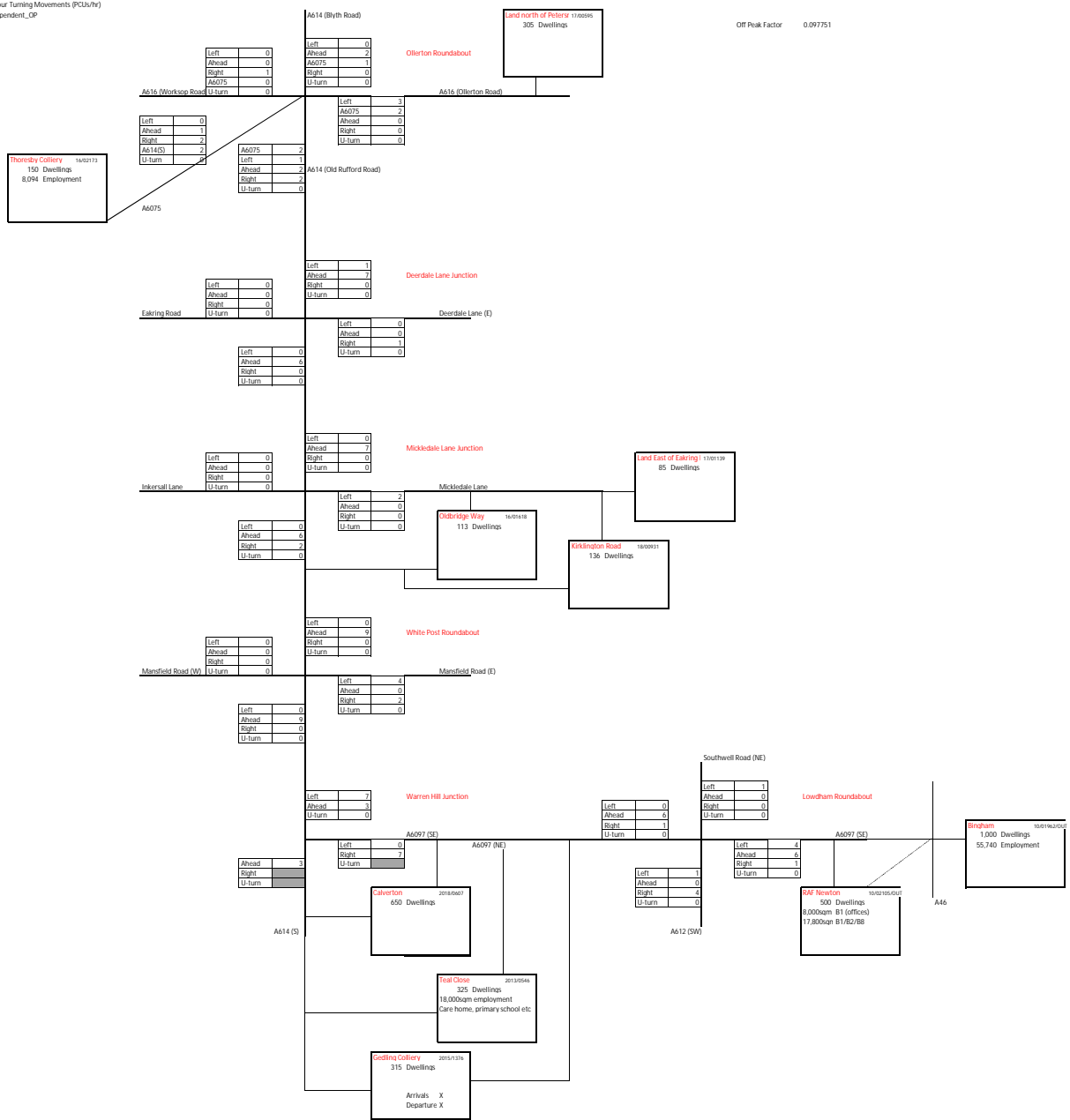


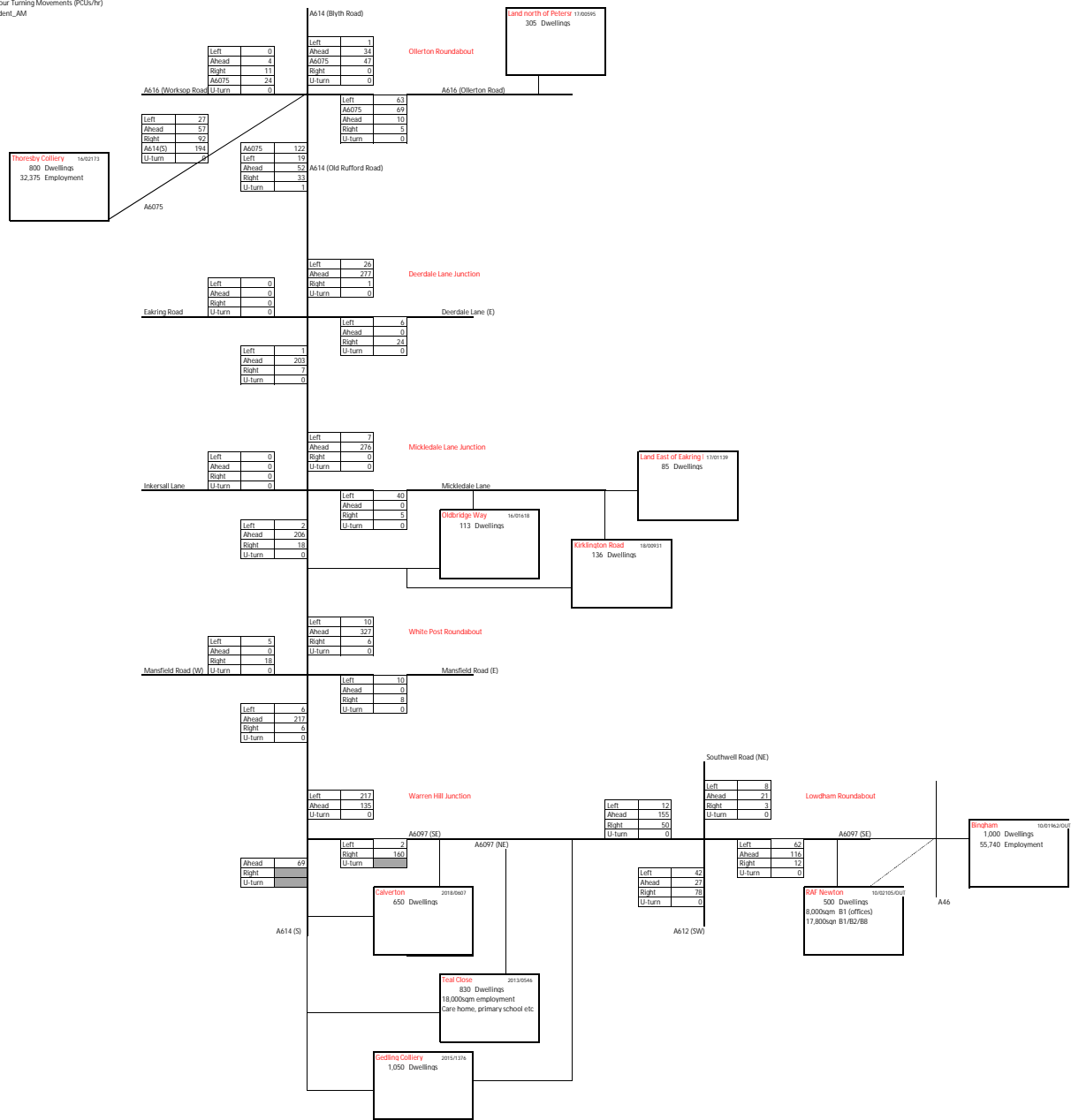


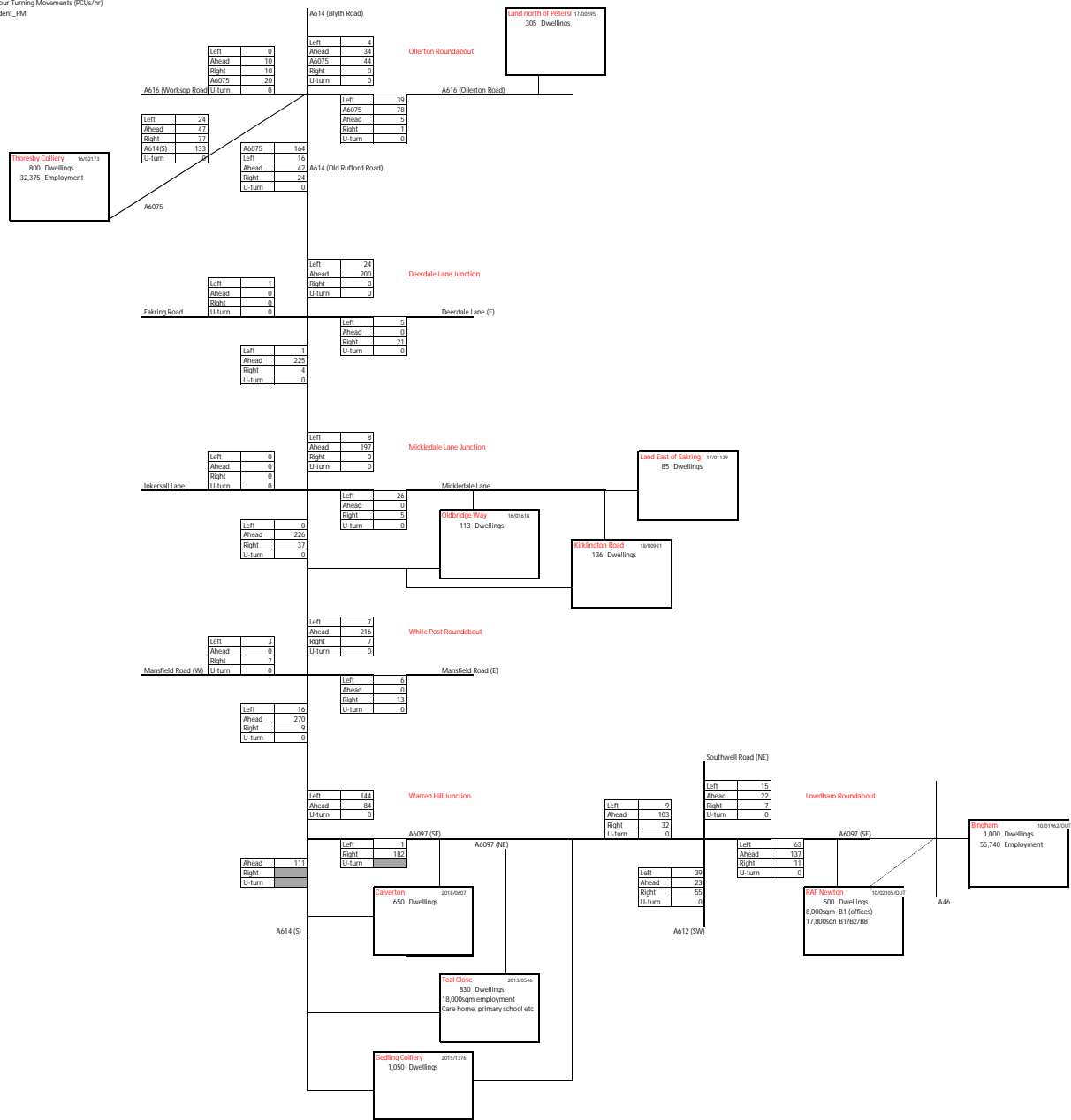
Peak Hour Turning Movements (PCU/hr)  
Non Dependent\_PM



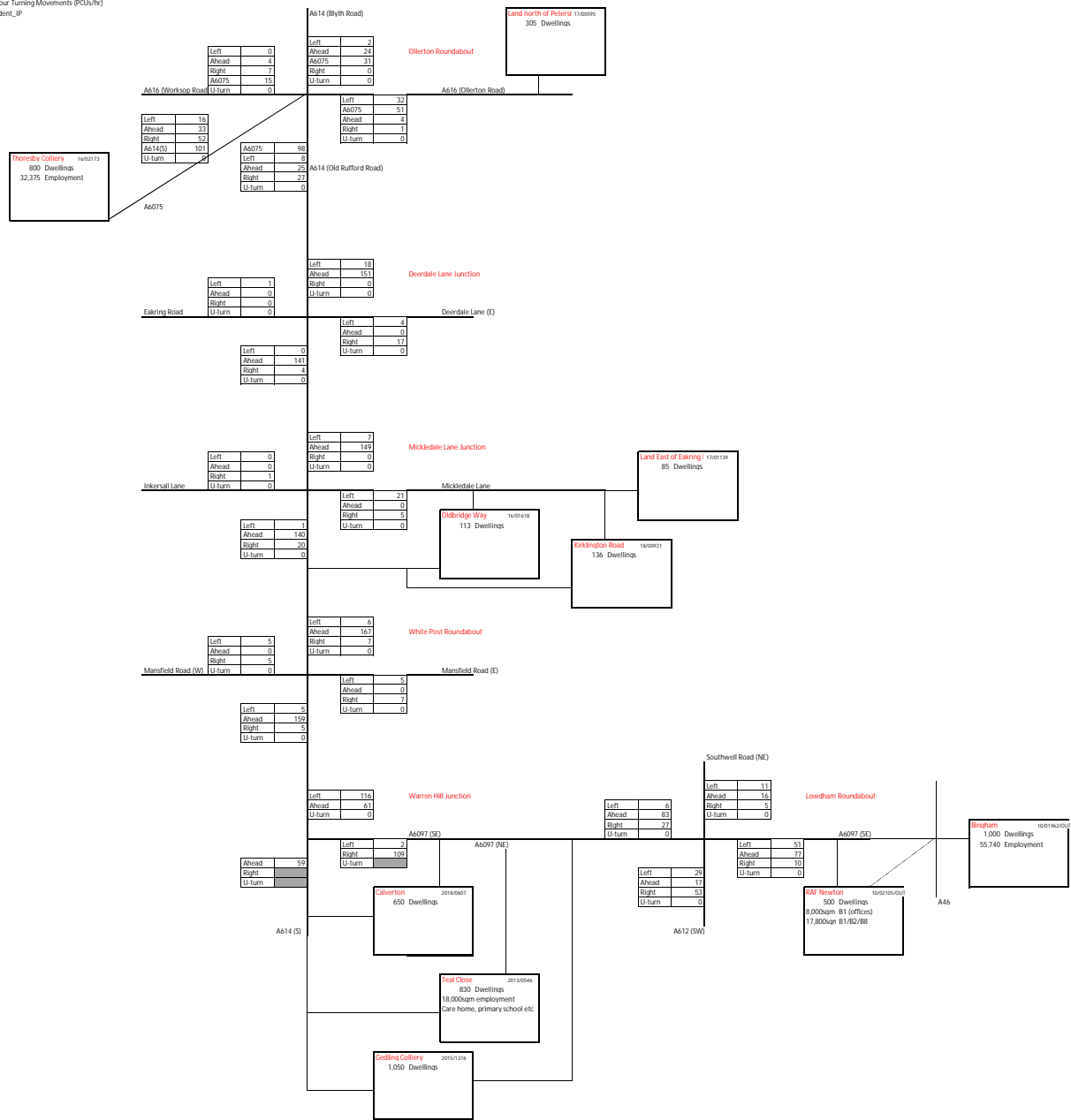


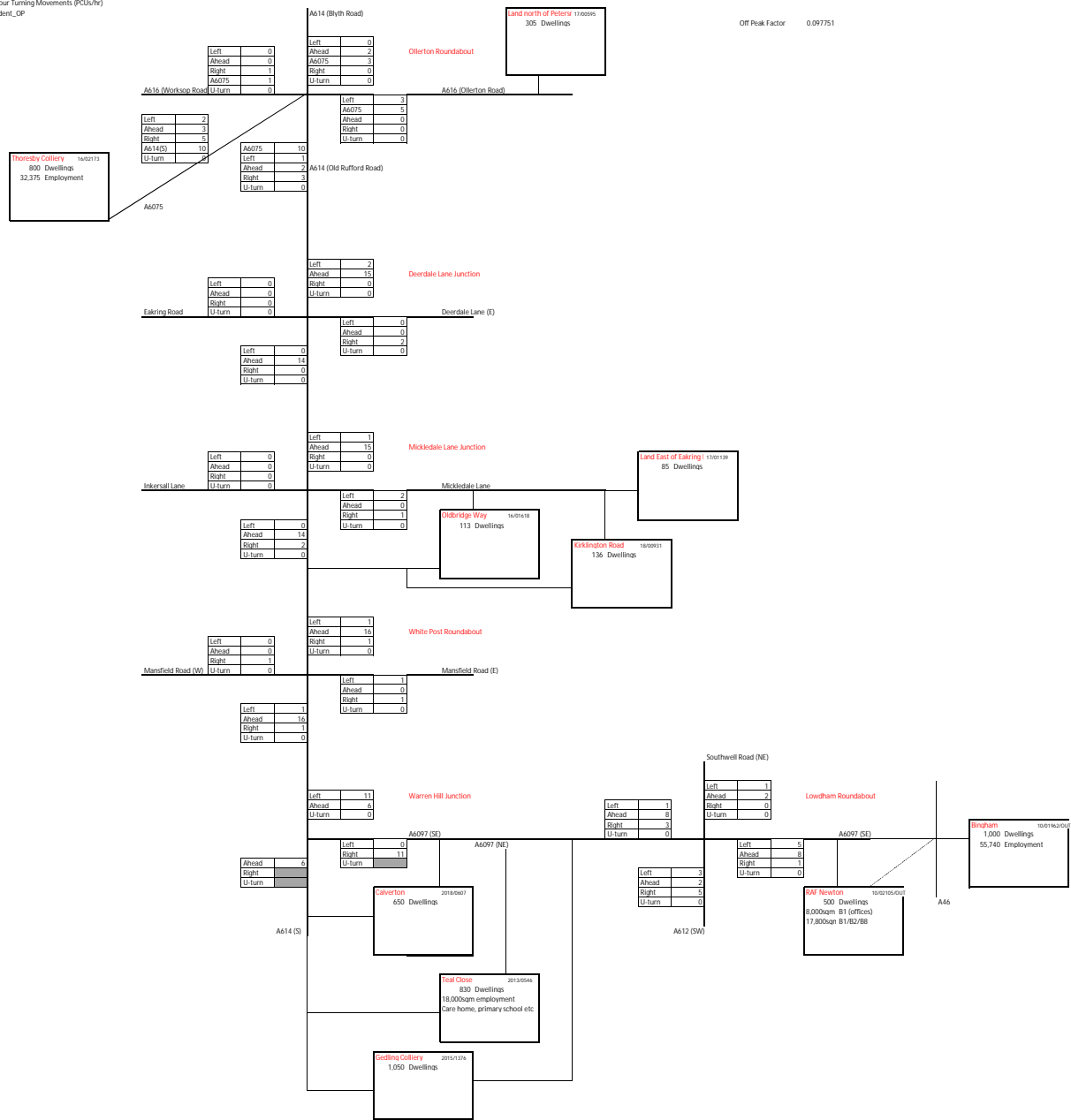












**Thorosby Colliery** 1402173  
800 Dwellings  
32.375 Employment

**Land north of Risora** 1702055  
205 Dwellings

**Land East of Eaking** 1101138  
85 Dwellings

**Oldbridge Way** 1401518  
113 Dwellings

**Kirklington Road** 1402051  
136 Dwellings

**Calverton** 2018027  
620 Dwellings

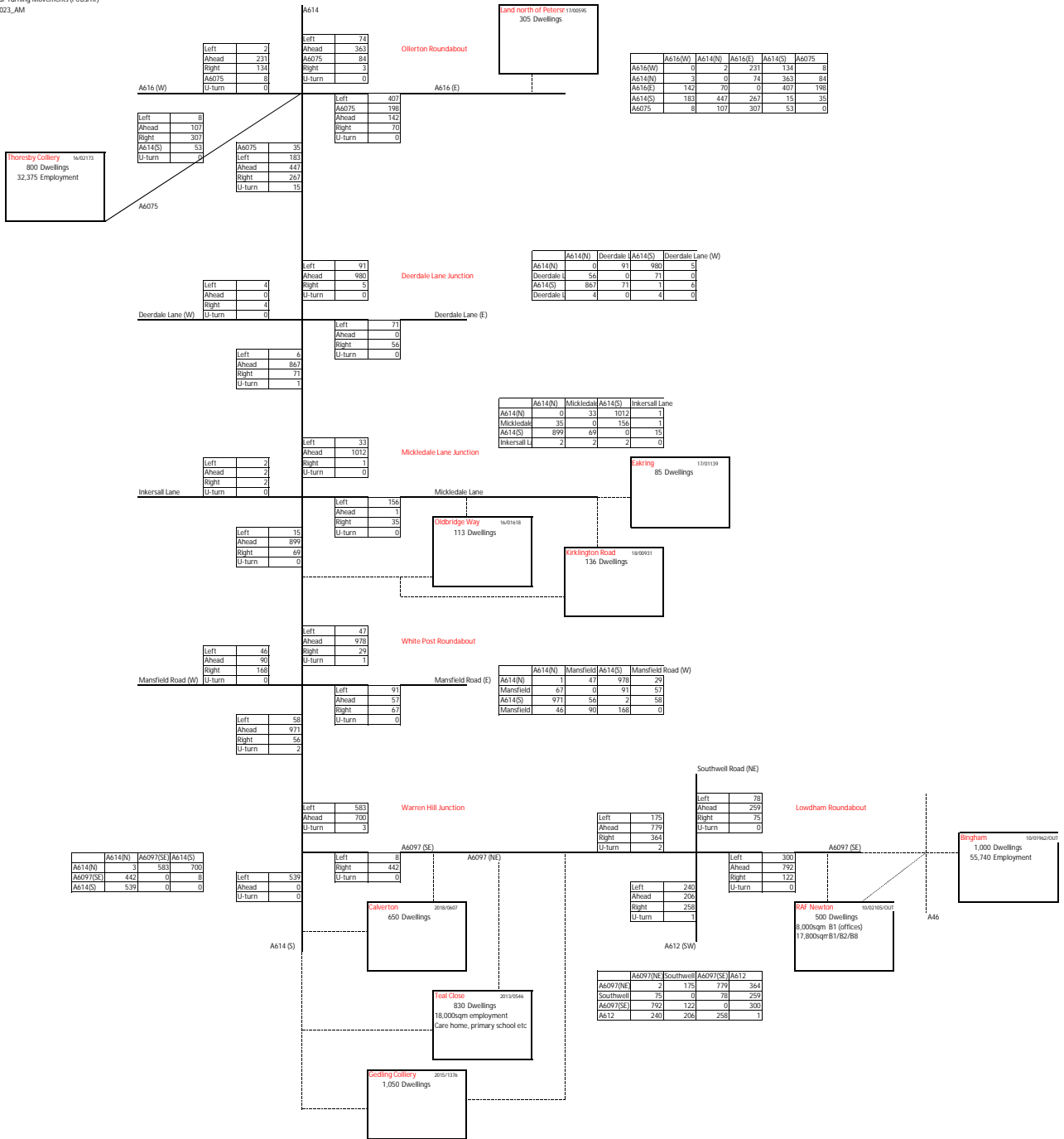
**Total Close** 2013054  
800 Dwellings  
18,000sqm employment  
Care home, primary school etc.

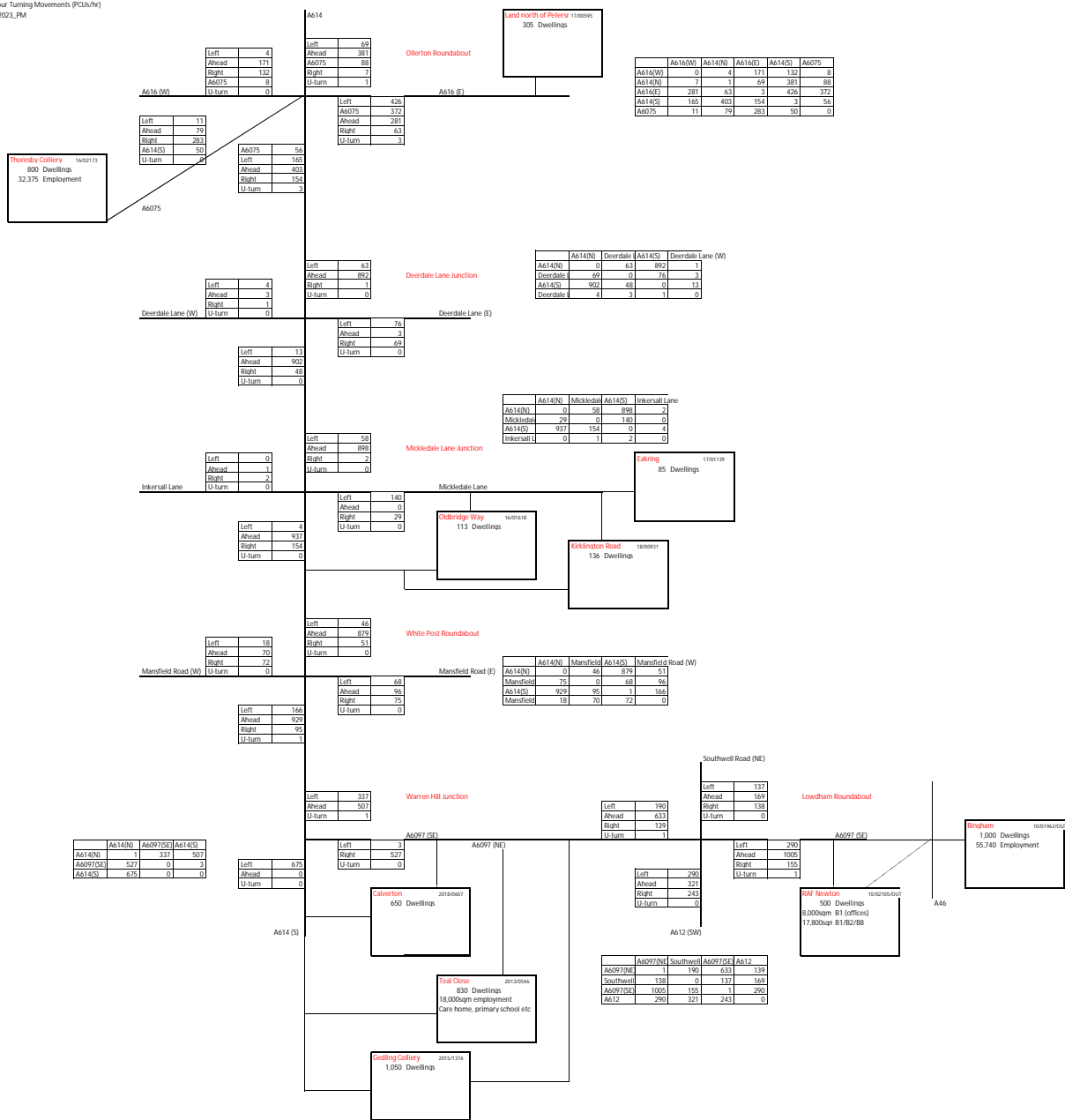
**Codling Colliery** 20151315  
1,050 Dwellings

**RAE Newton** 140210501  
500 Dwellings  
8,000sqm B1 (offices)  
17,800sqm B1/B2/B8

**Stincham** 101016201  
1,000 Dwellings  
55,740 Employment

# Appendix N – 2023 Opening Year Forecasts





Left	4
Ahead	171
Right	132
A6075	8
U-turn	0

Left	89
Ahead	381
A6075	88
Right	7
U-turn	1

A616(W)	A614(N)	A616(E)	A614(S)	A6075
0	4	171	132	8
7	1	49	281	88
281	63	3	426	372
165	403	154	3	56
11	79	283	61	0

Left	11
Ahead	79
Right	282
A614(S)	50
U-turn	0

A6075	50
Left	166
Ahead	403
Right	154
U-turn	3

Left	426
A6075	372
Ahead	281
Right	63
U-turn	3

Left	4
Ahead	3
Right	1
U-turn	0

Left	63
Ahead	892
Right	1
U-turn	0

A614(N)	A614(S)	Deerdale	A614(S)	Deerdale Lane (W)
0	63	892	3	0
69	0	76	3	0
902	48	0	13	0
4	3	1	0	0

Left	13
Ahead	902
Right	48
U-turn	0

Left	76
Ahead	3
Right	60
U-turn	0

A614(N)	Micklesdale	A614(S)	Inkersall Lane
0	88	802	2
29	0	60	0
937	154	0	4
0	1	2	0

Left	58
Ahead	898
Right	2
U-turn	0

Left	0
Ahead	1
Right	2
U-turn	0

Left	7
Ahead	937
Right	154
U-turn	0

Left	140
Ahead	0
Right	29
U-turn	0

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
0	46	879	51
75	0	68	96
929	94	1	166
18	70	72	0

Left	40
Ahead	879
Right	51
U-turn	0

Left	60
Ahead	96
Right	75
U-turn	0

Left	166
Ahead	929
Right	95
U-turn	1

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
0	46	879	51
75	0	68	96
929	94	1	166
18	70	72	0

Left	337
Ahead	507
Right	1
U-turn	1

Left	3
Right	527
U-turn	0

Left	190
Ahead	633
Right	139
U-turn	1

Left	137
Ahead	169
Right	138
U-turn	0

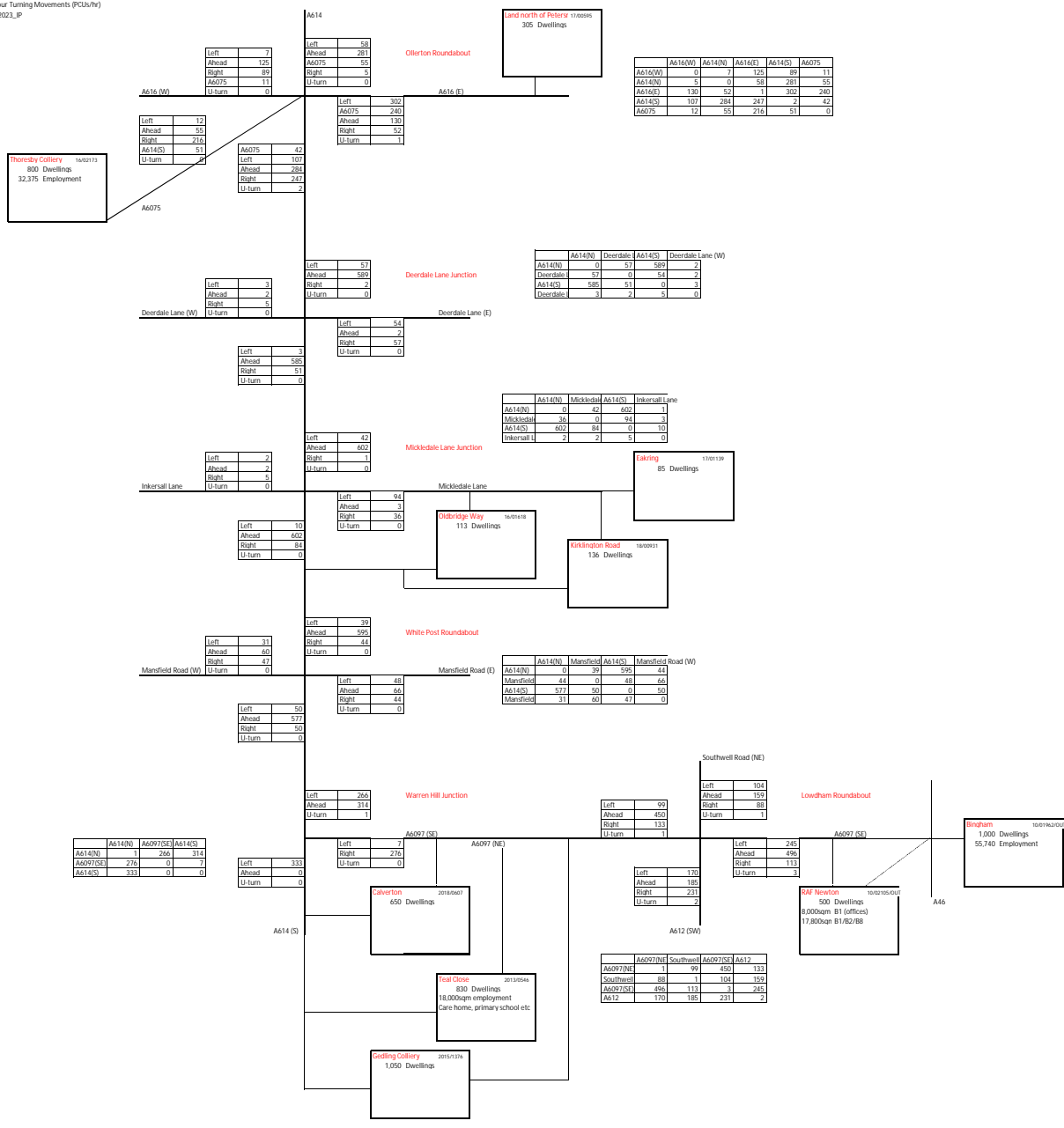
A614(N)	A6097(SE)	A614(S)
1	337	507
A6097(S)	527	0
A614(S)	675	0

Left	675
Ahead	0
Right	0
U-turn	0

A6097(NE)	Southwell	A6097(SE)	A612
1	190	633	139
Southwell	138	0	137
A6097(SE)	105	163	1
A612	290	321	243

Left	290
Ahead	1005
Right	155
U-turn	1

Left	290
Ahead	1005
Right	155
U-turn	1



Left	7
Ahead	125
Right	89
A6075	11
U-turn	0

Left	58
Ahead	281
A6075	55
Right	5
U-turn	0

A616(W)	A614(N)	A616(E)	A614(S)	A6075
0	7	125	89	11
5	0	58	291	55
130	52	1	302	240
107	294	247	2	42
12	55	216	51	0

Left	12
Ahead	35
Right	216
A614(S)	51
U-turn	0

Left	42
Ahead	109
Right	286
U-turn	2

Left	302
A6075	240
Ahead	130
Right	52
U-turn	1

Left	3
Ahead	580
Right	5
U-turn	0

Left	57
Ahead	580
Right	2
U-turn	0

A614(N)	A614(S)	Deerdale	A614(S)	Deerdale Lane (W)
0	57	580	2	0
57	0	54	2	0
580	51	0	2	0
3	2	5	0	0

Left	3
Ahead	580
Right	51
U-turn	0

Left	54
Ahead	3
Right	57
U-turn	0

A614(N)	Micklesdale	A614(S)	Inkersall Lane
0	43	602	1
35	0	0	3
602	84	0	10
2	2	5	0

Left	43
Ahead	602
Right	1
U-turn	0

Left	2
Ahead	2
Right	0
U-turn	0

Left	10
Ahead	602
Right	84
U-turn	0

Left	94
Ahead	34
Right	0
U-turn	0

Left	31
Ahead	60
Right	42
U-turn	0

Left	30
Ahead	595
Right	44
U-turn	0

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
0	44	44	44
44	0	68	66
577	504	0	50
31	60	47	0

Left	50
Ahead	602
Right	50
U-turn	0

Left	48
Ahead	66
Right	44
U-turn	0

Left	266
Ahead	314
Right	42
U-turn	0

Left	266
Ahead	314
Right	42
U-turn	0

Left	99
Ahead	450
Right	133
U-turn	1

Left	104
Ahead	159
Right	98
U-turn	1

A614(N)	A6097(SE)	A614(S)
1	266	314
276	0	7
333	0	0

Left	333
Ahead	0
Right	0
U-turn	0

Left	7
Right	276
U-turn	0

A6097(NE)	Southwell	A6097(SE)	A612
1	99	450	133
88	1	104	159
496	133	3	245
170	185	231	2

Left	245
Ahead	496
Right	113
U-turn	3

Left	333
Ahead	0
Right	0
U-turn	0

Left	7
Right	276
U-turn	0

Left	170
Ahead	185
Right	231
U-turn	2

Left	245
Ahead	496
Right	113
U-turn	3

Left	333
Ahead	0
Right	0
U-turn	0

Left	7
Right	276
U-turn	0

Left	170
Ahead	185
Right	231
U-turn	2

Left	245
Ahead	496
Right	113
U-turn	3

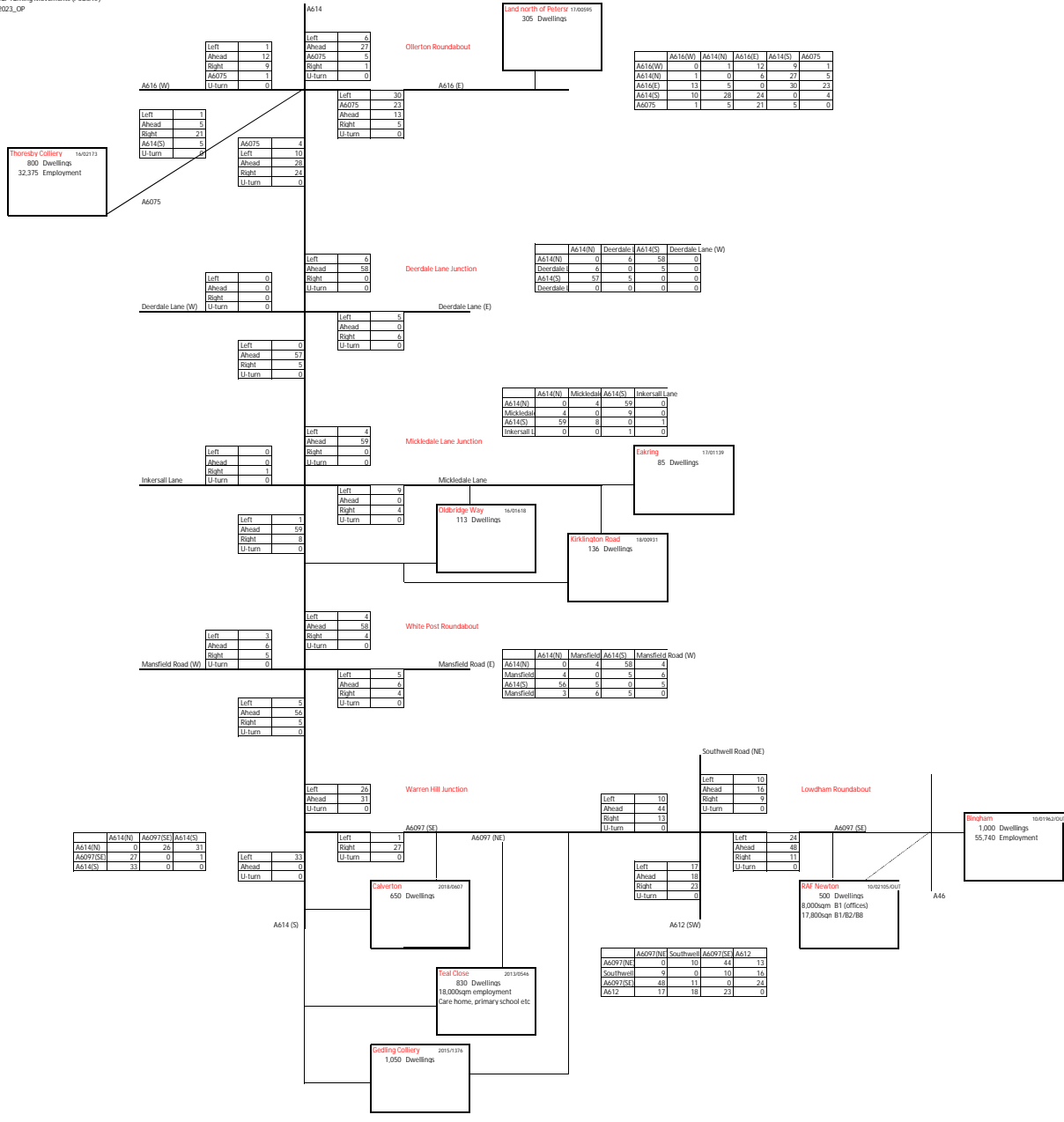
Left	333
Ahead	0
Right	0
U-turn	0

Left	7
Right	276
U-turn	0

Left	170
Ahead	185
Right	231
U-turn	2

Left	245
Ahead	496
Right	113
U-turn	3





Kirk Hill – 2023

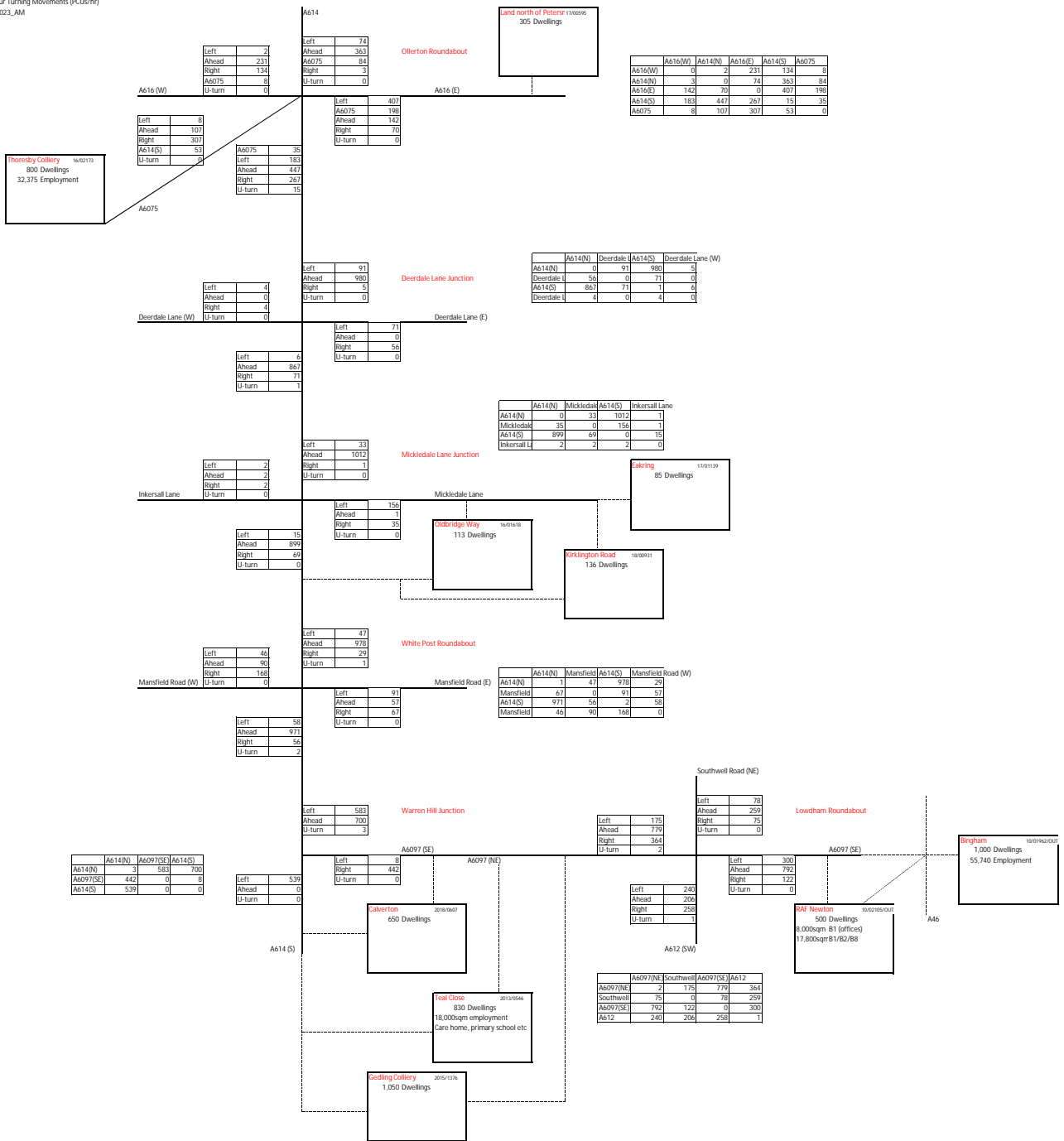
AM - 2023	A	B	C	D	Tot
A	0	75	1188	63	1326
B	121	0	36	56	213
C	985	6	0	3	994
D	120	33	9	0	162
Tot	1226	114	1233	122	2695

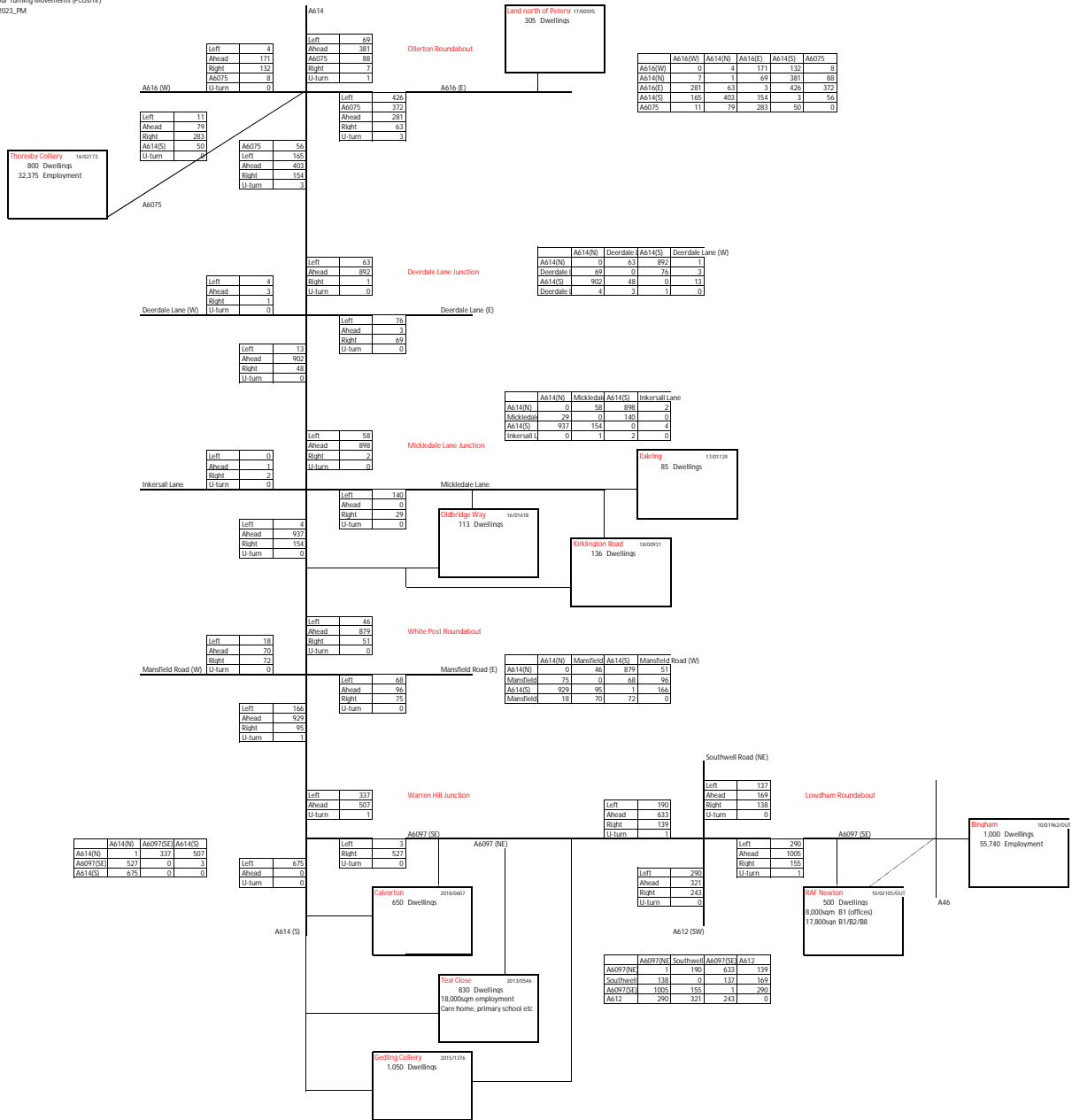
IP - 2023	A	B	C	D	Tot
A	0	48	642	44	734
B	60	0	29	33	122
C	698	19	0	3	720
D	38	30	6	0	74
Tot	796	97	677	80	1650

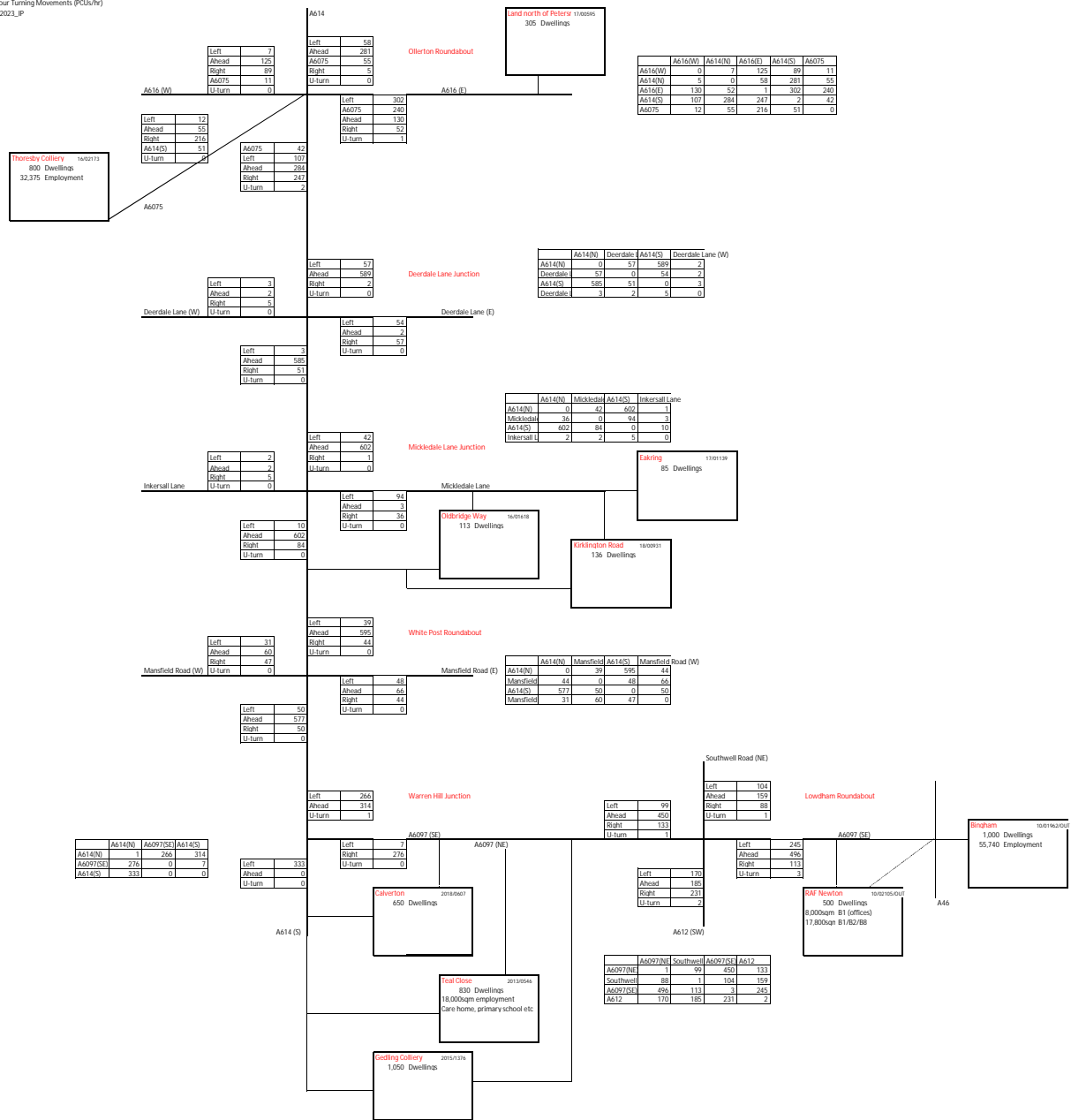
PM - 2023	A	B	C	D	Tot
A	0	64	1115	60	1239
B	143	0	29	42	214
C	1421	5	0	7	1433
D	254	53	7	0	314
Tot	1818	122	1151	109	3200

OP - 2023	A	B	C	D	Tot
A	0	4	55	4	63
B	5	0	2	3	10
C	59	2	0	0	61
D	3	3	1	0	7
Tot	67	9	58	7	141

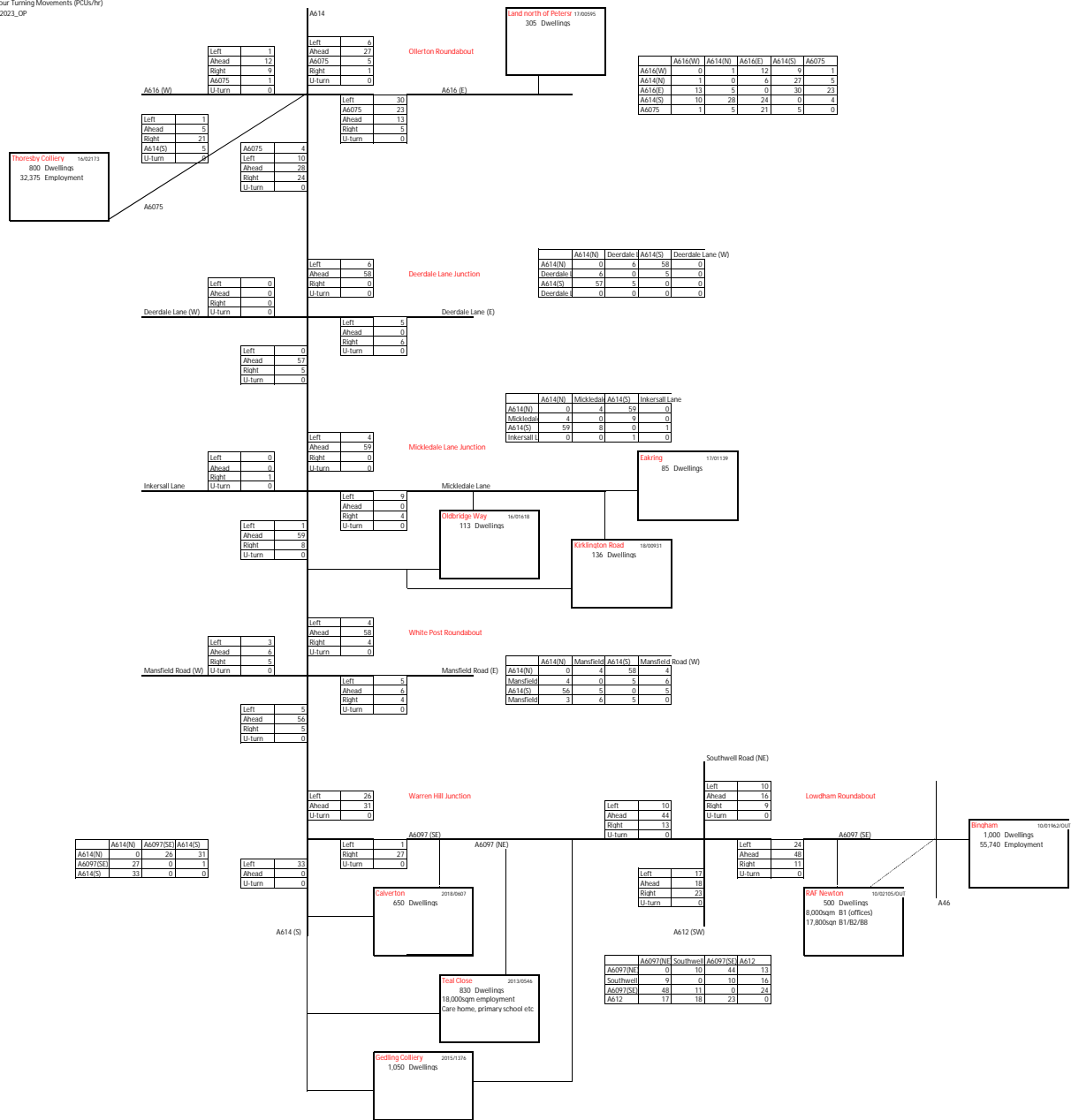
# Appendix O – 2037 Design Year Forecasts

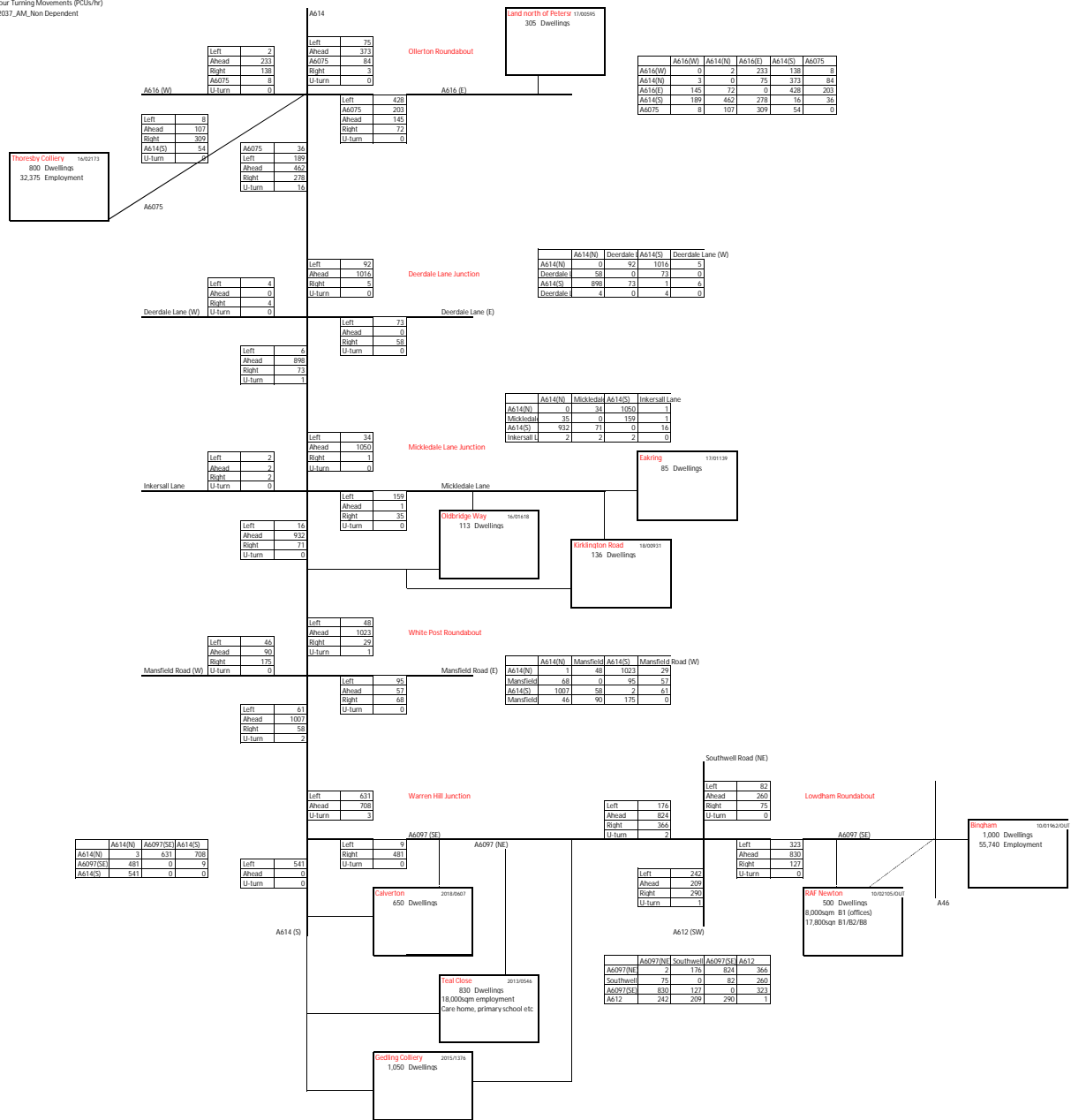












Left	2
Ahead	233
Right	138
A6075	8
U-turn	0

Left	29
Ahead	273
A6075	84
Right	3
U-turn	0

Left	428
A6075	203
Ahead	145
Right	72
U-turn	0

	A616(W)	A614(N)	A616(E)	A614(S)	A6075
A616(W)	0	2	233	138	8
A614(N)	3	0	75	273	84
A616(E)	145	72	0	428	203
A614(S)	189	462	278	16	36
A6075	8	107	309	54	0

Left	8
Ahead	107
Right	309
A614(S)	54
U-turn	0

A6075	30
Left	189
Ahead	462
Right	278
U-turn	16

Left	4
Ahead	0
Right	4
U-turn	0

Left	92
Ahead	1016
Right	5
U-turn	0

A614(N)	A614(S)	Deerdale	A614(S)	Deerdale Lane (W)
A614(N)	0	92	1016	3
Deerdale	58	0	73	0
A614(S)	898	73	1	0
Deerdale	4	0	0	0

Left	4
Ahead	896
Right	73
U-turn	1

Left	71
Ahead	0
Right	56
U-turn	0

A614(N)	Micklesdale	A614(S)	Inkersall Lane
A614(N)	0	34	1050
Micklesdale	35	0	159
A614(S)	932	71	0
Inkersall	2	2	2

Left	2
Ahead	2
Right	2
U-turn	0

Left	34
Ahead	1050
Right	1
U-turn	0

Left	159
Ahead	1
Right	35
U-turn	0

Left	16
Ahead	0
Right	71
U-turn	0

Left	16
Ahead	932
Right	2
U-turn	0

Left	49
Ahead	1023
Right	29
U-turn	1

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
A614(N)	1	48	1023
Mansfield	48	0	95
A614(S)	1007	59	2
Mansfield	46	90	175

Left	46
Ahead	90
Right	2
U-turn	0

Left	49
Ahead	1023
Right	29
U-turn	1

Left	95
Ahead	1
Right	68
U-turn	0

Left	61
Ahead	1023
Right	58
U-turn	2

Left	631
Ahead	768
Right	5
U-turn	0

Left	5
Right	48
U-turn	0

Left	178
Ahead	824
Right	366
U-turn	2

Left	82
Ahead	260
Right	75
U-turn	0

A614(N)	A6097(SE)	A614(S)
A614(N)	3	631
A6097(SE)	481	0
A614(S)	541	0

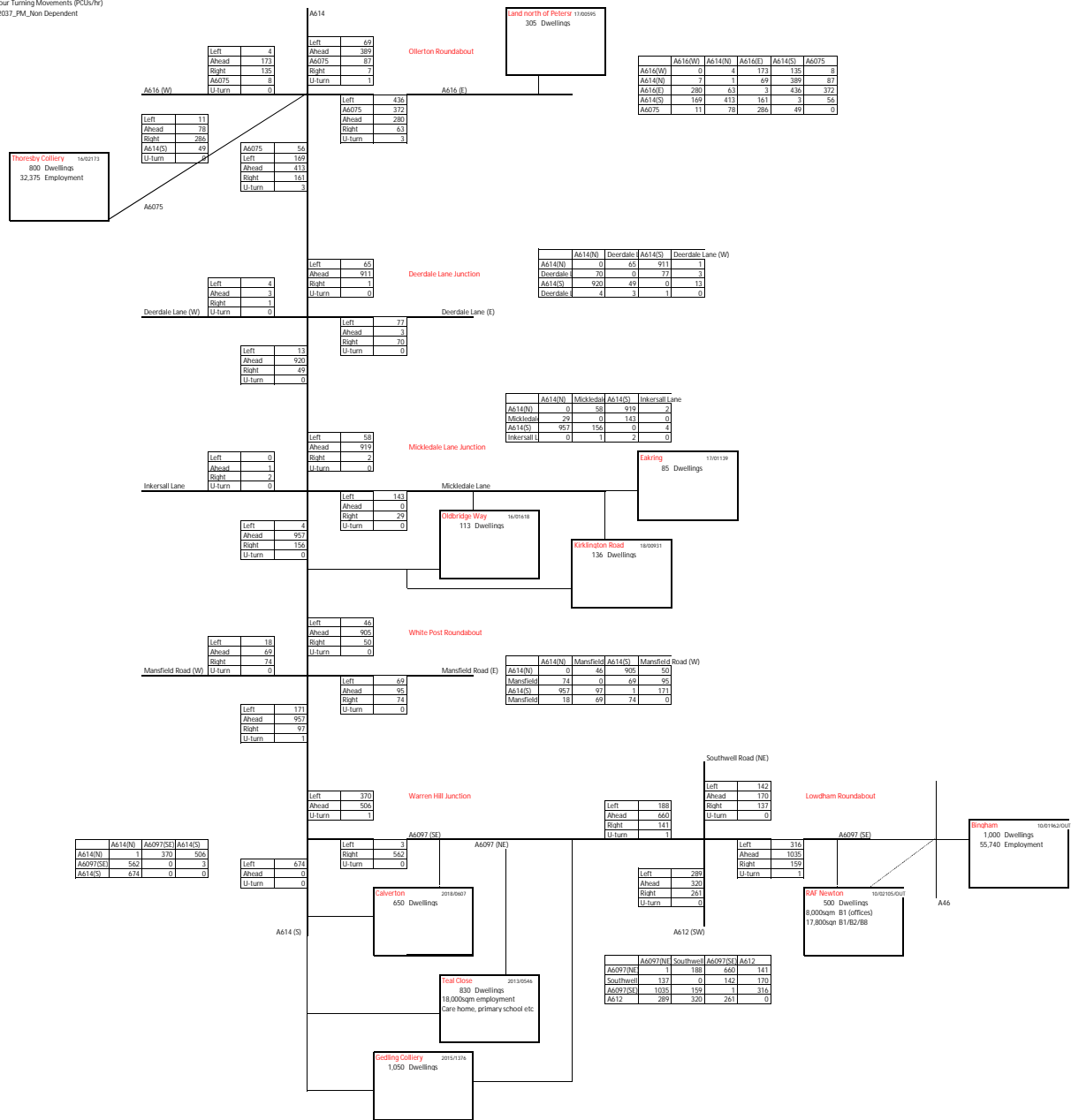
Left	541
Ahead	0
Right	0
U-turn	0

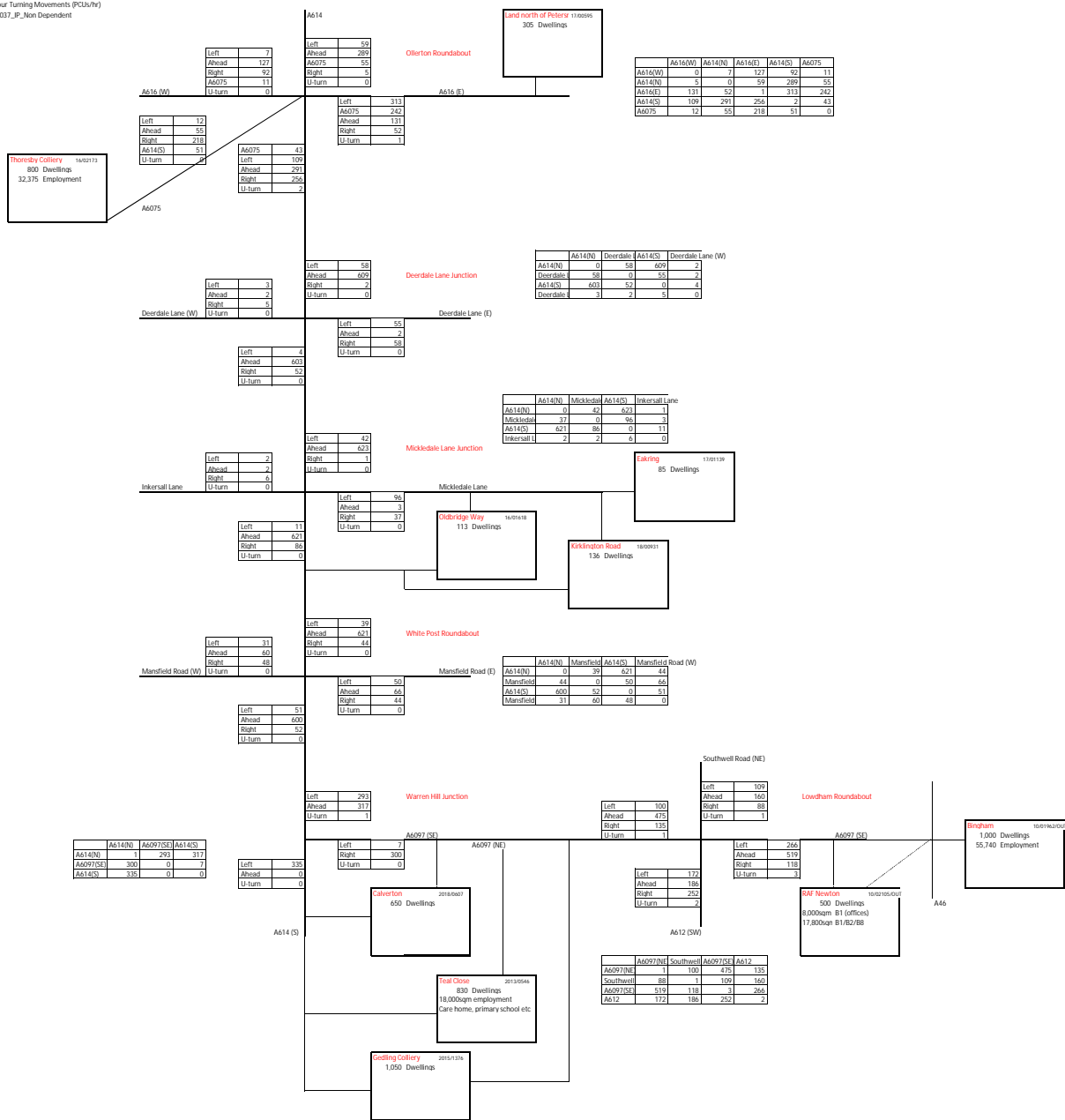
Left	5
Right	48
U-turn	0

Left	178
Ahead	824
Right	366
U-turn	2

Left	323
Ahead	830
Right	127
U-turn	0

A6097(NE)	Southwell	A6097(SE)	A612
A6097(NE)	2	176	824
Southwell	75	0	82
A6097(SE)	826	127	0
A612	242	209	290





Left	7
Ahead	127
Right	92
A6075	11
U-turn	0

Left	59
Ahead	289
Right	5
U-turn	0

Orlerton Roundabout

Land north of Orlerton  
 11,000sqm  
 205 Dwellings

A616(W)	A614(N)	A616(E)	A614(S)	A6075
0	7	127	92	11
5	0	92	289	55
131	52	1	313	242
109	291	256	2	43
12	55	218	51	0

Left	12
Ahead	35
Right	218
A614(S)	51
U-turn	0

Left	43
Ahead	109
Right	291
U-turn	2

Thorosby Colliery  
 14,000sqm  
 800 Dwellings  
 32,375 Employment

Left	3
Ahead	2
Right	5
U-turn	0

Left	58
Ahead	609
Right	2
U-turn	0

Deerdale Lane Junction

A614(N)	A614(S)	Deerdale	A614(S)	Deerdale Lane (W)
0	58	609	2	0
58	0	55	2	0
603	52	0	4	0
3	2	5	0	0

Left	4
Ahead	603
Right	52
U-turn	0

Left	55
Ahead	3
Right	56
U-turn	0

Deerdale Lane (E)

A614(N)	Micklesdale	A614(S)	Inkersall Lane
0	43	623	1
37	0	66	3
621	86	0	11
2	2	6	0

Left	43
Ahead	623
Right	1
U-turn	0

Micklesdale Lane Junction

Faking  
 11,000sqm  
 85 Dwellings

Left	2
Ahead	2
Right	0
U-turn	0

Left	96
Ahead	37
Right	0
U-turn	0

Oakridge Way  
 14,000sqm  
 113 Dwellings

Kirklington Road  
 10,000sqm  
 136 Dwellings

Left	11
Ahead	621
Right	86
U-turn	0

Left	29
Ahead	621
Right	44
U-turn	0

White Post Roundabout

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
0	39	621	44
44	0	50	66
600	52	0	51
31	60	48	0

Left	31
Ahead	60
Right	46
U-turn	0

Left	50
Ahead	66
Right	44
U-turn	0

Mansfield Road (E)

Left	51
Ahead	603
Right	52
U-turn	0

Left	293
Ahead	317
Right	1

Warren Hill Junction

Left	100
Ahead	475
Right	135
U-turn	1

Left	105
Ahead	160
Right	98
U-turn	1

Lowdham Roundabout

A614(N)	A6097(SE)	A614(S)
1	293	317
300	0	7
335	0	0

Left	336
Ahead	603
Right	46
U-turn	0

Left	7
Ahead	300
Right	0
U-turn	0

A6097 (SE)

Left	172
Ahead	186
Right	252
U-turn	2

Left	266
Ahead	519
Right	118
U-turn	3

RAF Newton  
 10,000sqm  
 500 Dwellings  
 8,000sqm B1 (offices)  
 17,800sqm B1/B2/B8

Stratham  
 10,000sqm  
 1,000 Dwellings  
 55,740 Employment

A614 (S)

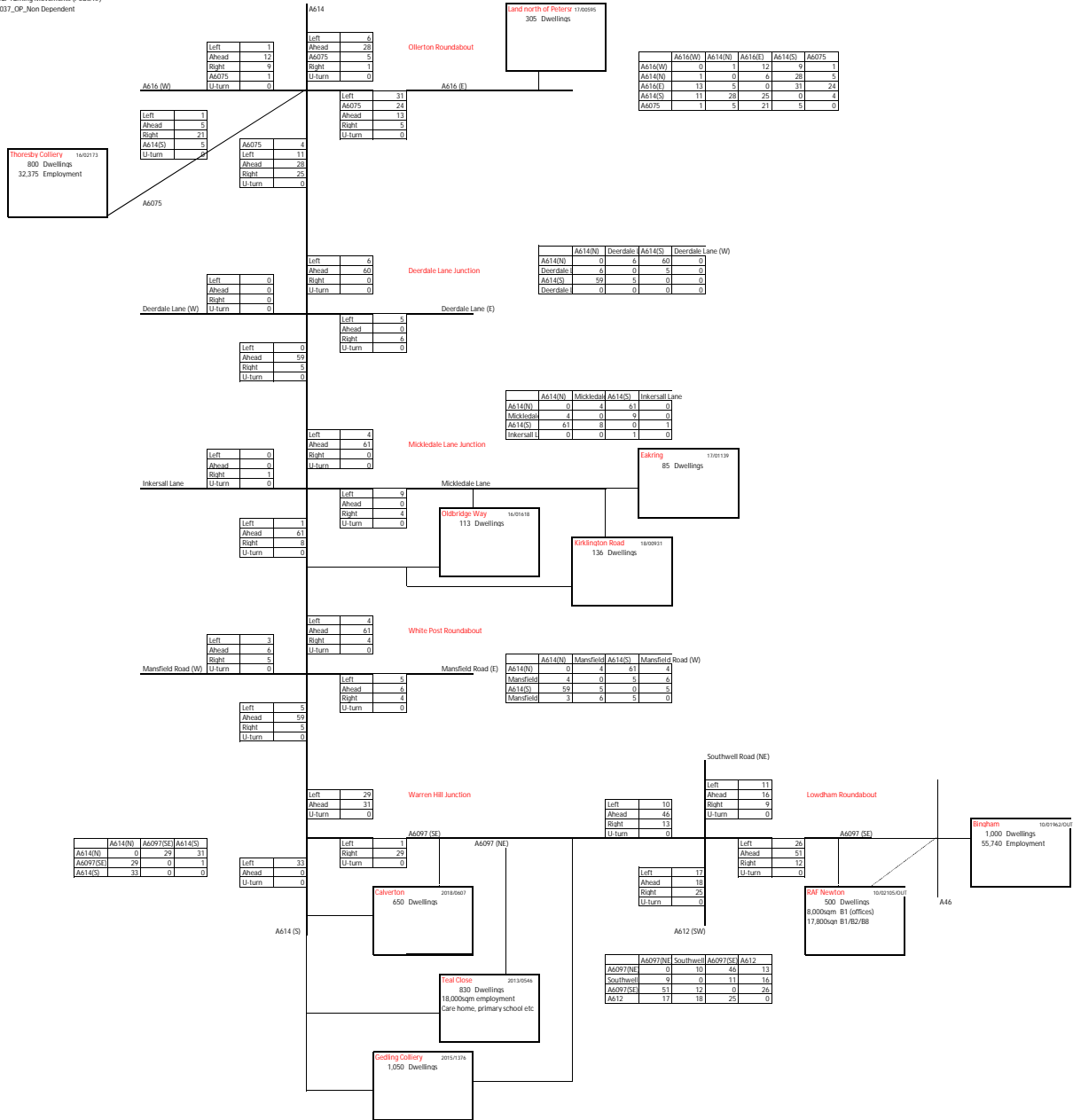
Calverton  
 20,000sqm  
 450 Dwellings

A6097 (NE)

Total Close  
 20,130sqm  
 830 Dwellings  
 18,000sqm employment  
 Care home, primary school etc

A6097(NE)	Southwell	A6097(SE)	A612
1	100	475	135
88	1	109	160
519	118	3	266
172	186	252	2

A612 (SW)



Kirk Hill – 2037

AM - 2037	A	B	C	D	Tot
A	0	80	1310	68	1458
B	128	0	38	56	222
C	1069	6	0	4	1079
D	126	33	11	0	170
Tot	1323	119	1359	128	2929

IP- 2037	A	B	C	D	Tot
A	0	49	728	48	825
B	67	0	30	33	130
C	772	19	0	3	794
D	41	30	8	0	79
Tot	880	98	766	84	1828

PM- 2037	A	B	C	D	Tot
A	0	69	1151	66	1286
B	151	0	27	42	220
C	1452	3	0	4	1459
D	279	53	6	0	338
Tot	1882	125	1184	112	3303

OP - 2037	A	B	C	D	Tot
A	0	4	62	4	70
B	6	0	3	3	12
C	66	2	0	0	68
D	3	3	1	0	7
Tot	75	9	66	7	157



# Appendix P – 2023 & 2037 Junction Turning Movements

Ollerton 2023 AM (PCUS/hr)

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	2	231	134	8	375
A614(N)	3	0	74	363	84	524
A616(E)	142	70	0	407	198	818
A614(S)	183	447	267	15	35	948
A6075	8	107	307	53	0	475
TOTAL	336	626	880	972	325	3140

Ollerton 2023 IP (PCUS/hr)

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	7	125	89	11	233
A614(N)	5	0	58	281	55	399
A616(E)	130	52	1	302	240	725
A614(S)	107	284	247	2	42	682
A6075	12	55	216	51	0	333
TOTAL	253	397	648	726	348	2372

Ollerton 2023 PM (PCUS/hr)

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	4	171	132	8	315
A614(N)	7	1	69	381	88	545
A616(E)	281	63	3	426	372	1146
A614(S)	165	403	154	3	56	782
A6075	11	79	283	50	0	423
TOTAL	464	551	680	992	524	3211

Ollerton 2023 OP (PCUS/hr)

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	1	12	9	1	23
A614(N)	1	0	6	27	5	39
A616(E)	13	5	0	30	23	71
A614(S)	10	28	24	0	4	67
A6075	1	5	21	5	0	33
TOTAL	25	39	63	71	34	232

Deerdale Lane 2023 AM (PCUS/hr)

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	91	980	5	1076
Deerdale Lane (E)	56	0	71	0	128
A614(S)	867	71	1	6	945
Deerdale Lane (W)	4	0	4	0	8
Total	928	161	1056	11	2157

Deerdale Lane 2023 IP (PCUS/hr)

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	57	589	2	648
Deerdale Lane (E)	57	0	54	2	113
A614(S)	585	51	0	3	639
Deerdale Lane (W)	3	2	5	0	10
Total	645	109	648	7	1409

Deerdale Lane 2023 PM (PCUS/hr)

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	63	892	1	956
Deerdale Lane (E)	69	0	76	3	148
A614(S)	902	48	0	13	962
Deerdale Lane (W)	4	3	1	0	8
Total	975	114	968	17	2074

Deerdale Lane 2023 OP (PCUS/hr)

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	6	58	0	63
Deerdale Lane (E)	6	0	5	0	11
A614(S)	57	5	0	0	63
Deerdale Lane (W)	0	0	0	0	1
Total	63	11	63	1	138

Mickledale Lane 2023 AM (PCUS/hr)

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	33	1012	1	1047
Mickledale Lane	35	0	156	1	192
A614(S)	899	69	0	15	983
Inkersall Lane	2	2	2	0	6
Total	936	105	1170	17	2228

Mickledale Lane 2023 IP (PCUS/hr)

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	42	602	1	645
Mickledale Lane	36	0	94	3	133
A614(S)	602	84	0	10	697
Inkersall Lane	2	2	5	0	9
Total	640	128	701	14	1484

Mickledale Lane 2023 PM (PCUS/hr)

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	42	602	1	645
Mickledale Lane	36	0	94	3	133
A614(S)	602	84	0	10	697
Inkersall Lane	2	2	5	0	9
Total	640	128	701	14	1484

Mickledale 2023 OP (PCUS/hr)

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	4	59	0	63
Mickledale Lane	4	0	9	0	13
A614(S)	59	8	0	1	68
Inkersall Lane	0	0	1	0	1
Total	63	13	69	1	145

White Post 2023 AM (PCUS/hr)

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	1	47	978	29	1056
Mansfield Road(E)	67	0	91	57	216
A614(S)	971	56	2	58	1087
Mansfield Road (W)	46	90	168	0	305
Total	1085	194	1239	145	2663

White Post 2023 IP (PCUS/hr)

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	39	595	44	678
Mansfield Road(E)	44	0	48	66	158
A614(S)	577	50	0	50	678
Mansfield Road (W)	31	60	47	0	137
Total	652	149	690	159	1651

White Post 2023 PM (PCUS/hr)

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	46	879	51	976
Mansfield Road(E)	75	0	68	96	238
A614(S)	929	95	1	166	1191
Mansfield Road (W)	18	70	72	0	160
Total	1022	210	1020	313	2566

White Post 2023 OP (PCUS/hr)

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	4	58	4	66
Mansfield Road(E)	4	0	5	6	15
A614(S)	56	5	0	5	66
Mansfield Road (W)	3	6	5	0	13
Total	64	15	67	16	161

Warren Hill 2023 AM (PCUS/hr)

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	3	583	700	1286
A6097(SE)	442	0	8	450
A614(S)	539	0	0	539
Total	985	583	708	2276

Warren Hill 2023 IP (PCUS/hr)

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	266	314	582
A6097(SE)	276	0	7	283
A614(S)	333	0	0	333
Total	610	266	321	1198

Warren Hill 2023 PM (PCUS/hr)

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	337	507	845
A6097(SE)	527	0	3	530
A614(S)	675	0	0	675
Total	1203	337	510	2050

Warren Hill 2023 OP (PCUS/hr)

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	0	26	31	57
A6097(SE)	27	0	1	28
A614(S)	33	0	0	33
Total	60	26	31	117



Lowdham 2023 AM (PCUS/hr)

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	2	175	779	364	1321
Southwell Road	75	0	78	259	413
A6097(SE)	792	122	0	300	1214
A612	240	206	258	1	705
Total	1109	503	1115	925	3652

Lowdham 2023 IP (PCUS/hr)

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	99	450	133	684
Southwell Road	88	1	104	159	351
A6097(SE)	496	113	3	245	857
A612	170	185	231	2	587
Total	755	398	787	539	2480

Lowdham 2023 PM (PCUS/hr)

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	190	633	139	963
Southwell Road	138	0	137	169	444
A6097(SE)	1005	155	1	290	1452
A612	290	321	243	0	854
Total	1434	666	1013	599	3713

Lowdham 2023 OP (PCUS/hr)

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	0	10	44	13	67
Southwell Road	9	0	10	16	34
A6097(SE)	48	11	0	24	84
A612	17	18	23	0	57
Total	74	39	77	53	242

Kirk Hill 2023 AM  
(PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	75	1188	63	1326
Kirk Hill	121	0	36	56	213
A6097 (SE)	985	6	0	3	994
E Bridgford Rd	120	33	9	0	162
Total	1226	114	1233	122	2695

Kirk Hill 2023 IP (PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	48	642	44	734
Kirk Hill	60	0	29	33	122
A6097 (SE)	698	19	0	3	720
E Bridgford Rd	38	30	6	0	74
Total	796	97	677	80	1650

Kirk Hill 2023 PM  
(PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	64	1115	60	1239
Kirk Hill	143	0	29	42	214
A6097 (SE)	1421	5	0	7	1433
E Bridgford Rd	254	53	7	0	314
Total	1818	122	1151	109	3200

Kirk Hill 2023 OP (PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	4	55	4	63
Kirk Hill	5	0	2	3	10
A6097 (SE)	59	2	0	0	61
E Bridgford Rd	3	3	1	0	7
Total	67	9	58	7	141

Ollerton 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	2	233	138	8	380
A614(N)	3	0	75	373	84	535
A616(E)	145	72	0	428	203	848
A614(S)	189	462	278	16	36	981
A6075	8	107	309	54	0	478
TOTAL	345	643	895	1009	330	3222

Ollerton 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	7	127	92	11	236
A614(N)	5	0	59	289	55	407
A616(E)	131	52	1	313	242	740
A614(S)	109	291	256	2	43	701
A6075	12	55	218	51	0	336
TOTAL	257	405	661	746	351	2420

Ollerton 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	4	173	135	8	320
A614(N)	7	1	69	389	87	553
A616(E)	280	63	3	436	372	1155
A614(S)	169	413	161	3	56	802
A6075	11	78	286	49	0	425
TOTAL	467	560	693	1012	523	3256

Ollerton 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	1	12	9	1	23
A614(N)	1	0	6	28	5	40
A616(E)	13	5	0	31	24	72
A614(S)	11	28	25	0	4	69
A6075	1	5	21	5	0	33
TOTAL	25	40	65	73	34	237

Deerdale Lane 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	92	1016	5	1113
Deerdale Lane (E)	58	0	73	0	132
A614(S)	898	73	1	6	978
Deerdale Lane (W)	4	0	4	0	8
Total	960	165	1094	12	2231

Deerdale Lane 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	58	609	2	669
Deerdale Lane (E)	58	0	55	2	116
A614(S)	603	52	0	4	659
Deerdale Lane (W)	3	2	5	0	10
Total	664	112	669	8	1453

Deerdale Lane 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	65	911	1	977
Deerdale Lane (E)	70	0	77	3	150
A614(S)	920	49	0	13	982
Deerdale Lane (W)	4	3	1	0	8
Total	994	116	989	17	2117

Deerdale Lane 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	6	60	0	65
Deerdale Lane (E)	6	0	5	0	11
A614(S)	59	5	0	0	64
Deerdale Lane (W)	0	0	0	0	1
Total	65	11	65	1	142

Mickledale Lane 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	34	1050	1	1084
Mickledale Lane	35	0	159	1	196
A614(S)	932	71	0	16	1019
Inkersall Lane	2	2	2	0	6
Total	970	107	1211	18	2305

Mickledale Lane 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	42	623	1	666
Mickledale Lane	37	0	96	3	136
A614(S)	621	86	0	11	718
Inkersall Lane	2	2	6	0	9
Total	660	130	725	15	1529

Mickledale Lane 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	58	919	2	979
Mickledale Lane	29	0	143	0	172
A614(S)	957	156	0	4	1117
Inkersall Lane	0	1	2	0	3
Total	986	215	1064	6	2272

Mickledale 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	4	61	0	65
Mickledale Lane	4	0	9	0	13
A614(S)	61	8	0	1	70
Inkersall Lane	0	0	1	0	1
Total	64	13	71	1	149

White Post 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	1	48	1023	29	1102
Mansfield Road(E)	68	0	95	57	219
A614(S)	1007	58	2	61	1128
Mansfield Road (W)	46	90	175	0	311
Total	1122	196	1294	147	2760

White Post 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	39	621	44	704
Mansfield Road(E)	44	0	50	66	160
A614(S)	600	52	0	51	704
Mansfield Road (W)	31	60	48	0	139
Total	676	151	720	161	1707

White Post 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	46	905	50	1001
Mansfield Road(E)	74	0	69	95	239
A614(S)	957	97	1	171	1226
Mansfield Road (W)	18	69	74	0	162
Total	1050	212	1050	316	2628

White Post 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	4	61	4	69
Mansfield Road(E)	4	0	5	6	16
A614(S)	59	5	0	5	69
Mansfield Road (W)	3	6	5	0	14
Total	66	15	70	16	167



Warren Hill 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	3	631	708	1341
A6097(SE)	481	0	9	490
A614(S)	541	0	0	541
Total	1026	631	716	2372

Warren Hill 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	293	317	611
A6097(SE)	300	0	7	307
A614(S)	335	0	0	335
Total	637	293	324	1254

Warren Hill 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	370	506	876
A6097(SE)	562	0	3	565
A614(S)	674	0	0	674
Total	1237	370	509	2116

Warren Hill 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	0	29	31	60
A6097(SE)	29	0	1	30
A614(S)	33	0	0	33
Total	62	29	32	123

Lowdham 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	2	176	824	366	1368
Southwell Road	75	0	82	260	418
A6097(SE)	830	127	0	323	1280
A612	242	209	290	1	742
Total	1149	511	1197	950	3808

Lowdham 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	100	475	135	710
Southwell Road	88	1	109	160	358
A6097(SE)	519	118	3	266	906
A612	172	186	252	2	611
Total	780	404	839	562	2585

Lowdham 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	188	660	141	991
Southwell Road	137	0	142	170	450
A6097(SE)	1035	159	1	316	1510
A612	289	320	261	0	869
Total	1462	667	1064	626	3820

Lowdham 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	0	10	46	13	69
Southwell Road	9	0	11	16	35
A6097(SE)	51	12	0	26	89
A612	17	18	25	0	60
Total	76	39	82	55	253

Lowdham 2037 AM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	2	176	824	366	1368
Southwell Road	75	0	82	260	418
A6097(SE)	830	127	0	323	1280
A612	242	209	290	1	742
Total	1149	511	1197	950	3808

Lowdham 2037 IP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	100	475	135	710
Southwell Road	88	1	109	160	358
A6097(SE)	519	118	3	266	906
A612	172	186	252	2	611
Total	780	404	839	562	2585

Lowdham 2037 PM (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	188	660	141	991
Southwell Road	137	0	142	170	450
A6097(SE)	1035	159	1	316	1510
A612	289	320	261	0	869
Total	1462	667	1064	626	3820

Lowdham 2037 OP (PCUS/hr) - DM and DS - Excluding Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	0	10	46	13	69
Southwell Road	9	0	11	16	35
A6097(SE)	51	12	0	26	89
A612	17	18	25	0	60
Total	76	39	82	55	253

Kirk Hill 2037 AM  
(PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	80	1310	68	1458
Kirk Hill	128	0	38	56	222
A6097 (SE)	1069	6	0	4	1079
E Bridgford Rd	126	33	11	0	170
Total	1323	119	1359	128	2929

Kirk Hill 2037 IP (PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	49	728	48	825
Kirk Hill	67	0	30	33	130
A6097 (SE)	772	19	0	3	794
E Bridgford Rd	41	30	8	0	79
Total	880	98	766	84	1828

Kirk Hill 2037 PM  
(PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	69	1151	66	1286
Kirk Hill	151	0	27	42	220
A6097 (SE)	1452	3	0	4	1459
E Bridgford Rd	279	53	6	0	338
Total	1882	125	1184	112	3303

Kirk Hill 2037 OP (PCUS/hr)

To/From	A6097 (NW)	Kirk Hill	A6097 (SE)	E Bridgford Rd	Total
A6097 (NW)	0	4	62	4	70
Kirk Hill	6	0	3	3	12
A6097 (SE)	66	2	0	0	68
E Bridgford Rd	3	3	1	0	7
Total	75	9	66	7	157

Ollerton 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	2	233	139	26	400
A614(N)	3	0	75	379	120	577
A616(E)	145	72	0	451	246	914
A614(S)	192	470	357	16	129	1164
A6075	29	152	378	207	0	766
TOTAL	370	697	1041	1192	522	3822

Ollerton 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	7	127	93	23	250
A614(N)	5	0	59	293	79	436
A616(E)	131	52	1	334	277	795
A614(S)	111	296	292	2	119	819
A6075	24	80	254	130	0	489
TOTAL	272	435	732	851	498	2789

Ollerton 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	4	176	139	24	343
A614(N)	7	1	71	400	124	603
A616(E)	285	64	3	495	437	1284
A614(S)	175	428	259	3	189	1054
A6075	30	117	339	155	0	642
TOTAL	497	614	849	1192	774	3927

Ollerton 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

From\To	A616(W)	A614(N)	A616(E)	A614(S)	A6075	TOTAL
A616(W)	0	1	12	9	2	24
A614(N)	1	0	6	29	8	43
A616(E)	13	5	0	31	27	76
A614(S)	11	29	25	0	12	77
A6075	2	8	25	13	0	48
TOTAL	27	43	68	82	49	268

Deerdale Lane 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	104	1170	6	1280
Deerdale Lane (E)	63	0	74	0	137
A614(S)	1003	74	1	6	1085
Deerdale Lane (W)	4	0	4	0	9
Total	1070	179	1249	13	2510

Deerdale Lane 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	64	692	2	759
Deerdale Lane (E)	64	0	56	2	122
A614(S)	683	53	0	4	740
Deerdale Lane (W)	3	2	5	0	10
Total	750	119	754	8	1630

Deerdale Lane 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	71	1038	1	1111
Deerdale Lane (E)	79	0	79	3	161
A614(S)	1073	50	0	14	1137
Deerdale Lane (W)	5	3	1	0	9
Total	1156	124	1119	18	2417

Deerdale Lane 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Deerdale Lane (E)	A614(S)	Deerdale Lane (W)	Total
A614(N)	0	6	68	0	74
Deerdale Lane (E)	6	0	5	0	12
A614(S)	67	5	0	0	72
Deerdale Lane (W)	0	0	0	0	1
Total	73	12	74	1	159



Mickledale Lane 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	38	1200	1	1239
Mickledale Lane	39	0	161	1	201
A614(S)	1035	73	0	16	1124
Inkersall Lane	2	2	2	0	6
Total	1076	113	1363	18	2570

Mickledale Lane 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	47	702	1	750
Mickledale Lane	40	0	98	3	141
A614(S)	698	87	0	11	797
Inkersall Lane	2	2	6	0	9
Total	741	136	806	15	1698

Mickledale Lane 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	65	1041	2	1108
Mickledale Lane	33	0	147	0	180
A614(S)	1108	161	0	5	1273
Inkersall Lane	0	1	2	0	3
Total	1141	227	1190	7	2565

Mickledale 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mickledale Lane	A614(S)	Inkersall Lane	Total
A614(N)	0	5	69	0	73
Mickledale Lane	4	0	10	0	14
A614(S)	68	9	0	1	78
Inkersall Lane	0	0	1	0	1
Total	72	13	79	1	166

White Post 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	1	54	1165	33	1254
Mansfield Road(E)	73	0	96	57	227
A614(S)	1103	59	2	62	1225
Mansfield Road (W)	50	90	178	0	318
Total	1227	204	1441	152	3024

White Post 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	43	693	49	785
Mansfield Road(E)	49	0	51	66	166
A614(S)	671	53	0	53	777
Mansfield Road (W)	34	60	49	0	143
Total	754	156	794	167	1871

White Post 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	51	1019	56	1126
Mansfield Road(E)	85	0	72	96	253
A614(S)	1099	101	1	177	1378
Mansfield Road (W)	21	70	77	0	168
Total	1205	222	1169	330	2925

White Post 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	Mansfield Road(E)	A614(S)	Mansfield Road (W)	Total
A614(N)	0	4	68	5	77
Mansfield Road(E)	5	0	5	6	16
A614(S)	66	5	0	5	76
Mansfield Road (W)	3	6	5	0	14
Total	74	15	78	16	183

Warren Hill 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	3	706	778	1488
A6097(SE)	535	0	9	544
A614(S)	585	0	0	585
Total	1123	706	787	2616

Warren Hill 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	333	351	685
A6097(SE)	340	0	8	348
A614(S)	368	0	0	368
Total	710	333	358	1401

Warren Hill 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	1	424	567	992
A6097(SE)	639	0	4	642
A614(S)	749	0	0	749
Total	1389	424	571	2383

Warren Hill 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A614(N)	A6097(SE)	A614(S)	Total
A614(N)	0	33	34	67
A6097(SE)	33	0	1	34
A614(S)	36	0	0	36
Total	69	33	35	137

Lowdham 2037 AM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	2	183	855	404	1444
Southwell Road	78	0	82	278	438
A6097(SE)	852	127	0	342	1321
A612	272	227	309	1	808
Total	1203	537	1246	1025	4011

Lowdham 2037 IP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	103	491	155	751
Southwell Road	91	1	109	173	373
A6097(SE)	535	118	3	278	934
A612	193	199	265	2	659
Total	820	421	868	608	2717

Lowdham 2037 PM (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	1	198	691	165	1056
Southwell Road	144	0	145	188	477
A6097(SE)	1085	162	1	336	1583
A612	324	344	284	0	952
Total	1555	704	1121	688	4068

Lowdham 2037 OP (PCUS/hr) - DM and DS - Including Dependent Development

To/From	A6097(NE)	Southwell Road	A6097(SE)	A612	Total
A6097(NE)	0	10	48	15	73
Southwell Road	9	0	11	17	36
A6097(SE)	52	12	0	27	91
A612	19	19	26	0	64
Total	80	41	85	59	266

# Appendix Q – AADT Calculation

# Technical Note

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Project:	<b>A614 Corridor MRN</b>	Job No:	<b>60595614</b>
Subject:	<b>AADT Factor calculation</b>		
Prepared by:	<b>Georgie Carpenter</b>	Date:	<b>15/12/2020</b>
Checked by:	<b>Daniel Godfrey</b>	Date:	<b>15/12/20</b>
Approved by:	<b>Adam Hall</b>	Date:	<b>15/12/20</b>

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## 1.0 Introduction

This Technical Note (TN) has been prepared in response to a query raised by the DfT regarding the calculation of AADT values associated with the A614 corridor improvement scheme.

The following comment was raised:

*“The calculation of AADT is not clear; a worked example should be provided for the sake of clarity. Please provide a clearer explanation of how AADT flows were derived, being clear on the definition of what is an hourly flow, a peak hour flow and peak period flow and what those hours and periods are and subsequently how an AADT has been derived.*”

This TN explains the calculation of the AADT factor, supported by worked examples throughout.

## 2.0 Calculation of AADT factor

### Step 1: Long term count data

Long term count data on the A614 corridor was available from five sites:

- A614 Bilsthorpe (N) (Site ID: 000030306363);
- A614 Bilsthorpe (S) (Site ID: 000030306359);
- A6097 Warren Hill (S) (Site ID: 0000352206253);
- A6097 Lowdham (N) (Site ID: 000030806547); and
- A6097 Lowdham (S) (Site ID: 000030006745).

The locations of each site are shown in Figures 2.1 – 2.5.



Figure 2.1: A614 Bilsthorpe (N) (Site ID: 000030306363)

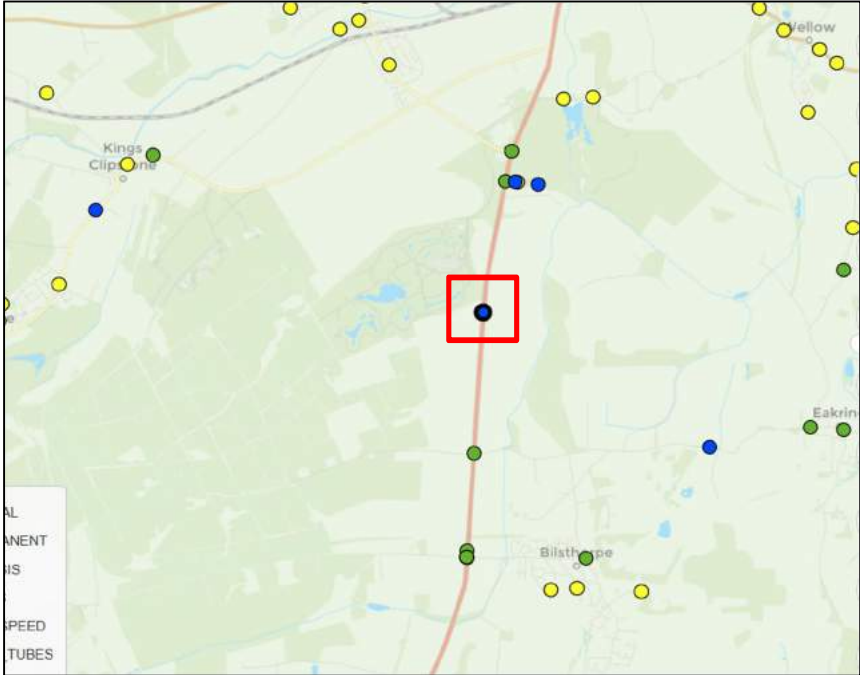
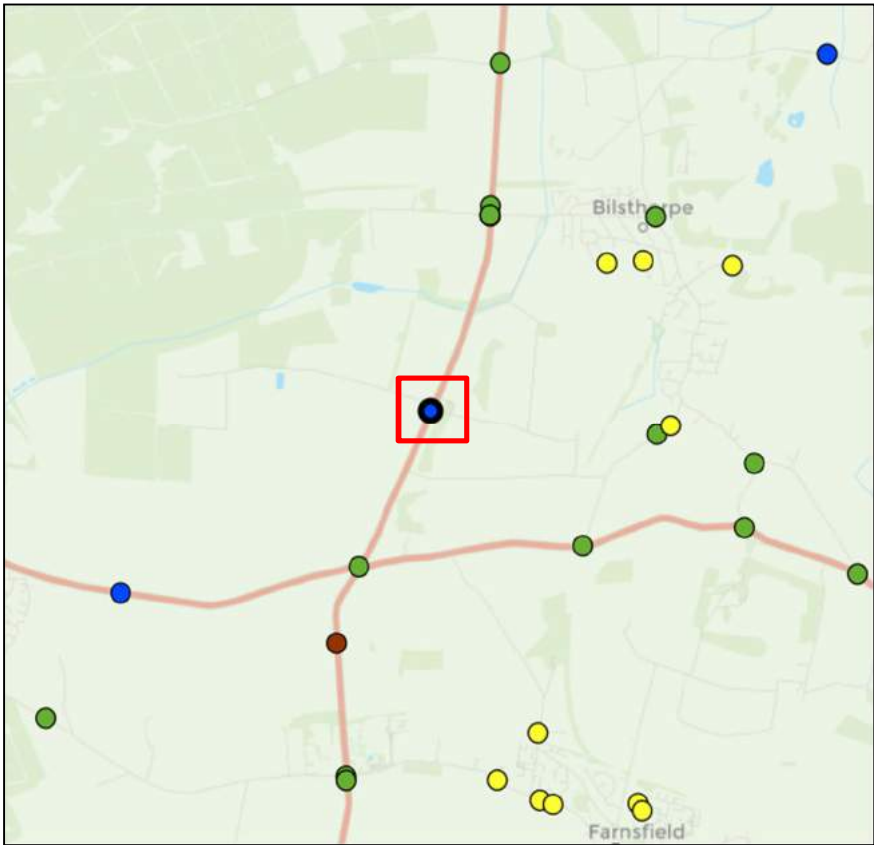
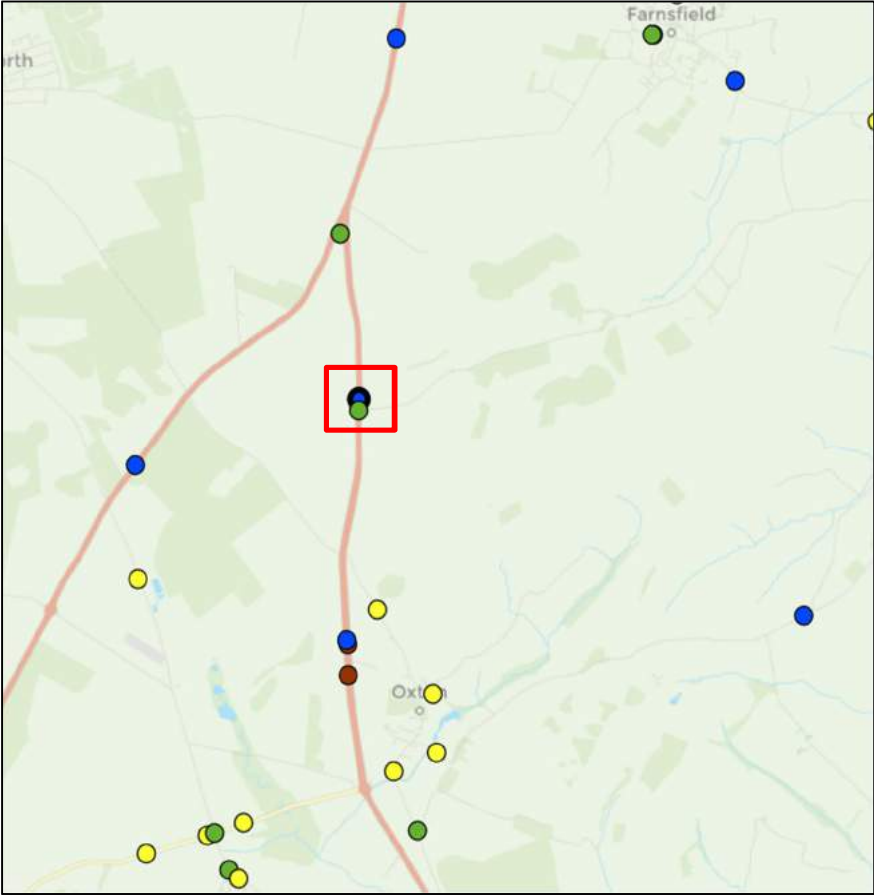


Figure 2.2: A614 Bilsthorpe (S) (Site ID: 000030306359)



**Figure 2.3:** A6097 Warren Hill (S) (Site ID: 0000352206253)



**Figure 2.4:** A6097 Lowdham (N) (Site ID: 000030806547)





Step 2: Combine count site data

The raw data from each count site is then summarized (by hour, by day) to yield a total for all count sites along the corridor, whereby:

Total = A614 Bilsthorpe (N) + A614 Bilsthorpe (S) + A6097 Warren Hill (S) + A6097 Lowdham (N) + A6097 Lowdham (S).

Figure 2.7 provides an example of the combined data for clarity (showing January 2018).

Figure 2.7: Combined count data (January 2018)

Table with columns for Northbound and Southbound directions, showing counts for each day of the month (Jan 1-31) across various time periods. The table is split into two sections: Northbound and Southbound.

Data was combined for the northbound and southbound directions separately.

Step 3: 5-day / 7-day corridor average

The 5-day and 7-day corridor average was then calculated as follows:

5-day average = Sum of all combined weekday traffic flows / number of weekdays

7-day average = Sum of all combined traffic flows / number of days

Table 2.1 and 2.2 presents the 5- and 7-day averages for the corridor for the northbound and southbound direction, respectively.

Table 2.1: 5- and 7-day averages (Northbound direction) – corridor total

Table with 3 columns: Time period (00:00:00 to 07:00:00), 5-day average, and 7-day average.

08:00:00	3699	3034
09:00:00	2890	2658
10:00:00	2573	2586
11:00:00	2586	2684
12:00:00	2686	2795
13:00:00	2788	2792
14:00:00	3042	2903
15:00:00	3575	3238
16:00:00	4286	3747
17:00:00	4298	3704
18:00:00	3060	2680
19:00:00	1649	1535
20:00:00	1052	998
21:00:00	792	742
22:00:00	630	592
23:00:00	325	330
<b>24 hour total</b>	<b>45,890</b>	<b>41,899</b>

**Table 2.2:** 5- and 7-day averages (Southbound direction) – corridor total

<b>Time period</b>	<b>5-day average</b>	<b>7-day average</b>
00:00:00	116	149
01:00:00	68	81
02:00:00	76	76
03:00:00	106	96
04:00:00	276	228
05:00:00	840	680
06:00:00	2664	2070
07:00:00	4392	3425
08:00:00	3793	3091
09:00:00	2901	2640
10:00:00	2568	2520
11:00:00	2482	2530
12:00:00	2588	2671
13:00:00	2618	2675
14:00:00	2820	2783
15:00:00	3194	3037
16:00:00	3747	3448
17:00:00	3608	3247
18:00:00	2487	2290
19:00:00	1451	1405
20:00:00	916	893
21:00:00	707	684
22:00:00	540	522
23:00:00	273	285
<b>24 hour total</b>	<b>45,231</b>	<b>41,528</b>

## Step 4: Calculate AADT Factors – Northbound & Southbound

Based upon Tables 2.1 and 2.2 above, the corridor total for each peak period can be found. These are shown in Table 2.3 and 2.4 for the northbound and southbound directions, respectively.

**Table 2.3:** Corridor totals by peak period (Northbound)

Time period	Description	Value
7- day 24 hour	Sum of all hours for the 7- day average	41,899
Weekday AM Peak	5- day average for 0800 – 0900*	3,699
Weekday PM Peak	5- day average for 1700 – 1800*	4,298
Weekday Off peak	Average value for the 5- day average between 1000 - 1600	255
Weekday InterPeak	Average value for the 5- day average between 2200 - 0600	2,875

\*Note: whilst the Network Peak hour for the corridor is recognised as 0730 – 0830 and 1630 - 1730, long term count data was not available for this time period and the closest peak hours have been used.

**Table 2.4:** Corridor totals by peak period (Southbound)

Time period	Description	Value
7- day 24 hour	Sum of all hours for the 7- day average	41,528
Weekday AM Peak	5- day average for 0800 – 0900*	3,793
Weekday PM Peak	5- day average for 1700 – 1800*	3,608
Weekday Off Peak	Average value for the 5- day average between 1000 - 1600	287
Weekday Inter Peak	Average value for the 5- day average between 2200 - 0600	2,712

\*Note: whilst the Network Peak hour for the corridor is recognised as 0730 – 0830 and 1630 - 1730, long term count data was not available for this time period and as such standard network peak hours have been used.

The AADT factor is then calculated as follows:

$$7\text{- day 24 hour} / (\text{Weekday AM Peak} + \text{Weekday PM Peak} + \text{Weekday Off Peak} + \text{Weekday Interpeak})$$

Whereby:

$$\text{Northbound factor} = (41,899 / (3,699 + 4,298 + 255 + 2,875)) = \mathbf{3.76}$$

$$\text{Southbound Factor} = (41,528 / (3,793 + 3,608 + 287 + 2,712)) = \mathbf{3.99}$$

## Step 5: Calculate corridor (two-way) AADT factor

The two-way AADT factor is then calculated as an average of the northbound and southbound AADT factors. Whereby:

$$\text{Corridor AADT Factor} = (\text{Northbound Factor} + \text{Southbound Factor}) / 2$$

$$\text{Corridor AADT Factor} = \mathbf{3.876}$$

## Step 6: Calculate AADT flows



The AADT factor calculated in Steps 1 – 5 is then multiplied by the sum of the Baseline AM, IP, PM and OP traffic flows to yield the AADT flows on the corridor, whereby:

$$AADT\ Flow = (AM\ Baseline + PM\ Baseline + IP\ Baseline + OP\ Baseline) * 3.876$$

An example of applying the AADT factor is shown in Tables 2.5 and 2.6 for the Ollerton roundabout.

**Table 2.5:** Ollerton Roundabout – Baseline (sum of AM, PM, IP and OP)

	A616(W)	A616(W)	A616(W)	A616(W)	A616(W)
A616(W)	0	14	526	349	14
A614(N)	16	1	201	999	204
A616(E)	550	185	4	1088	775
A614(S)	442	1095	644	19	52
A6075	17	216	763	65	0

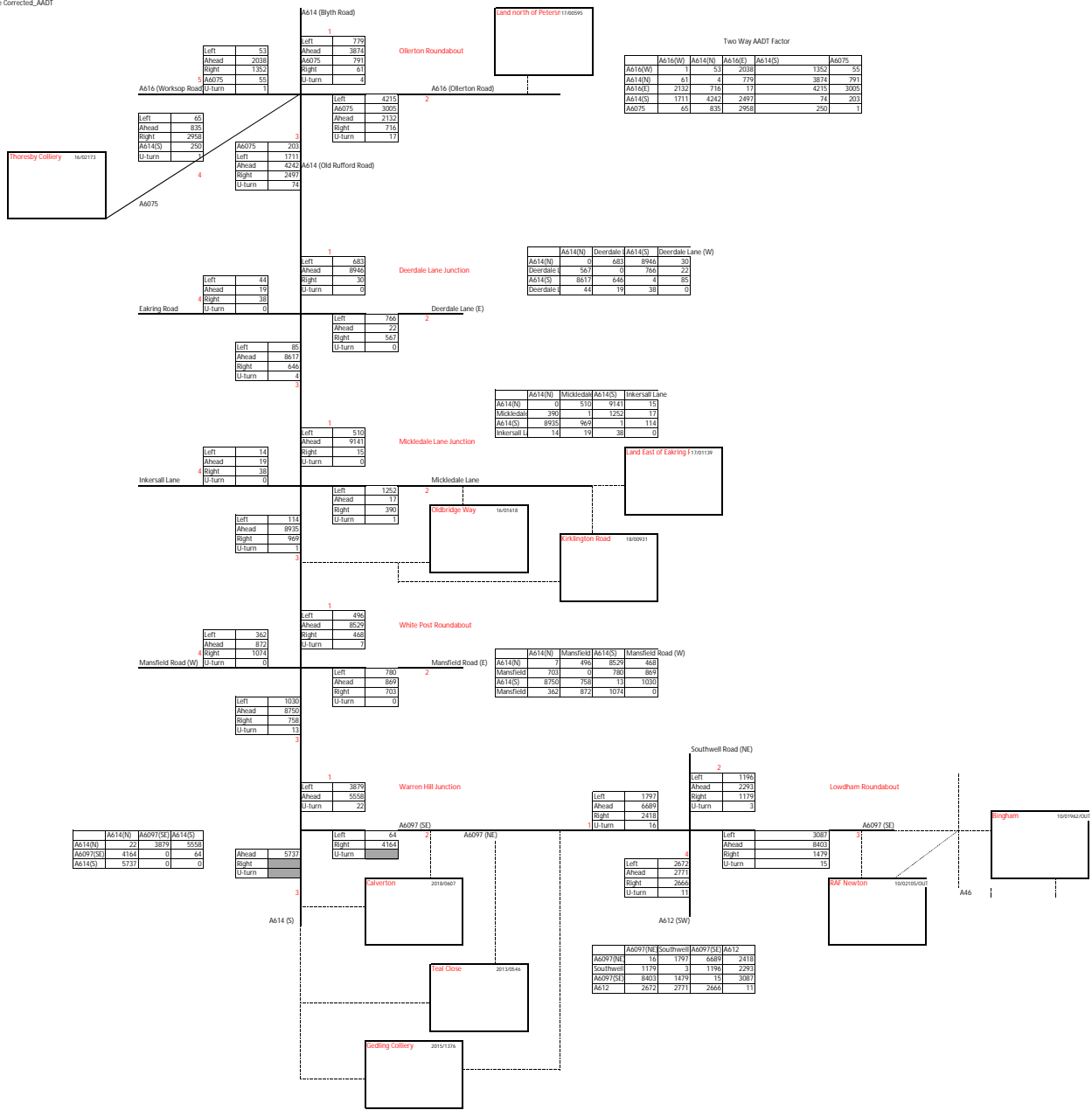
**Table 2.6:** Ollerton Roundabout – AADT ((sum of AM, PM, IP and OP) \* 3.876)

	A616(W)	A616(W)	A616(W)	A616(W)	A616(W)
A616(W)	1	53	2038	1352	55
A614(N)	61	4	779	3874	791
A616(E)	2132	716	17	4215	3005
A614(S)	1711	4242	2497	74	203
A6075	65	835	2958	250	1

### 3.0 Conclusions and Summary

This TN provides a response to the comment raised by the DfT regarding the calculation of AADT values associated with the A614 corridor improvement scheme. The TN provides a step-by-step breakdown of the calculation methodology and is complemented by worked examples of the process throughout.

# Appendix R – AADT Flows



Two Way AADT Factor

	A616(W)	A614(N)	A616(E)	A614(S)	A6075
A614(W)	1	53	2538	1352	53
A614(N)	61	4	779	3874	791
A614(E)	2132	710	17	4215	3005
A614(S)	1711	4242	2497	74	203
A6075	65	836	2968	290	1

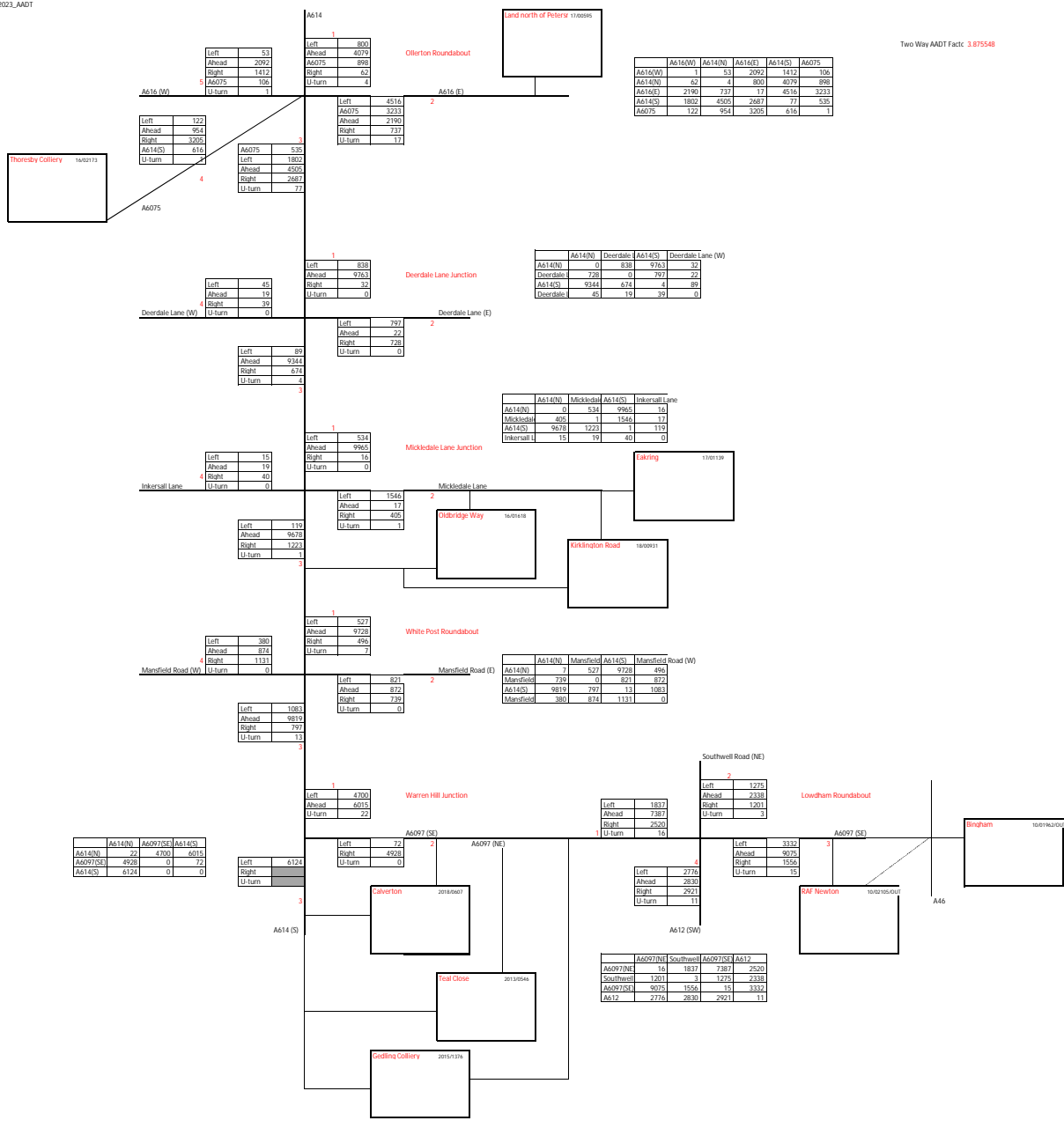
	A614(N)	Deerdeale	A614(S)	Deerdeale Lane (W)
A614(N)	0	683	8946	30
Deerdeale	567	0	764	22
A614(S)	8077	440	4	85
Deerdeale	44	19	38	0

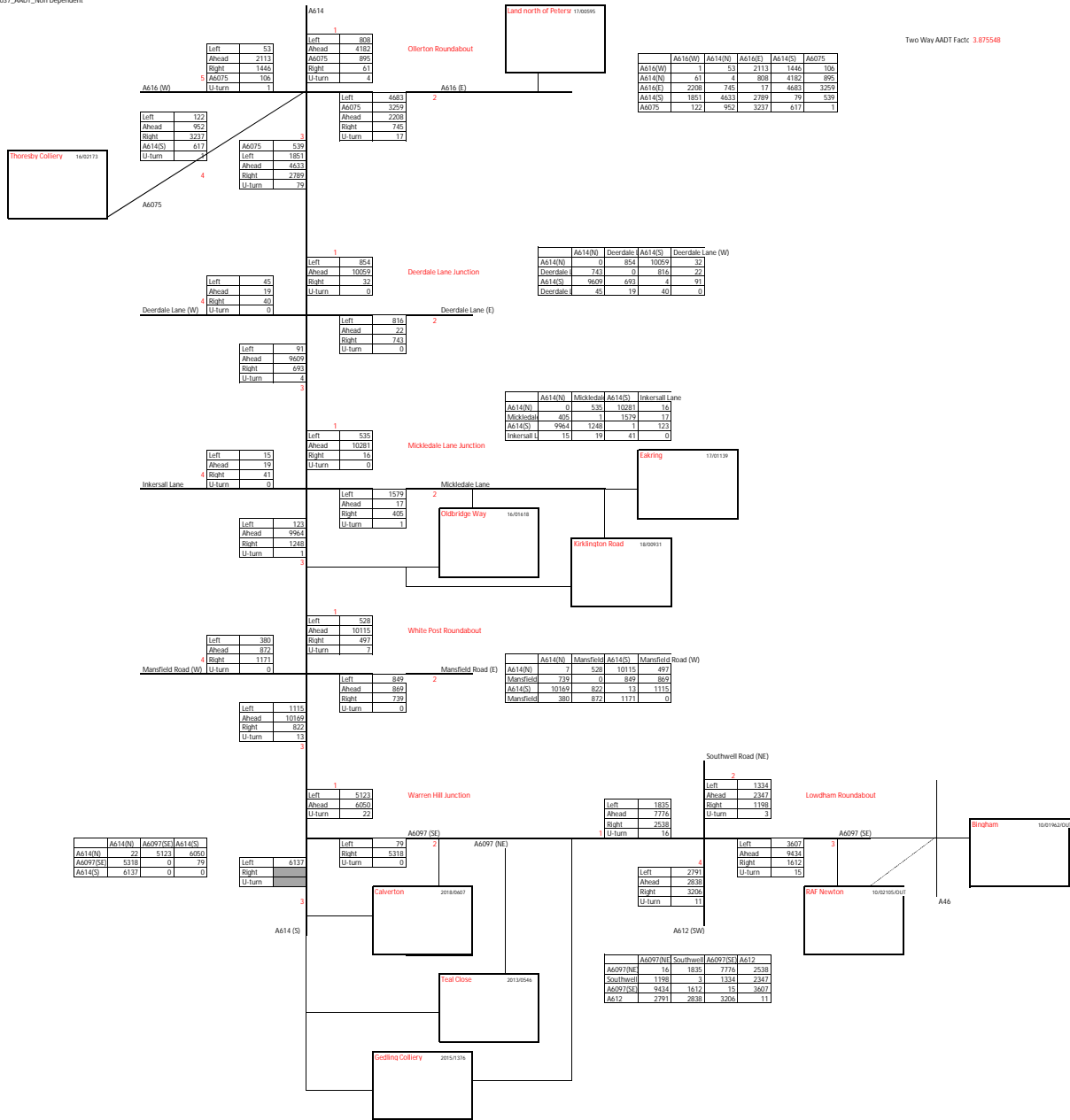
	A614(N)	Mickledale	A614(S)	Inkersall Lane
A614(N)	0	510	914	13
Mickledale	390	1	1252	17
A614(S)	8925	969	1	114
Inkersall	14	19	38	0

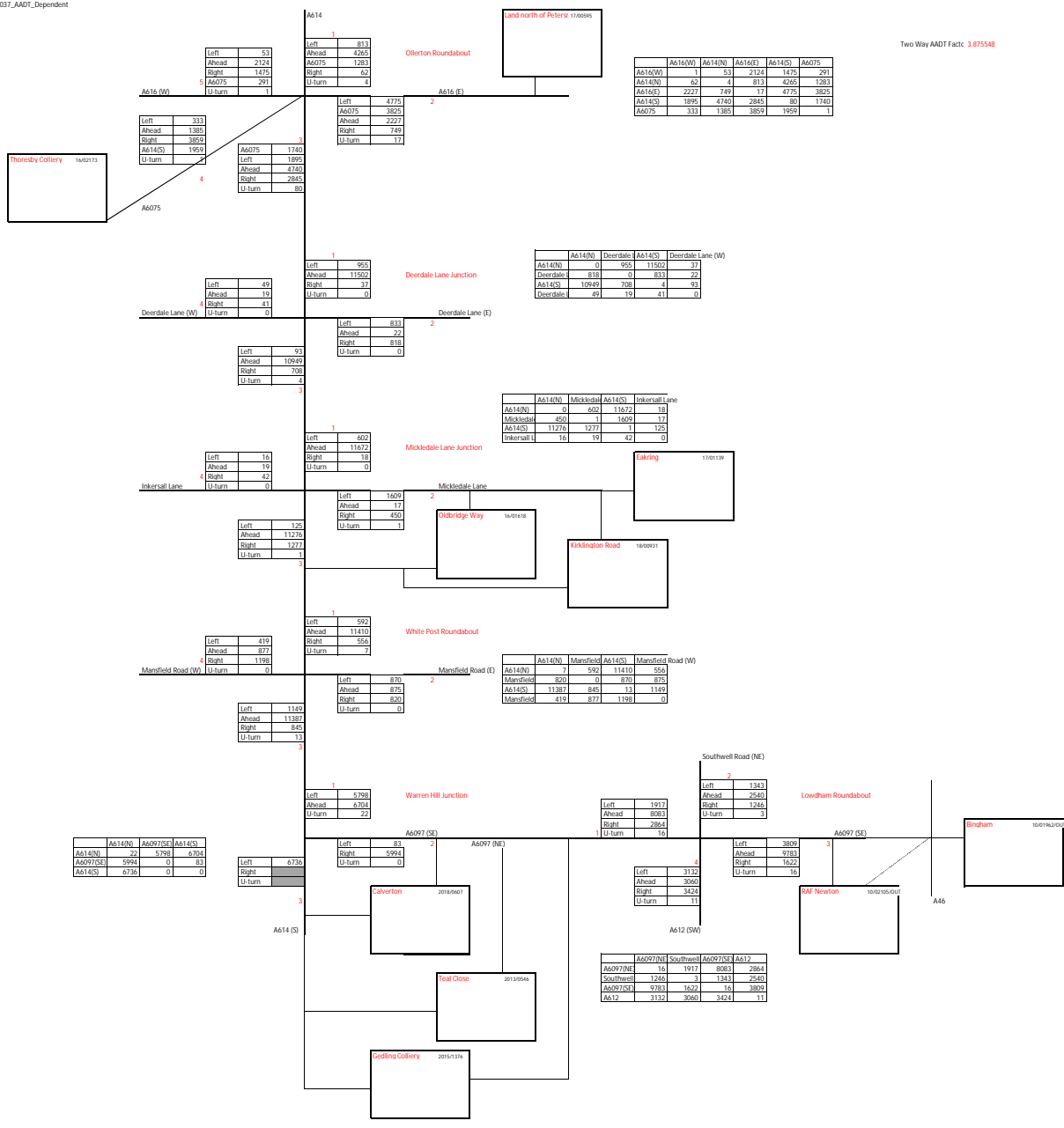
	A614(N)	Mansfield	A614(S)	Mansfield Road (W)
A614(N)	7	696	8525	458
Mansfield	703	0	780	889
A614(S)	8750	758	13	1030
Mansfield	362	872	1074	0

	A6097(NE)	Southwell	A6097(SW)	A612
A6097(NE)	10	1797	6689	2418
Southwell	1174	3	1196	2297
A6097(SW)	8603	1179	13	3987
A612	2672	2771	2666	11

	A614(N)	A6097(SE)	A614(S)
A614(N)	22	3879	5558
A6097(SE)	4164	3	44
A614(S)	5737	0	0







Left	53
Ahead	2124
Right	1475
U-turn	291

A616(W)	A614(N)	A616(E)	A614(S)	A6075
1	33	2124	1475	291
62	4	812	4265	1383
2227	749	17	4735	3825
1895	4740	2845	80	1740
321	1385	3850	1959	1

Left	333
Ahead	1385
Right	3825
U-turn	1959

Left	1740
Ahead	1895
Right	4740
U-turn	80

Left	49
Ahead	19
Right	41
U-turn	0

Left	955
Ahead	11502
Right	37
U-turn	0

A614(N)	A614(S)	Deerdeale	A614(S)	Deerdeale Lane (W)
0	955	11502	27	
818	0	833	22	
10949	708	4	92	
49	19	411	0	

Left	93
Ahead	10949
Right	708
U-turn	4

Left	831
Ahead	22
Right	818
U-turn	0

A614(N)	Mickledeale	A614(S)	Inkershall Lane
0	403	11672	18
450	1	1609	17
11279	1277	1	125
16	19	42	0

Left	16
Ahead	19
Right	42
U-turn	0

Left	403
Ahead	11672
Right	18
U-turn	0

Left	192
Ahead	11279
Right	1
U-turn	1

Left	1609
Ahead	17
Right	450
U-turn	1

Left	419
Ahead	877
Right	1198
U-turn	0

Left	592
Ahead	11410
Right	556
U-turn	7

A614(N)	Mansfield	A614(S)	Mansfield Road (W)
7	592	11410	556
820	0	870	875
11387	845	13	1149
419	877	1198	0

Left	1149
Ahead	11387
Right	845
U-turn	13

Left	820
Ahead	875
Right	820
U-turn	0

Left	6736
Ahead	5994
Right	0
U-turn	0

Left	83
Ahead	5994
Right	0
U-turn	0

Left	1917
Ahead	8083
Right	2884
U-turn	16

Left	1343
Ahead	2540
Right	2540
U-turn	0

A614(N)	A6097(SE)	A614(S)
22	5798	6704
5994	0	83
6736	0	0

Left	6736
Ahead	5994
Right	0
U-turn	0

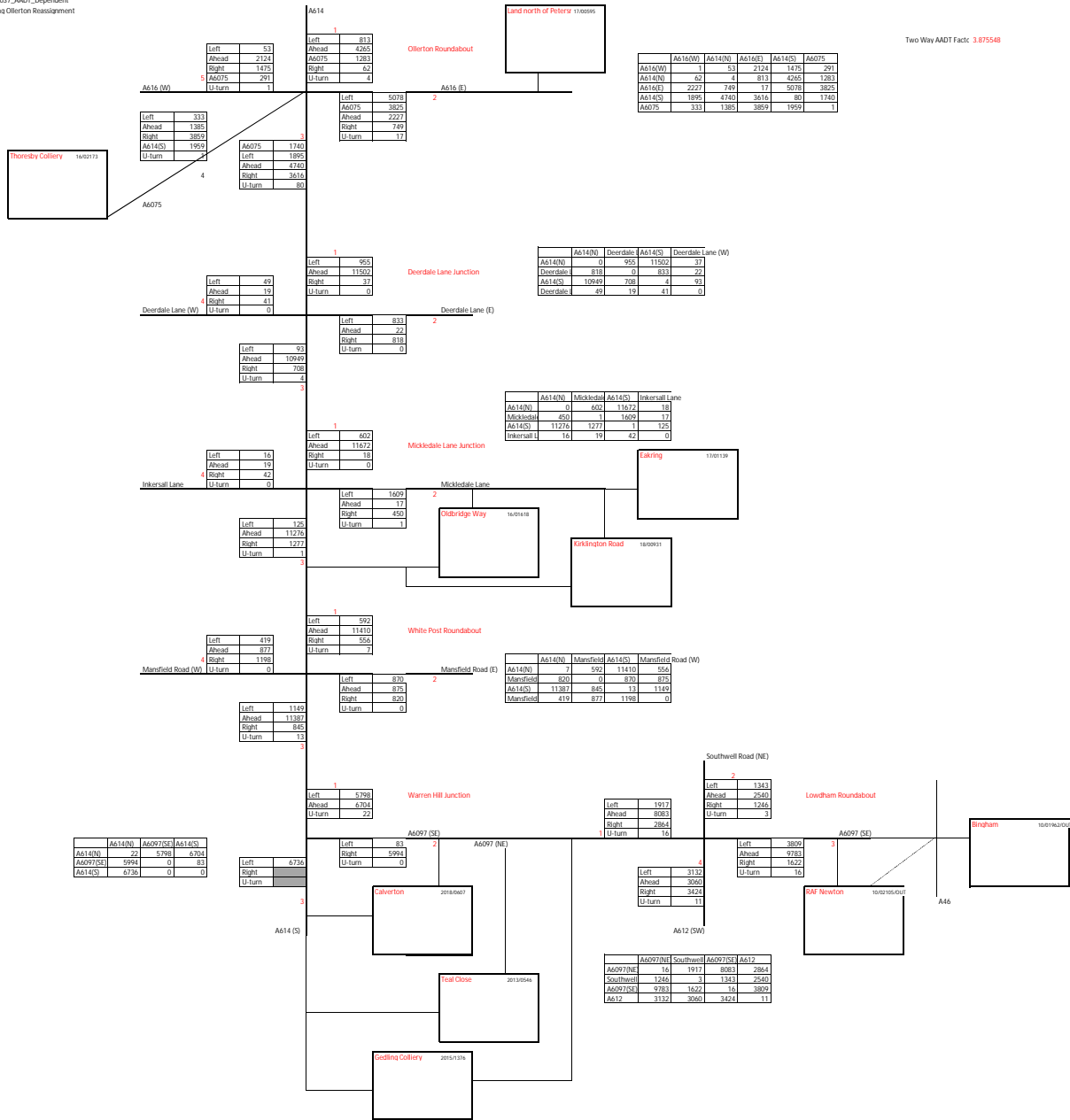
A6097(NE)	Southwell	A6097(SE)	A612
16	1917	8083	2884
1246	3	1343	2540
6783	1627	16	3809
3132	3060	3424	11

Left	3809
Ahead	9783
Right	1627
U-turn	16

Left	3132
Ahead	3060
Right	3424
U-turn	11

Left	3809
Ahead	9783
Right	1627
U-turn	16



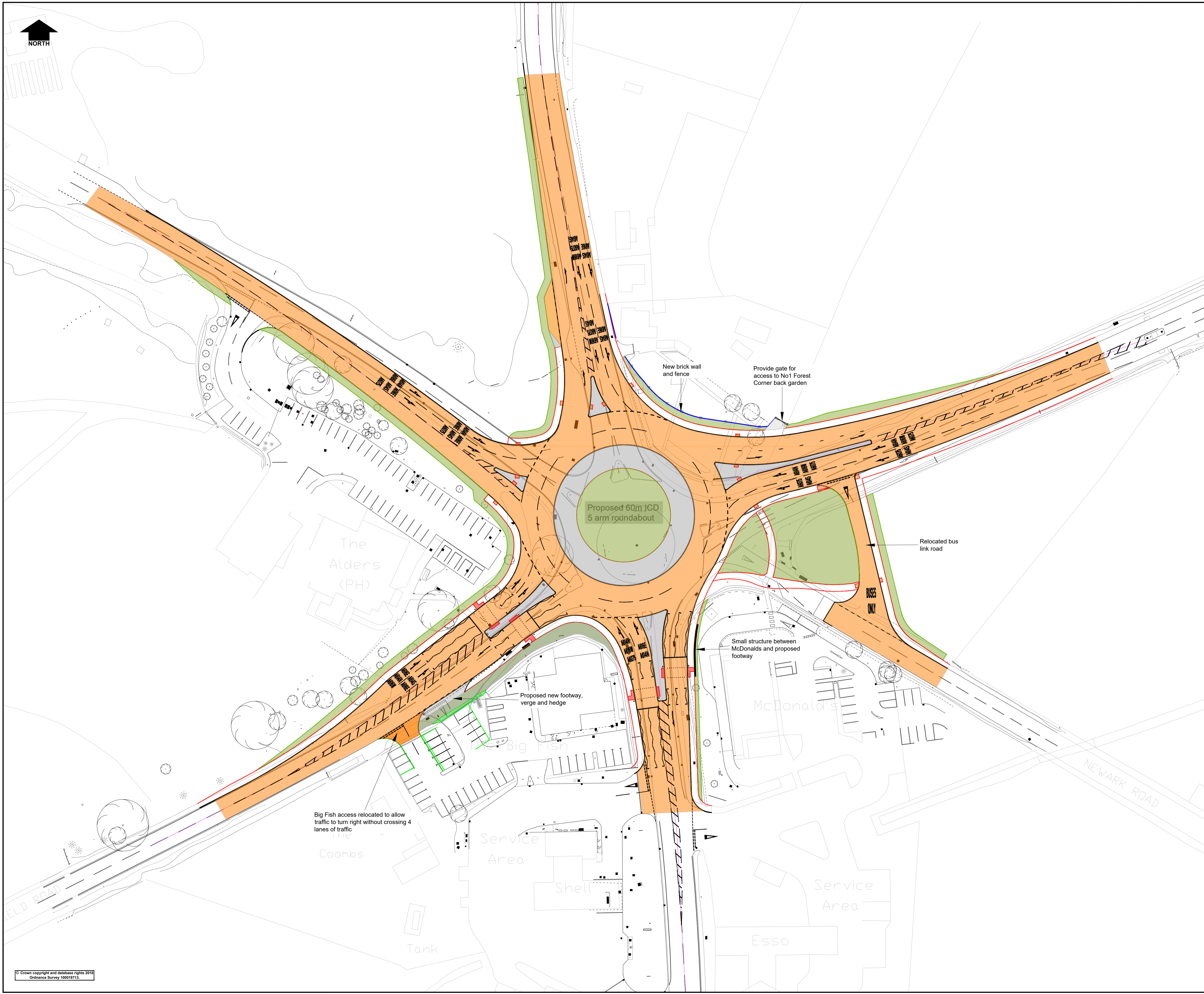


		Total	2023
Junction	Entry/Exit (0/1)	Lane	AADT
Kirkhill	0	A6097 NB	10665
	0	Kirk Hill	1782
	0	A6097 SB	9764
	0	Newton Lane	1535
	1	A6097 NB	11476
	1	Kirk Hill	1320
	1	A6097 SB	9804
	1	Newton Lane	1146

		Total	2037
Junction	Entry/Exit (0/1)	Lane	AADT
Kirkhill	0	A6097 NB	12054
	0	Kirk Hill	1874
	0	A6097 SB	10901
	0	Newton Lane	1648
	1	A6097 NB	12513
	1	Kirk Hill	1351
	1	A6097 SB	11462
	1	Newton Lane	1153

# Appendix S – Ollerton Roundabout Scheme Drawing and ARCADY Outputs





**NOTES**

1. This drawing shows the updated revised layout of the enlarged 60m ICD roundabout improvements.
2. The lane arrangements are configured to suit the current and future traffic forecast (2033) requirements.
3. The proposed lane destination markings are provided to suit the current and future peak flow and are suggested to compliment the road signage to reduce the potential conflict associated with vehicles crossing over lanes.
4. The layouts are subject to further road safety audits which will be commissioned following the detailed design stage.
5. The revised layout has been produced using updated topographical survey information obtained June 2018.
6. The precise extents of private land are subject to change which may be required as a result of the the detailed design process. The extents of embankments/ earth slopes are shown for indicative purposes and are based on the assumption that adjoining land does not significantly fluctuate in level. Where private land interfaces are restricted in respect of widths available retaining features may be required at these locations. Further verification for the embankment interface will be determined once updated private land topographical survey information and detailed design information is available.
7. A preliminary analysis has been undertaken to verify vertical design requirements, this has determined that the proposals could meet this design criteria if the speed limits on the approaches were altered to 30mph. Further verification in to the affect of the vertical design on to adjoining land is to be determined during the detailed design process.
8. Refer to feasibility report produced August 2018 by Via EM Ltd. for further information on the proposals and the departures from standards required.

**KEY**

- Proposed Carriageway Areas
- Proposed Footways/Hardstanding Areas
- Proposed Embankment/Verges
- Proposed Hedges

Rev.	Description	Drawn	Ch'kd	Auth	Date
Project <b>A614/A6097 CORRIDOR IMPROVEMENTS OLLERTON ROUNDABOUT</b>					
Status <b>FOR INFO</b>		Project No. <b>HW20949</b>			
Drawing Title <b>GENERAL ARRANGEMENT</b>					
Scale <b>1:500 @A1</b>	Drawn <b>AP</b>	Date <b>20.02.2019</b>		Drawn <b>AP</b>	Date <b>20.02.2019</b>
Drawing No. <b>HW 20949/GEN/O001/003</b>	Auth <b>JJP</b>	Tracked <b>AP</b>	Rev. <b>0</b>		

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Bilthorpe Depot, Bilthorpe Business Park, Bilthorpe,  
Nottinghamshire, NG22 8ST



# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.1.7462  
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** V4.1\_Ollerton Rdbt existing 2037.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\1-Ollerton

**Report generation date:** 07/12/2020 09:44:53

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2037, AM
- »2037, PM
- »2037, IP
- »2037, OP
- »2037 final (incl rats), AM
- »2037 final (incl rats), PM
- »2037 final (incl rats), IP
- »2037 final (incl rats), OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP
- »2037LG, AM
- »2037LG, PM
- »2037LG, IP
- »2037LG, OP
- »2023HG, AM
- »2023HG, PM
- »2023HG, IP
- »2023HG, OP
- »2037HG, AM
- »2037HG, PM
- »2037HG, IP
- »2037HG, OP

### Summary of junction performance

	AM							PM							IP							OP						
	S	Q	9	D	R	L	J	J	N	S	Q	9	D	R	L	J	J	N	S	Q	9	D	R	L	J	J	N	
	et	ue	%	el	FC	OS	un	un	et	et	ue	%	el	FC	OS	un	un	et	et	ue	%	el	FC	OS	un	un	et	
	ID	e	Q	a			n	n	w	ID	e	Q	a			n	n	w	ID	e	Q	a			n	n	w	

		e (PCU)	ue (PCU)	(s)	ion Delay(s)	ion LOS	k Residual Capacity		e (PCU)	ue (PCU)	(s)	ion Delay(s)	ion LOS	k Residual Capacity		e (PCU)	ue (PCU)	y (s)	ion Delay(s)	ion LOS	k Residual Capacity															
<b>2023</b>																																				
Arm 1	D 1	1.2	1.5	4.74	0.54	A	- 16% [Arm 2]	D 2	3.2	1.09	9.36	0.77	A	- 16% [Arm 2]	D 3	0.8	2.3	3.65	0.45	A	8% [Arm 2]	D 4	0.0	0.5	1.74	0.04	A	2.60	A	900%	[]					
Arm 2		6.75	1.21	2.13	1.13	F			6.92	1.16	2.69	1.17	F			3.9	2.0	1.95	0.81	C			0.1	0.5	3.19	0.06	A									
Arm 3		2.5	1.1	1.72	0.72	C			1.6	3.8	1.23	0.62	B			7.31	9	0.43	A	0.8			3.2	7.47	0.43	A	0.0					0.5	2.79	0.03	A	
Arm 4		1.5	4.8	1.35	1.02	F			1.9	8.4	2.07	0.67	C			0.9	3.4	1.24	0.47	B			0.9	3.8	1.24	0.47	B					0.0	0.5	3.85	0.03	A
Arm 5		1.3	2.5	8.00	0.56	A			1.1	2.5	6.51	0.52	A			0.6	2.8	4.85	0.37	A			0.6	2.8	4.85	0.37	A					0.0	0.5	2.24	0.03	A
<b>2037</b>																																				
Arm 1	D 5	1.3	1.5	5.04	0.57	A	- 18% [Arm 2]	D 6	3.4	1.25	9.79	0.78	A	- 18% [Arm 2]	D 7	0.8	2.1	3.74	0.46	A	6% [Arm 2]	D 8	0.0	0.5	1.75	0.04	A	2.60	A	900%	[]					
Arm 2		8.9	1.4	2.93	1.17	F			8.0	1.28	3.04	1.20	F			4.5	2.3	2.21	0.83	C			0.1	0.5	3.20	0.06	A									
Arm 3		2.6	1.1	1.80	0.73	C			1.6	3.7	1.24	0.62	B			8.35	2	0.44	A	0.7			3.0	7.44	0.44	A	0.0					0.5	2.79	0.03	A	
Arm 4		1.8	5.1	1.53	1.04	F			2.0	9.3	2.16	0.68	C			0.9	4.0	1.30	0.49	B			0.9	4.0	1.30	0.49	B					0.0	0.5	3.85	0.03	A
Arm 5		1.3	2.4	8.29	0.58	A			1.1	2.6	6.68	0.53	A			0.6	2.9	4.99	0.38	A			0.6	2.9	4.99	0.38	A					0.0	0.5	2.24	0.03	A
<b>2037 final (incl rats)</b>																																				
Arm 1	D 9	2.1	3.0	7.75	0.66	A	- 32% [Arm 2]	D 10	1.3	6.9	3.59	0.94	E	- 35% [Arm 2]	D 11	1.1	1.5	4.48	0.52	A	-9% [Arm 2]	D 12	0.0	0.5	1.76	0.04	A	2.65	A	862%	[Arm 2]					
Arm 2		2.7	6.6	1.01	1.48	F			3.4	9.9	1.49	1.04	F			2.5	7.7	9.82	1.02	F			0.1	0.5	3.24	0.07	A									



Ar m 3	3 9 4	9 1 4	1 6 0 5 4	1 0 7	F			5 6	2 9 0	2 9 3	0 8 5	D			1 8	4 5	1 2 4 6	0 6 5	B			0 0	0 5	2 8 3	0 0 4	A		
Ar m 4	7 0 0	1 1 8	7 0 7 3 9	1 3 2	F			4 4	2 3 8	4 4 6 5	0 8 2	E			1 5	6 5	2 0 0 0	0 6 1	C			0 0	0 5	3 8 9	0 0 3	A		
Ar m 5	2 3	7 6	1 3 2 1	0 6 8	B			2 0	4 7	1 3 2	0 6 6	B			0 8	3 1	6 1 8	0 4 5	A			0 0	0 5	2 2 6	0 0 3	A		

2023LG

Ar m 1	1 0	1 5	4 3 6	0 5 1	A			2 4	4 1	7 4 2	0 7 1	A			0 7	2 7	3 4 3	0 4 2	A			0 0	0 5	1 7 4	0 0 3	A				
Ar m 2	3 8 0	9 2 0	1 2 9 6 7	1 0 5	F			3 5	8 3 8	1 4 8 2 6	1 0 6	F			2 9	1 3 3	1 5 1 5	0 7 5	C			0 1	0 5	3 1 8	0 0 6	A				
Ar m 3	D 1 3	2 1	7 5	1 5 7	0 6 8	C	5 3.8 2	D 1 4	1 4	3 8	1 3 4	0 5 8	B	4 3.0 7	D 1 5	0 7	3 0	6 8 0	0 4 0	A	8.2 1	D 1 6	0 0	0 5	2 7 8	0 0 3	A	2.5 9	A	9 0 0 %
Ar m 4	8 5	3 8 1	8 3 4 2	0 9 4	F			1 6	6 1	1 8 1 7	0 6 2	C			0 7	3 4	1 1 0 5	0 4 3	B			0 0	0 5	3 8 4	0 0 3	A				
Ar m 5	1 1	2 8	7 2 6	0 5 2	A			0 9	2 6	5 9 1	0 4 8	A			0 5	2 4	4 5 5	0 3 4	A			0 0	0 5	2 2 3	0 0 2	A				

2037LG

Ar m 1	1 0	1 6	4 2 5	0 5 0	A			2 1	3 3	6 5 6	0 6 8	A			0 7	2 8	3 3 2	0 4 0	A			0 0	0 5	1 7 4	0 0 3	A				
Ar m 2	2 9 6	8 3 9	1 0 5 3 1	1 0 3	F			2 2	7 1 8	1 0 1 4 4	1 0 2	F			2 6	1 0 5	1 3 6 0	0 7 3	B			0 1	0 5	3 1 8	0 0 6	A				
Ar m 3	D 1 7	1 8	5 6	1 4 1 9	0 6 5	B	4 3.4 3	D 1 8	1 2	3 8	1 0 6 9	0 5 6	B	3 1.4 3	D 1 9	0 6	2 8	6 4 7	0 3 8	A	7.6 0	D 2 0	0 0	0 5	2 7 8	0 0 2	A	2.5 9	A	9 0 0 %
Ar m 4	5 8	2 9 9	5 9 5	0 8 8	F			1 4	5 5	1 6 7 9	0 6 0	C			0 7	3 1	1 0 3 0	0 4 0	B			0 0	0 5	3 8 3	0 0 2	A				
Ar m 5	1 0	2 8	6 8 3	0 5 0	A			0 9	2 7	5 6 4	0 4 6	A			0 5	2 1	4 3 8	0 3 3	A			0 0	0 5	2 2 3	0 0 2	A				

2023HG

Ar m 1	D 2 1	1 4	1 6	5 1 9	0 5 8	A	1 3 8.8 7	D 2 2	4 6	2 1 7	1 2 6 8	0 8 3	B	1 2 0.4 5	D 2 3	0 9	1 8	3 8 9	0 4 8	A	1 2.3 5	D 2 4	0 0	0 5	1 7 5	0 0 4	A	2.6 1	A	9 0 0 %
Ar m 2	1 0 2	5 3 6	3 5 6 7 5	1 2 0	F			1 0	5 8 2	4 5 4 6 0	1 2 8	F			5 6	2 9 3	2 6 9 2	0 8 6	D			0 1	0 5	3 2 1	0 0 6	A				

Arm 3	3 0	1 4 6	2 0 1 3	0 7 6	C						1 8	5 4	1 3 4 5	0 6 5	B						0 9	3 4	8 2 2	0 4 7	A							0 0	0 5	2 8 0	0 0 3	A
Arm 4	2 6 4	6 0 3	2 1 0 8 4	1 1 0	F						2 4	1 1 6	2 3 9 9	0 7 1	C						1 0	4 3	1 4 2 0	0 5 1	B							0 0	0 5	3 8 6	0 0 3	A
Arm 5	1 5	2 4	8 7 7	0 6 0	A						1 3	1 9	7 2 3	0 5 6	A						0 7	2 9	5 2 0	0 4 0	A							0 0	0 5	2 2 5	0 0 3	A
2037HG																																				
Arm 1	2 6	6 7	8 8 6	0 7 3	A						5 9 9	1 2 7 6	1 2 5 9 9	1 0 7	F						1 3	1 5	5 1 3	0 5 7	A							0 0	0 5	1 7 7	0 0 4	A
Arm 2	3 2 3 6	3 2 3 6	1 1 9 6 2 1	1 5 6	F						4 2 1 4	2 0 0 0	1 9 1 7 9 3	1 8 5	F						5 1 2	1 0 2 5	1 7 9 7 1	1 1 0	F							0 1	0 5	3 2 7	0 0 8	A
Arm 3	D 2 5	6 1 3	1 1 1 8	2 6 2 9	1 1 3	F	5 3 0 1 4	F	- 3 4 %	[A r m 2]	D 2 6	8 8	4 6 8	4 4 2 3	0 9 2	E	5 4 2 3 4	F	- 3 7 %	[A r m 2]	D 2 7	2 3	8 4	1 4 5 3	0 7 0	B	5 8 9 9	F	- 1 4 %	[A r m 2]	D 2 8	0 0	0 5	2 8 5	0 0 4	A
Arm 4	1 0 1 8	2 0 0 0	1 1 3 2 6 6 3	1 4 2	F						8 9	4 0 5	8 0 5 5	0 9 4	F						2 0	9 2	2 5 0 7	0 6 8	D							0 0	0 5	3 9 2	0 0 3	A
Arm 5	2 6	1 0 5	1 3 8	0 7 3	B						2 9	1 1 7	1 4 3 5	0 7 5	B						1 0	2 8	6 9 0	0 5 0	A							0 0	0 5	2 2 7	0 0 3	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

## File summary

### File Description

Title	Ollerton Roundabout - existing 2036+psd+tc1
Location	A614/ A616/ A6075 Ollerton
Site number	
Date	12/02/2018
Version	
Status	(new file)
Identifier	
Client	NCC
Jobnumber	
Enumerator	NCCADMIN\br18
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
----------------	-------------	---------------------	-----------------------	------------	---------------------	-------------------	---------------------

m	kph	PCU	PCU	perHour	s	-Min	perMin

The junction diagram reflects the last run of Junctions.

**Analysis Options**

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓
D9	2037 final (incl rats)	AM	ONE HOUR	07:45	09:15	15	✓
D10	2037 final (incl rats)	PM	ONE HOUR	16:45	18:15	15	✓
D11	2037 final (incl rats)	IP	ONE HOUR	12:45	14:15	15	✓
D12	2037 final (incl rats)	OP	ONE HOUR	22:45	00:15	15	✓

D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

### Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

## 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	85.92	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-16	Arm 2

## Arms

### Arms

Arm	Name	Description
1	A616 Ollerton Rd	
2	A614S Old Rufford Road	

3	A6075 Mansfield Road	
4	A616 Worksop Road	
5	A614N Blyth Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.60	8.00	100.0	35.0	37.5	54.0	
2	4.00	4.20	5.0	13.0	37.5	31.0	
3	3.80	5.70	4.3	18.0	37.5	31.0	
4	3.50	4.10	4.5	7.5	37.5	51.0	
5	4.50	6.60	12.0	24.0	37.5	44.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.724	2178
2	0.543	1228
3	0.580	1378
4	0.460	1005
5	0.635	1700

*The slope and intercept shown above include any corrections and adjustments.*

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	817	100.000
2		ONE HOUR	✓	947	100.000
3		ONE HOUR	✓	475	100.000
4		ONE HOUR	✓	375	100.000
5		ONE HOUR	✓	524	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	407	198	142	70
	2	267	15	35	183	447
	3	307	53	0	8	107
	4	231	134	8	0	2
	5	74	363	84	3	0

# Vehicle Mix

## Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.54	4.74	1.2	1.5	A	750	1125
2	1.13	213.52	67.5	121.3	F	869	1303
3	0.72	17.72	2.5	11.0	C	436	654
4	1.02	135.81	15.5	48.7	F	344	516
5	0.56	8.00	1.3	2.5	A	481	721

## Main Results for each time segment

### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	615	154	493	1821	0.338	613	655	0.0	0.5	2.976	A
2	713	178	379	1022	0.697	704	728	0.0	2.2	11.030	B
3	358	89	839	891	0.401	355	243	0.0	0.7	6.684	A
4	282	71	944	570	0.495	279	251	0.0	1.0	12.183	B
5	394	99	756	1220	0.323	393	466	0.0	0.5	4.341	A

### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	590	1750	0.420	734	782	0.5	0.7	3.537	A
2	851	213	453	982	0.867	838	871	2.2	5.5	23.177	C
3	427	107	1000	798	0.535	425	291	0.7	1.1	9.613	A
4	337	84	1126	486	0.693	333	299	1.0	2.1	22.755	C
5	471	118	903	1127	0.418	470	556	0.5	0.7	5.474	A

### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	710	1664	0.541	898	908	0.7	1.2	4.690	A
2	1043	261	554	927	1.125	913	1054	5.5	37.8	98.966	F
3	523	131	1116	731	0.716	518	352	1.1	2.4	16.537	C



4	413	103	1289	411	1.004	381	345	2.1	10.2	78.858	F
5	577	144	1043	1038	0.556	575	627	0.7	1.2	7.745	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	717	1659	0.542	899	921	1.2	1.2	4.739	A
2	1043	261	556	926	1.126	924	1061	37.8	67.5	213.520	F
3	523	131	1126	725	0.722	522	353	2.4	2.5	17.715	C
4	413	103	1302	405	1.018	392	347	10.2	15.5	135.807	F
5	577	144	1061	1026	0.562	577	633	1.2	1.3	8.003	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	615	1733	0.424	736	854	1.2	0.7	3.617	A
2	851	213	456	980	0.868	966	895	67.5	38.9	200.115	F
3	427	107	1124	726	0.588	431	298	2.5	1.5	12.367	B
4	337	84	1231	438	0.769	383	325	15.5	4.0	78.499	F
5	471	118	995	1068	0.441	473	618	1.3	0.8	6.070	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	615	154	505	1813	0.339	616	711	0.7	0.5	3.010	A
2	713	178	381	1021	0.698	858	740	38.9	2.5	42.271	E
3	358	89	989	804	0.445	360	251	1.5	0.8	8.153	A
4	282	71	1068	513	0.550	293	281	4.0	1.3	17.132	C
5	394	99	820	1179	0.335	396	541	0.8	0.5	4.602	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.51	0.51	1.00	1.40	1.45			N/A	N/A
2	2.21	0.17	1.21	4.33	5.62			N/A	N/A
3	0.66	0.55	1.00	1.40	1.45			N/A	N/A
4	0.95	0.29	1.00	1.41	1.41			N/A	N/A
5	0.47	0.00	0.00	0.47	0.47			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.72	0.08	0.79	1.40	1.48			N/A	N/A
2	5.49	0.10	1.95	14.39	20.69			N/A	N/A
3	1.13	0.08	0.92	2.01	2.80			N/A	N/A
4	2.09	0.07	1.05	5.15	7.51			N/A	N/A
5	0.71	0.09	0.82	1.39	1.46			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.16	0.03	0.26	1.16	1.16			N/A	N/A

2	37.83	12.00	34.09	63.32	73.82			N/A	N/A
3	2.37	0.03	0.30	2.63	11.01			N/A	N/A
4	10.18	0.45	6.40	23.34	30.73			N/A	N/A
5	1.23	0.03	0.26	1.23	1.23			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.18	0.03	0.27	1.18	1.45			N/A	N/A
2	67.51	27.09	62.85	106.21	121.31			N/A	N/A
3	2.49	0.03	0.29	2.49	8.52			N/A	N/A
4	15.48	0.51	9.49	36.62	48.69			N/A	N/A
5	1.27	0.03	0.27	1.27	2.53			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.74	0.50	0.98	1.40	1.45			N/A	N/A
2	38.85	14.63	35.75	61.86	70.99			N/A	N/A
3	1.47	0.08	1.03	3.08	4.29			N/A	N/A
4	4.04	0.06	1.06	11.29	17.71			N/A	N/A
5	0.80	0.19	0.93	1.40	1.46			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.52	0.05	0.52	1.30	1.40			N/A	N/A
2	2.48	0.03	0.29	2.48	9.73			N/A	N/A
3	0.81	0.04	0.40	1.87	2.98			N/A	N/A
4	1.27	0.03	0.29	1.27	5.67			N/A	N/A
5	0.51	0.04	0.45	1.28	1.39			N/A	N/A

## 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	73.19	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-16	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1145	100.000
2		ONE HOUR	✓	781	100.000
3		ONE HOUR	✓	423	100.000
4		ONE HOUR	✓	315	100.000
5		ONE HOUR	✓	546	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	426	372	281	63
	2	154	3	56	165	403
	3	283	50	0	11	79
	4	171	132	8	0	4
	5	69	381	88	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.77	9.36	3.2	10.9	A	1051	1576
2	1.17	267.49	69.2	116.9	F	717	1075
3	0.62	12.38	1.6	3.8	B	388	582
4	0.67	20.70	1.9	8.4	C	289	434

5	0.52	6.51	1.1	2.2	A	501	752
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## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	502	1815	0.475	858	508	0.0	0.9	3.750	A
2	588	147	617	893	0.658	581	743	0.0	1.9	11.274	B
3	318	80	805	911	0.350	316	392	0.0	0.5	6.032	A
4	237	59	775	648	0.366	235	347	0.0	0.6	8.665	A
5	411	103	600	1319	0.312	409	410	0.0	0.4	3.949	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	601	1743	0.591	1027	607	0.9	1.4	5.015	A
2	702	176	738	827	0.849	690	890	1.9	4.8	24.486	C
3	380	95	959	821	0.463	379	469	0.5	0.8	8.113	A
4	283	71	924	579	0.489	282	414	0.6	0.9	12.040	B
5	491	123	718	1244	0.395	490	488	0.4	0.6	4.770	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	734	1647	0.766	1254	719	1.4	3.1	9.011	A
2	860	215	901	738	1.165	728	1086	4.8	37.8	120.474	F
3	466	116	1064	761	0.612	463	565	0.8	1.5	11.983	B
4	347	87	1046	523	0.663	343	481	0.9	1.9	19.599	C
5	601	150	853	1158	0.519	599	536	0.6	1.1	6.422	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	737	1644	0.767	1260	724	3.1	3.2	9.359	A
2	860	215	906	736	1.168	734	1091	37.8	69.2	267.488	F
3	466	116	1073	756	0.616	466	568	1.5	1.6	12.382	B
4	347	87	1054	520	0.667	346	484	1.9	1.9	20.700	C
5	601	150	860	1154	0.521	601	541	1.1	1.1	6.509	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	606	1739	0.592	1036	636	3.2	1.5	5.172	A
2	702	176	745	824	0.852	812	897	69.2	41.7	246.597	F
3	380	95	1075	755	0.504	382	482	1.6	1.0	9.729	A
4	283	71	1015	537	0.527	286	442	1.9	1.1	14.513	B
5	491	123	750	1224	0.401	492	552	1.1	0.7	4.934	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	507	1811	0.476	864	545	1.5	0.9	3.813	A
2	588	147	621	891	0.660	747	750	41.7	2.1	53.693	F
3	318	80	961	821	0.388	320	407	1.0	0.6	7.214	A
4	237	59	898	592	0.401	239	383	1.1	0.7	10.267	B
5	411	103	640	1293	0.318	412	496	0.7	0.5	4.087	A

## Queue Variation Results for each time segment

### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.90	0.55	1.00	1.40	1.45			N/A	N/A
2	1.86	0.11	1.34	3.81	5.06			N/A	N/A
3	0.53	0.53	1.00	1.40	1.45			N/A	N/A
4	0.57	0.55	1.00	1.40	1.45			N/A	N/A
5	0.45	0.00	0.00	0.45	0.45			N/A	N/A

### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.42	0.05	0.48	3.61	5.62			N/A	N/A
2	4.78	0.09	1.45	12.74	18.65			N/A	N/A
3	0.85	0.10	0.88	1.49	1.50			N/A	N/A
4	0.93	0.11	0.93	1.37	1.75			N/A	N/A
5	0.65	0.09	0.82	1.37	1.43			N/A	N/A

### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.14	0.03	0.29	3.14	10.95			N/A	N/A
2	37.82	13.76	34.65	60.81	70.01			N/A	N/A
3	1.53	0.03	0.27	1.53	3.19			N/A	N/A
4	1.85	0.03	0.30	1.85	8.38			N/A	N/A
5	1.06	0.03	0.26	1.06	1.06			N/A	N/A

### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.21	0.03	0.27	3.21	3.89			N/A	N/A
2	69.18	31.75	65.37	103.84	116.91			N/A	N/A
3	1.57	0.03	0.28	1.57	3.79			N/A	N/A
4	1.93	0.03	0.29	1.93	7.46			N/A	N/A
5	1.08	0.03	0.27	1.08	2.17			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.47	0.06	0.90	3.31	4.71			N/A	N/A
2	41.73	18.37	39.11	63.18	71.42			N/A	N/A
3	1.04	0.11	0.99	1.63	1.93			N/A	N/A
4	1.15	0.07	0.87	2.27	3.05			N/A	N/A
5	0.68	0.18	0.92	1.38	1.44			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.92	0.04	0.40	2.18	3.62			N/A	N/A
2	2.09	0.03	0.28	2.09	5.89			N/A	N/A
3	0.64	0.05	0.48	1.46	1.50			N/A	N/A
4	0.68	0.04	0.40	1.47	2.23			N/A	N/A
5	0.47	0.04	0.40	1.24	1.37			N/A	N/A

## 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	9.82	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	725	100.000
2		ONE HOUR	✓	682	100.000
3		ONE HOUR	✓	334	100.000
4		ONE HOUR	✓	232	100.000
5		ONE HOUR	✓	399	100.000

## Origin-Destination Data



## Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	302	240	130	52
	2	247	2	42	107	284
	3	216	51	0	12	55
	4	125	89	11	0	7
	5	58	281	55	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.45	3.65	0.8	2.3	A	665	998
2	0.81	19.54	3.9	20.2	C	626	939
3	0.43	7.47	0.8	3.2	A	306	460
4	0.47	12.43	0.9	3.8	B	213	319
5	0.37	4.85	0.6	2.8	A	366	549

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	370	1910	0.286	544	484	0.0	0.4	2.634	A
2	513	128	371	1027	0.500	510	544	0.0	1.0	6.909	A
3	251	63	619	1019	0.247	250	261	0.0	0.3	4.677	A
4	175	44	679	692	0.252	173	190	0.0	0.3	6.921	A
5	300	75	555	1348	0.223	299	298	0.0	0.3	3.431	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	652	163	443	1857	0.351	651	580	0.4	0.5	2.984	A
2	613	153	444	987	0.621	611	651	1.0	1.6	9.500	A
3	300	75	742	948	0.317	300	312	0.3	0.5	5.552	A
4	209	52	814	630	0.331	208	228	0.3	0.5	8.515	A
5	359	90	665	1278	0.281	358	357	0.3	0.4	3.914	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	542	1785	0.447	797	708	0.5	0.8	3.640	A
2	751	188	543	933	0.805	742	796	1.6	3.7	18.100	C
3	368	92	903	854	0.431	367	382	0.5	0.7	7.368	A
4	255	64	992	548	0.466	254	278	0.5	0.9	12.177	B
5	439	110	811	1185	0.371	439	434	0.4	0.6	4.820	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	544	1784	0.447	798	712	0.8	0.8	3.650	A
2	751	188	544	933	0.805	750	798	3.7	3.9	19.539	C
3	368	92	911	850	0.433	368	383	0.7	0.8	7.471	A
4	255	64	999	545	0.469	255	280	0.9	0.9	12.430	B
5	439	110	817	1181	0.372	439	438	0.6	0.6	4.850	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	163	446	1855	0.351	653	587	0.8	0.5	2.998	A
2	613	153	445	986	0.622	622	653	3.9	1.7	10.111	B
3	300	75	753	941	0.319	301	314	0.8	0.5	5.637	A
4	209	52	824	625	0.334	210	230	0.9	0.5	8.700	A
5	359	90	673	1273	0.282	359	362	0.6	0.4	3.946	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	373	1908	0.286	546	489	0.5	0.4	2.646	A
2	513	128	372	1026	0.501	516	547	1.7	1.0	7.099	A
3	251	63	626	1015	0.248	252	262	0.5	0.3	4.723	A
4	175	44	686	689	0.254	175	192	0.5	0.3	7.019	A
5	300	75	561	1344	0.224	301	301	0.4	0.3	3.454	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2	0.99	0.55	1.00	1.40	1.45			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A
5	0.29	0.00	0.00	0.29	0.29			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.06	0.69	1.34	1.42			N/A	N/A
2	1.60	0.06	0.84	3.80	5.55			N/A	N/A
3	0.46	0.00	0.00	0.46	0.46			N/A	N/A
4	0.49	0.00	0.00	0.49	0.49			N/A	N/A
5	0.39	0.00	0.00	0.39	0.39			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.03	0.25	0.80	0.80			N/A	N/A
2	3.75	0.03	0.34	7.66	20.17			N/A	N/A
3	0.75	0.03	0.26	0.75	0.75			N/A	N/A
4	0.85	0.03	0.26	0.85	0.85			N/A	N/A
5	0.58	0.03	0.25	0.58	0.58			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.81	0.03	0.28	0.81	2.29			N/A	N/A
2	3.92	0.03	0.30	3.92	16.01			N/A	N/A
3	0.76	0.03	0.29	1.12	3.19			N/A	N/A
4	0.87	0.03	0.29	1.27	3.77			N/A	N/A
5	0.59	0.03	0.30	1.37	2.77			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2	1.69	0.05	0.47	4.45	7.10			N/A	N/A
3	0.47	0.00	0.00	0.47	0.47			N/A	N/A
4	0.51	0.05	0.48	1.29	1.40			N/A	N/A
5	0.39	0.00	0.00	0.39	0.39			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2	1.02	0.03	0.34	2.44	4.87			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A
4	0.34	0.03	0.29	0.69	1.10			N/A	N/A
5	0.29	0.00	0.00	0.29	0.29			N/A	N/A

# 2023, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.60	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	71	100.000
2		ONE HOUR	✓	66	100.000
3		ONE HOUR	✓	32	100.000
4		ONE HOUR	✓	23	100.000
5		ONE HOUR	✓	39	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	30	23	13	5
	2	24	0	4	10	28
	3	21	5	0	1	5
	4	12	9	1	0	1
	5	6	27	5	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.74	0.0	0.5	A	65	98
2	0.06	3.19	0.1	0.5	A	61	91
3	0.03	2.79	0.0	0.5	A	29	44
4	0.03	3.85	0.0	0.5	A	21	32
5	0.03	2.24	0.0	0.5	A	36	54

## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36	2152	0.025	53	47	0.0	0.0	1.714	A
2	50	12	36	1208	0.041	50	53	0.0	0.0	3.106	A
3	24	6	61	1342	0.018	24	25	0.0	0.0	2.730	A
4	17	4	66	974	0.018	17	19	0.0	0.0	3.761	A
5	29	7	54	1665	0.018	29	29	0.0	0.0	2.199	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43	2147	0.030	64	57	0.0	0.0	1.727	A
2	59	15	43	1205	0.049	59	64	0.0	0.1	3.142	A
3	29	7	73	1335	0.022	29	30	0.0	0.0	2.754	A
4	21	5	79	968	0.021	21	22	0.0	0.0	3.798	A
5	35	9	65	1659	0.021	35	35	0.0	0.0	2.216	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53	2140	0.037	78	69	0.0	0.0	1.745	A
2	73	18	53	1199	0.061	73	78	0.1	0.1	3.194	A
3	35	9	89	1326	0.027	35	36	0.0	0.0	2.788	A
4	25	6	97	960	0.026	25	28	0.0	0.0	3.851	A
5	43	11	79	1649	0.026	43	43	0.0	0.0	2.240	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53	2140	0.037	78	69	0.0	0.0	1.745	A
2	73	18	53	1199	0.061	73	78	0.1	0.1	3.194	A
3	35	9	89	1326	0.027	35	36	0.0	0.0	2.788	A
4	25	6	97	960	0.026	25	28	0.0	0.0	3.851	A
5	43	11	79	1649	0.026	43	43	0.0	0.0	2.240	A

**23:45 - 00:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43	2147	0.030	64	57	0.0	0.0	1.727	A
2	59	15	43	1205	0.049	59	64	0.1	0.1	3.145	A
3	29	7	73	1335	0.022	29	30	0.0	0.0	2.757	A
4	21	5	79	968	0.021	21	22	0.0	0.0	3.801	A
5	35	9	65	1659	0.021	35	35	0.0	0.0	2.217	A

**00:00 - 00:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36	2152	0.025	53	47	0.0	0.0	1.714	A
2	50	12	36	1208	0.041	50	53	0.1	0.0	3.108	A
3	24	6	61	1342	0.018	24	25	0.0	0.0	2.730	A
4	17	4	66	974	0.018	17	19	0.0	0.0	3.761	A
5	29	7	54	1665	0.018	29	29	0.0	0.0	2.201	A

**Queue Variation Results for each time segment**

**22:45 - 23:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.06	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A



### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

## 2037, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	112.92	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-18	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
-----	------------	--------------	--------------	-------------------------	--------------------

1		ONE HOUR	✓	848	100.000
2		ONE HOUR	✓	981	100.000
3		ONE HOUR	✓	478	100.000
4		ONE HOUR	✓	381	100.000
5		ONE HOUR	✓	535	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	428	203	145	72
	2	278	16	36	189	462
	3	309	54	0	8	107
	4	233	138	8	0	2
	5	75	373	84	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.57	5.04	1.3	1.5	A	778	1167
2	1.17	293.60	89.1	143.4	F	900	1350
3	0.73	18.08	2.6	11.7	C	439	658
4	1.04	153.72	18.0	51.8	F	350	524
5	0.58	8.29	1.3	2.4	A	491	736

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	160	505	1812	0.352	636	666	0.0	0.5	3.056	A

2	739	185	386	1018	0.725	728	755	0.0	2.5	12.043	B
3	360	90	867	875	0.411	357	248	0.0	0.7	6.914	A
4	287	72	967	560	0.512	283	257	0.0	1.0	12.816	B
5	403	101	771	1210	0.333	401	479	0.0	0.5	4.436	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	762	191	604	1740	0.438	761	795	0.5	0.8	3.674	A
2	882	220	462	977	0.903	864	903	2.5	7.0	28.125	D
3	430	107	1030	781	0.550	428	296	0.7	1.2	10.139	B
4	343	86	1151	475	0.721	337	306	1.0	2.4	25.193	D
5	481	120	919	1116	0.431	480	569	0.5	0.7	5.647	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	934	233	725	1653	0.565	932	912	0.8	1.3	4.977	A
2	1080	270	565	921	1.172	913	1092	7.0	48.9	123.272	F
3	526	132	1121	728	0.723	521	357	1.2	2.4	17.015	C
4	419	105	1295	409	1.026	383	347	2.4	11.6	87.090	F
5	589	147	1050	1033	0.570	587	628	0.7	1.3	8.025	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	934	233	732	1648	0.567	934	924	1.3	1.3	5.038	A
2	1080	270	566	920	1.174	919	1099	48.9	89.1	276.138	F
3	526	132	1128	724	0.727	526	358	2.4	2.6	18.078	C
4	419	105	1305	404	1.038	394	349	11.6	18.0	153.715	F
5	589	147	1066	1023	0.576	589	632	1.3	1.3	8.291	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	762	191	632	1720	0.443	764	864	1.3	0.8	3.774	A
2	882	220	465	975	0.904	964	931	89.1	68.5	293.604	F
3	430	107	1127	724	0.593	434	302	2.6	1.5	12.580	B
4	343	86	1235	436	0.785	396	326	18.0	4.7	98.166	F
5	481	120	1012	1057	0.455	483	618	1.3	0.8	6.294	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	160	519	1802	0.354	639	756	0.8	0.6	3.100	A
2	739	185	389	1017	0.726	997	770	68.5	3.9	134.648	F
3	360	90	1126	725	0.497	362	259	1.5	1.0	9.977	A
4	287	72	1178	462	0.620	299	310	4.7	1.7	23.370	C
5	403	101	871	1147	0.351	404	606	0.8	0.5	4.854	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2	2.51	0.13	1.24	5.42	7.22			N/A	N/A
3	0.69	0.55	1.00	1.40	1.45			N/A	N/A
4	1.02	0.19	1.02	1.41	1.74			N/A	N/A
5	0.50	0.00	0.00	0.50	0.50			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.77	0.08	0.79	1.41	1.41			N/A	N/A
2	7.03	0.16	3.27	17.70	24.60			N/A	N/A
3	1.20	0.08	0.95	2.26	2.98			N/A	N/A
4	2.36	0.07	1.16	5.86	8.51			N/A	N/A
5	0.75	0.09	0.83	1.41	1.48			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.28	0.03	0.26	1.28	1.28			N/A	N/A
2	48.89	20.37	45.61	75.63	85.99			N/A	N/A
3	2.45	0.03	0.31	3.00	11.70			N/A	N/A
4	11.59	0.83	7.99	25.24	32.50			N/A	N/A
5	1.30	0.03	0.26	1.30	1.30			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.30	0.03	0.27	1.30	1.30			N/A	N/A
2	89.12	45.46	85.25	128.81	143.36			N/A	N/A
3	2.56	0.03	0.28	2.56	8.53			N/A	N/A
4	18.05	1.17	12.50	40.07	51.76			N/A	N/A
5	1.34	0.03	0.27	1.34	2.44			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.40	0.97	1.40	1.45			N/A	N/A
2	68.49	36.94	65.78	96.54	106.72			N/A	N/A
3	1.51	0.06	0.89	3.46	4.91			N/A	N/A
4	4.68	0.06	0.93	13.31	21.55			N/A	N/A
5	0.85	0.18	0.94	1.43	1.49			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.55	0.06	0.60	1.32	1.41			N/A	N/A
2	3.86	0.03	0.32	6.47	20.04			N/A	N/A
3	1.01	0.05	0.45	2.36	3.64			N/A	N/A
4	1.73	0.03	0.31	2.93	8.87			N/A	N/A
5	0.55	0.05	0.49	1.31	1.42			N/A	N/A

**2037, PM**

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	83.52	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-18	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1154	100.000
2		ONE HOUR	✓	802	100.000
3		ONE HOUR	✓	424	100.000
4		ONE HOUR	✓	320	100.000
5		ONE HOUR	✓	553	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	436	372	280	63
	2	161	3	56	169	413
	3	286	49	0	11	78
	4	173	135	8	0	4
	5	69	389	87	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.78	9.79	3.4	12.5	A	1059	1588
2	1.20	304.84	80.1	128.4	F	736	1104
3	0.62	12.48	1.6	3.7	B	389	584
4	0.68	21.61	2.0	9.3	C	294	440
5	0.53	6.68	1.1	2.1	A	507	761

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	869	217	508	1810	0.480	865	516	0.0	0.9	3.797	A
2	604	151	615	894	0.676	596	758	0.0	2.0	11.788	B
3	319	80	820	903	0.354	317	392	0.0	0.5	6.127	A
4	241	60	788	642	0.375	239	349	0.0	0.6	8.871	A
5	416	104	610	1312	0.317	414	416	0.0	0.5	4.001	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1037	259	609	1737	0.597	1035	617	0.9	1.5	5.112	A
2	721	180	737	828	0.871	707	907	2.0	5.5	27.095	D
3	381	95	975	812	0.469	380	468	0.5	0.9	8.300	A
4	288	72	939	573	0.502	286	416	0.6	1.0	12.497	B
5	497	124	730	1236	0.402	496	495	0.5	0.7	4.859	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1271	318	743	1640	0.775	1263	727	1.5	3.3	9.388	A
2	883	221	899	740	1.194	731	1108	5.5	43.4	134.963	F
3	467	117	1068	759	0.615	464	563	0.9	1.5	12.111	B



4	352	88	1052	521	0.677	348	480	1.0	2.0	20.442	C
5	609	152	864	1152	0.529	607	536	0.7	1.1	6.591	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1271	318	747	1637	0.776	1270	732	3.3	3.4	9.789	A
2	883	221	904	737	1.198	736	1113	43.4	80.1	304.843	F
3	467	117	1074	755	0.618	467	565	1.5	1.6	12.477	B
4	352	88	1058	518	0.680	352	483	2.0	2.0	21.608	C
5	609	152	870	1147	0.531	609	540	1.1	1.1	6.684	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1037	259	614	1733	0.599	1045	644	3.4	1.5	5.286	A
2	721	180	743	824	0.875	814	916	80.1	56.8	301.167	F
3	381	95	1078	753	0.506	383	479	1.6	1.0	9.802	A
4	288	72	1020	535	0.537	291	441	2.0	1.2	14.940	B
5	497	124	760	1218	0.408	499	551	1.1	0.7	5.021	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	869	217	514	1806	0.481	871	567	1.5	0.9	3.861	A
2	604	151	620	891	0.677	821	765	56.8	2.4	105.387	F
3	319	80	1031	780	0.409	321	410	1.0	0.7	7.863	A
4	241	60	954	566	0.426	243	398	1.2	0.8	11.206	B
5	416	104	663	1279	0.326	417	533	0.7	0.5	4.182	A

## Queue Variation Results for each time segment

### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.92	0.55	1.00	1.40	1.45			N/A	N/A
2	2.00	0.10	1.33	4.35	5.89			N/A	N/A
3	0.54	0.54	1.00	1.40	1.45			N/A	N/A
4	0.59	0.55	1.00	1.40	1.45			N/A	N/A
5	0.46	0.00	0.00	0.46	0.46			N/A	N/A

### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.46	0.05	0.47	3.74	5.87			N/A	N/A
2	5.47	0.10	1.94	14.36	20.65			N/A	N/A
3	0.87	0.10	0.90	1.08	1.58			N/A	N/A
4	0.98	0.10	0.95	1.54	1.86			N/A	N/A
5	0.67	0.09	0.82	1.37	1.44			N/A	N/A

### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.29	0.03	0.29	3.29	12.46			N/A	N/A

2	43.38	17.97	40.40	67.10	76.33			N/A	N/A
3	1.55	0.03	0.27	1.55	3.43			N/A	N/A
4	1.96	0.03	0.30	2.35	9.27			N/A	N/A
5	1.11	0.03	0.26	1.11	1.11			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.38	0.03	0.27	3.38	4.78			N/A	N/A
2	80.10	41.07	76.62	115.45	128.42			N/A	N/A
3	1.59	0.03	0.28	1.59	3.67			N/A	N/A
4	2.05	0.03	0.29	2.05	7.99			N/A	N/A
5	1.12	0.03	0.27	1.12	2.08			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.51	0.06	0.86	3.52	5.00			N/A	N/A
2	56.78	29.98	54.35	80.55	89.23			N/A	N/A
3	1.05	0.10	0.98	1.69	1.98			N/A	N/A
4	1.20	0.06	0.81	2.55	3.56			N/A	N/A
5	0.70	0.18	0.92	1.38	1.44			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.93	0.04	0.39	2.28	3.83			N/A	N/A
2	2.41	0.03	0.28	2.41	7.72			N/A	N/A
3	0.70	0.05	0.56	1.05	1.64			N/A	N/A
4	0.76	0.04	0.41	1.68	2.60			N/A	N/A
5	0.49	0.04	0.43	1.26	1.38			N/A	N/A

## 2037, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	10.75	B

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	6	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	739	100.000
2		ONE HOUR	✓	701	100.000
3		ONE HOUR	✓	336	100.000
4		ONE HOUR	✓	237	100.000
5		ONE HOUR	✓	408	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	313	242	131	52
	2	256	2	43	109	291
	3	218	51	0	12	55
	4	127	92	11	0	7
	5	59	289	55	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.46	3.74	0.8	2.1	A	678	1017
2	0.83	22.15	4.5	23.3	C	643	965
3	0.44	7.70	0.8	3.3	A	308	462
4	0.49	13.08	0.9	4.0	B	217	326

5	0.38	4.99	0.6	2.9	A	374	562
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## Main Results for each time segment

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	139	378	1904	0.292	555	494	0.0	0.4	2.664	A
2	528	132	373	1025	0.515	524	560	0.0	1.0	7.116	A
3	253	63	633	1010	0.250	252	263	0.0	0.3	4.737	A
4	178	45	692	686	0.260	177	192	0.0	0.3	7.056	A
5	307	77	567	1340	0.229	306	303	0.0	0.3	3.479	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	453	1850	0.359	664	592	0.4	0.6	3.033	A
2	630	158	446	986	0.639	627	671	1.0	1.7	9.974	A
3	302	76	759	938	0.322	302	315	0.3	0.5	5.653	A
4	213	53	830	623	0.342	212	230	0.3	0.5	8.759	A
5	367	92	679	1268	0.289	366	363	0.3	0.4	3.989	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	814	203	554	1777	0.458	813	722	0.6	0.8	3.729	A
2	772	193	546	931	0.829	762	821	1.7	4.3	20.084	C
3	370	92	923	843	0.439	369	385	0.5	0.8	7.574	A
4	261	65	1010	540	0.484	259	281	0.5	0.9	12.767	B
5	449	112	828	1174	0.383	448	441	0.4	0.6	4.958	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	814	203	556	1775	0.458	814	727	0.8	0.8	3.742	A
2	772	193	547	931	0.829	771	822	4.3	4.5	22.153	C
3	370	92	932	838	0.442	370	386	0.8	0.8	7.696	A
4	261	65	1019	536	0.487	261	283	0.9	0.9	13.084	B
5	449	112	834	1170	0.384	449	445	0.6	0.6	4.992	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	456	1848	0.359	665	600	0.8	0.6	3.048	A
2	630	158	448	985	0.640	641	673	4.5	1.8	10.778	B
3	302	76	772	930	0.325	303	317	0.8	0.5	5.755	A
4	213	53	842	617	0.345	215	233	0.9	0.5	8.982	A
5	367	92	688	1263	0.290	368	369	0.6	0.4	4.025	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	139	381	1902	0.292	557	500	0.6	0.4	2.678	A
2	528	132	375	1025	0.515	531	563	1.8	1.1	7.333	A
3	253	63	641	1006	0.251	254	265	0.5	0.3	4.788	A
4	178	45	700	682	0.261	179	194	0.5	0.4	7.162	A
5	307	77	573	1336	0.230	308	306	0.4	0.3	3.503	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.41	0.00	0.00	0.41	0.41			N/A	N/A
2	1.04	0.55	1.00	1.40	1.45			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.56	0.07	0.73	1.35	1.42			N/A	N/A
2	1.72	0.06	0.83	4.22	6.23			N/A	N/A
3	0.47	0.00	0.00	0.47	0.47			N/A	N/A
4	0.51	0.51	1.00	1.40	1.45			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.84	0.03	0.25	0.84	0.84			N/A	N/A
2	4.29	0.04	0.36	10.15	23.27			N/A	N/A
3	0.77	0.03	0.26	0.77	0.77			N/A	N/A
4	0.91	0.03	0.26	0.91	0.91			N/A	N/A
5	0.61	0.03	0.25	0.61	0.61			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.84	0.03	0.27	0.84	2.08			N/A	N/A
2	4.54	0.03	0.31	4.85	20.97			N/A	N/A
3	0.78	0.03	0.29	1.09	3.25			N/A	N/A
4	0.93	0.03	0.29	1.25	3.96			N/A	N/A
5	0.62	0.03	0.29	1.31	2.87			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.56	0.55	1.00	1.40	1.45			N/A	N/A
2	1.83	0.04	0.45	4.89	8.11			N/A	N/A
3	0.49	0.00	0.00	0.49	0.49			N/A	N/A
4	0.54	0.05	0.56	1.31	1.41			N/A	N/A
5	0.41	0.00	0.00	0.41	0.41			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2	1.08	0.03	0.33	2.49	5.39			N/A	N/A
3	0.34	0.03	0.25	0.46	0.48			N/A	N/A
4	0.36	0.03	0.30	0.94	1.22			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

## 2037, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.60	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	73	100.000
2		ONE HOUR	✓	68	100.000
3		ONE HOUR	✓	32	100.000
4		ONE HOUR	✓	23	100.000
5		ONE HOUR	✓	40	100.000

## Origin-Destination Data



## Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	31	24	13	5
	2	25	0	4	11	28
	3	21	5	0	1	5
	4	12	9	1	0	1
	5	6	28	5	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To					
	1	2	3	4	5	
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.75	0.0	0.5	A	67	100
2	0.06	3.20	0.1	0.5	A	62	94
3	0.03	2.79	0.0	0.5	A	29	44
4	0.03	3.85	0.0	0.5	A	21	32
5	0.03	2.24	0.0	0.5	A	37	55

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	55	14	37	2151	0.026	55	48	0.0	0.0	1.716	A
2	51	13	37	1208	0.042	51	55	0.0	0.0	3.111	A
3	24	6	62	1341	0.018	24	26	0.0	0.0	2.732	A
4	17	4	67	974	0.018	17	20	0.0	0.0	3.762	A
5	30	8	55	1665	0.018	30	29	0.0	0.0	2.201	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	66	16	44	2146	0.031	66	58	0.0	0.0	1.729	A
2	61	15	44	1204	0.051	61	66	0.0	0.1	3.148	A
3	29	7	75	1334	0.022	29	31	0.0	0.0	2.756	A
4	21	5	80	968	0.021	21	23	0.0	0.0	3.800	A
5	36	9	66	1658	0.022	36	35	0.0	0.0	2.218	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	80	20	54	2139	0.038	80	70	0.0	0.0	1.747	A
2	75	19	54	1199	0.062	75	80	0.1	0.1	3.202	A
3	35	9	91	1325	0.027	35	37	0.0	0.0	2.791	A
4	25	6	98	959	0.026	25	29	0.0	0.0	3.853	A
5	44	11	80	1649	0.027	44	43	0.0	0.0	2.242	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	80	20	54	2139	0.038	80	70	0.0	0.0	1.747	A
2	75	19	54	1199	0.062	75	80	0.1	0.1	3.202	A
3	35	9	91	1325	0.027	35	37	0.0	0.0	2.791	A
4	25	6	98	959	0.026	25	29	0.0	0.0	3.853	A
5	44	11	80	1649	0.027	44	43	0.0	0.0	2.243	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	66	16	44	2146	0.031	66	58	0.0	0.0	1.732	A
2	61	15	44	1204	0.051	61	66	0.1	0.1	3.151	A
3	29	7	75	1334	0.022	29	31	0.0	0.0	2.759	A
4	21	5	80	968	0.021	21	23	0.0	0.0	3.800	A
5	36	9	66	1658	0.022	36	35	0.0	0.0	2.220	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	55	14	37	2151	0.026	55	48	0.0	0.0	1.719	A
2	51	13	37	1208	0.042	51	55	0.1	0.0	3.111	A
3	24	6	63	1341	0.018	24	26	0.0	0.0	2.734	A
4	17	4	67	974	0.018	17	20	0.0	0.0	3.763	A
5	30	8	55	1665	0.018	30	29	0.0	0.0	2.203	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:45 - 00:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

# 2037 final (incl rats), AM

**Data Errors and Warnings**

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	419.23	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-32	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2037 final (incl rats)	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	914	100.000
2		ONE HOUR	✓	1164	100.000
3		ONE HOUR	✓	766	100.000
4		ONE HOUR	✓	400	100.000
5		ONE HOUR	✓	577	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	451	246	145	72
	2	357	16	129	192	470
	3	378	207	0	29	152
	4	233	139	26	0	2
	5	75	379	120	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.66	7.75	2.1	3.0	A	839	1258
2	1.48	1014.81	276.5	276.5	F	1068	1602
3	1.07	160.54	39.4	91.4	F	703	1054
4	1.32	707.39	70.0	117.8	F	367	551
5	0.68	13.21	2.3	7.6	B	529	794

## Main Results for each time segment

### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	688	172	661	1699	0.405	685	767	0.0	0.7	3.895	A
2	876	219	458	979	0.895	848	888	0.0	7.1	26.203	D
3	577	144	919	845	0.682	568	387	0.0	2.3	13.868	B
4	301	75	1214	446	0.675	293	272	0.0	2.1	24.695	C
5	434	109	997	1067	0.407	431	510	0.0	0.7	6.201	A

### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	822	205	782	1611	0.510	820	876	0.7	1.1	4.994	A
2	1046	262	547	931	1.124	917	1055	7.1	39.4	106.716	F
3	689	172	1013	790	0.871	674	452	2.3	5.9	30.715	D
4	360	90	1377	371	0.970	334	310	2.1	8.5	79.070	F
5	519	130	1141	975	0.532	517	570	0.7	1.2	8.599	A

### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1006	252	907	1521	0.662	1002	923	1.1	2.1	7.583	A
2	1282	320	664	867	1.478	867	1246	39.4	143.1	388.587	F
3	843	211	1012	791	1.066	769	519	5.9	24.5	87.447	F
4	440	110	1447	339	1.300	335	334	8.5	34.7	257.967	F
5	635	159	1199	939	0.677	631	583	1.2	2.2	12.717	B

### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1006	252	913	1517	0.664	1006	928	2.1	2.1	7.752	A
2	1282	320	667	866	1.480	866	1253	143.1	247.0	790.794	F
3	843	211	1012	791	1.066	784	520	24.5	39.4	160.536	F
4	440	110	1460	333	1.324	332	335	34.7	61.8	546.385	F
5	635	159	1206	934	0.680	635	586	2.2	2.3	13.214	B

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	822	205	808	1593	0.516	825	919	2.1	1.2	5.185	A
2	1046	262	551	929	1.127	929	1083	247.0	276.5	1014.815	F
3	689	172	1025	784	0.879	762	455	39.4	21.0	147.014	F
4	360	90	1471	328	1.098	327	316	61.8	70.0	707.387	F
5	519	130	1205	935	0.555	522	593	2.3	1.4	9.679	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	688	172	718	1658	0.415	690	886	1.2	0.8	4.097	A
2	876	219	466	975	0.899	971	941	276.5	252.8	981.287	F
3	577	144	1029	781	0.739	647	408	21.0	3.4	40.456	E
4	301	75	1380	370	0.815	364	296	70.0	54.3	617.110	F
5	434	109	1167	959	0.453	436	577	1.4	0.9	7.606	A

**Queue Variation Results for each time segment**

**07:45 - 08:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.74	0.61	1.10	1.54	1.60			N/A	N/A
2	7.10	0.03	0.31	7.10	19.26			N/A	N/A
3	2.25	0.26	1.34	4.04	5.09			N/A	N/A
4	2.10	0.03	0.33	2.78	10.20			N/A	N/A
5	0.75	0.61	1.10	1.54	1.60			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.13	0.07	0.86	2.13	3.01			N/A	N/A
2	39.40	0.40	19.66	102.82	143.23			N/A	N/A
3	5.90	0.18	2.96	14.21	19.43			N/A	N/A
4	8.45	0.10	2.50	23.24	34.42			N/A	N/A
5	1.23	0.09	1.05	2.11	2.88			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.10	0.03	0.30	2.10	2.40			N/A	N/A
2	143.11	>199	>199	>199	>199			N/A	N/A
3	24.49	3.60	19.88	47.49	58.22			N/A	N/A
4	34.71	10.49	31.04	58.61	68.55			N/A	N/A
5	2.21	0.03	0.31	2.21	7.62			N/A	N/A

**08:30 - 08:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.14	0.03	0.29	2.14	2.14			N/A	N/A
2	247.04	>199	>199	>199	>199			N/A	N/A
3	39.42	6.99	32.91	75.13	91.38			N/A	N/A
4	61.82	29.09	58.50	91.73	102.96			N/A	N/A
5	2.28	0.03	0.30	2.28	4.76			N/A	N/A



### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.19	0.12	1.10	1.92	2.32			N/A	N/A
2	276.45	>199	>199	>199	>199			N/A	N/A
3	20.96	1.63	14.98	45.59	58.36			N/A	N/A
4	70.01	32.40	66.19	104.71	117.79			N/A	N/A
5	1.40	0.08	1.07	2.81	3.80			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.79	0.06	0.57	1.33	1.93			N/A	N/A
2	252.78	>199	>199	>199	>199			N/A	N/A
3	3.43	0.04	0.37	7.02	18.42			N/A	N/A
4	54.33	17.06	49.01	91.58	106.91			N/A	N/A
5	0.92	0.05	0.51	1.96	2.90			N/A	N/A

## 2037 final (incl rats), PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	422.80	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-35	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037 final (incl rats)	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1283	100.000
2		ONE HOUR	✓	1054	100.000

3		ONE HOUR	✓	641	100.000
4		ONE HOUR	✓	343	100.000
5		ONE HOUR	✓	603	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	2	495	437	285	64
	2	259	3	189	175	428
	3	339	155	0	30	117
	4	176	139	24	0	4
	5	71	400	124	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.94	35.99	13.2	69.9	E	1177	1766
2	1.74	1491.04	349.0	349.0	F	967	1451
3	0.85	29.93	5.6	29.0	D	588	882
4	0.82	44.65	4.4	23.8	E	315	472
5	0.66	11.32	2.0	4.7	B	553	830

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	966	241	637	1717	0.563	960	623	0.0	1.4	5.195	A
2	794	198	706	844	0.940	756	890	0.0	9.4	36.082	E
3	483	121	889	862	0.560	477	573	0.0	1.4	10.146	B



1	1.40	0.58	1.31	1.87	2.08			N/A	N/A
2	9.40	0.03	0.29	9.40	9.40			N/A	N/A
3	1.36	0.61	1.10	1.54	1.60			N/A	N/A
4	0.96	0.61	1.10	1.54	1.60			N/A	N/A
5	0.68	0.61	1.10	1.54	1.60			N/A	N/A

17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.61	0.05	0.50	7.19	12.07			N/A	N/A
2	55.39	>199	>199	>199	>199			N/A	N/A
3	2.39	0.09	1.38	5.60	7.90			N/A	N/A
4	1.71	0.11	1.31	3.30	4.40			N/A	N/A
5	1.04	0.09	0.95	1.75	2.14			N/A	N/A

17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	11.04	0.08	1.60	32.11	51.33			N/A	N/A
2	176.67	>199	>199	>199	>199			N/A	N/A
3	5.17	0.05	0.46	14.07	27.34			N/A	N/A
4	3.97	0.05	0.48	11.09	20.07			N/A	N/A
5	1.98	0.03	0.30	1.98	4.67			N/A	N/A

17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	13.25	0.05	0.55	37.66	69.90			N/A	N/A
2	300.16	>199	>199	>199	>199			N/A	N/A
3	5.55	0.04	0.36	9.46	28.99			N/A	N/A
4	4.39	0.04	0.38	9.66	23.81			N/A	N/A
5	2.05	0.03	0.30	2.05	4.11			N/A	N/A

17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.84	0.04	0.44	7.69	14.31			N/A	N/A
2	348.95	>199	>199	>199	>199			N/A	N/A
3	2.68	0.05	0.48	7.36	12.76			N/A	N/A
4	1.96	0.05	0.47	5.28	9.04			N/A	N/A
5	1.10	0.09	0.97	1.90	2.41			N/A	N/A

18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.45	0.03	0.33	1.82	6.88			N/A	N/A
2	338.03	>199	>199	>199	>199			N/A	N/A
3	1.61	0.04	0.38	3.92	8.22			N/A	N/A
4	1.14	0.04	0.37	2.61	5.65			N/A	N/A
5	0.71	0.05	0.48	1.25	1.93			N/A	N/A

# 2037 final (incl rats), IP

## Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	35.09	E

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-9	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037 final (incl rats)	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	795	100.000
2		ONE HOUR	✓	820	100.000
3		ONE HOUR	✓	488	100.000
4		ONE HOUR	✓	250	100.000
5		ONE HOUR	✓	437	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	334	277	131	52
	2	292	2	119	111	296
	3	254	130	0	24	80
	4	127	93	23	0	7
	5	59	293	79	5	1

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.52	4.48	1.1	1.5	A	730	1094
2	1.02	98.25	25.1	77.3	F	752	1129
3	0.65	12.46	1.8	4.5	B	448	672
4	0.61	20.00	1.5	6.5	C	229	344
5	0.45	6.18	0.8	3.1	A	401	601

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	469	1839	0.326	597	547	0.0	0.5	2.895	A
2	617	154	427	996	0.620	611	638	0.0	1.6	9.203	A
3	367	92	665	992	0.370	365	373	0.0	0.6	5.721	A
4	188	47	827	624	0.302	187	203	0.0	0.4	8.199	A
5	329	82	688	1263	0.261	328	325	0.0	0.4	3.844	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	561	1771	0.403	714	655	0.5	0.7	3.403	A
2	737	184	511	951	0.776	731	764	1.6	3.2	15.908	C
3	439	110	795	917	0.479	437	446	0.6	0.9	7.493	A
4	225	56	990	549	0.409	224	243	0.4	0.7	11.033	B
5	393	98	825	1176	0.334	392	389	0.4	0.5	4.589	A

#### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	875	219	686	1681	0.521	874	784	0.7	1.1	4.448	A
2	903	226	625	889	1.016	848	934	3.2	16.9	56.548	F
3	537	134	934	836	0.642	534	539	0.9	1.7	11.778	B
4	275	69	1177	463	0.595	272	291	0.7	1.4	18.624	C



5	481	120	990	1071	0.449	480	460	0.5	0.8	6.076	A
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### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	875	219	689	1679	0.521	875	795	1.1	1.1	4.478	A
2	903	226	626	888	1.017	870	938	16.9	25.1	98.245	F
3	537	134	953	825	0.651	537	543	1.7	1.8	12.462	B
4	275	69	1196	454	0.606	275	294	1.4	1.5	20.004	C
5	481	120	1003	1063	0.453	481	468	0.8	0.8	6.184	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	566	1768	0.404	716	692	1.1	0.7	3.430	A
2	737	184	513	949	0.776	822	769	25.1	3.9	40.482	E
3	439	110	874	871	0.504	442	461	1.8	1.0	8.448	A
4	225	56	1060	517	0.435	228	256	1.5	0.8	12.567	B
5	393	98	864	1151	0.341	394	423	0.8	0.5	4.764	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	473	1835	0.326	599	557	0.7	0.5	2.915	A
2	617	154	429	995	0.620	626	643	3.9	1.7	9.982	A
3	367	92	678	984	0.373	369	377	1.0	0.6	5.870	A
4	188	47	842	617	0.305	190	205	0.8	0.4	8.450	A
5	329	82	700	1255	0.262	330	332	0.5	0.4	3.892	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2	1.59	0.47	1.44	2.36	2.83			N/A	N/A
3	0.58	0.55	1.00	1.40	1.45			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.67	0.08	0.79	1.37	1.44			N/A	N/A
2	3.21	0.06	1.12	8.67	13.16			N/A	N/A
3	0.90	0.08	0.87	1.42	1.81			N/A	N/A
4	0.68	0.10	0.84	1.37	1.44			N/A	N/A
5	0.50	0.00	0.00	0.50	0.50			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.08	0.03	0.26	1.08	1.08			N/A	N/A
2	16.90	0.91	11.32	38.31	49.96			N/A	N/A

3	1.74	0.03	0.28	1.74	4.41			N/A	N/A
4	1.40	0.03	0.28	1.40	4.68			N/A	N/A
5	0.81	0.03	0.26	0.81	0.81			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.08	0.03	0.27	1.08	1.20			N/A	N/A
2	25.09	1.02	16.24	58.66	77.30			N/A	N/A
3	1.82	0.03	0.28	1.82	4.51			N/A	N/A
4	1.48	0.03	0.29	1.48	6.45			N/A	N/A
5	0.82	0.03	0.28	0.85	3.07			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.68	0.55	1.00	1.40	1.45			N/A	N/A
2	3.87	0.04	0.41	10.52	20.27			N/A	N/A
3	1.03	0.09	0.94	1.72	2.10			N/A	N/A
4	0.79	0.07	0.75	1.11	1.63			N/A	N/A
5	0.52	0.52	1.00	1.40	1.45			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.49	0.04	0.43	1.26	1.38			N/A	N/A
2	1.68	0.03	0.29	1.68	7.10			N/A	N/A
3	0.60	0.04	0.42	1.49	1.66			N/A	N/A
4	0.44	0.04	0.36	1.30	1.49			N/A	N/A
5	0.36	0.00	0.00	0.36	0.36			N/A	N/A

## 2037 final (incl rats), OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.65	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	862	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2037 final (incl rats)	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	76	100.000
2		ONE HOUR	✓	77	100.000
3		ONE HOUR	✓	48	100.000
4		ONE HOUR	✓	24	100.000
5		ONE HOUR	✓	44	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	31	27	13	5
	2	25	0	12	11	29
	3	25	13	0	2	8
	4	12	9	2	0	1
	5	6	29	8	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.76	0.0	0.5	A	70	105
2	0.07	3.24	0.1	0.5	A	71	106
3	0.04	2.83	0.0	0.5	A	44	66
4	0.03	3.89	0.0	0.5	A	22	33

5	0.03	2.26	0.0	0.5	A	40	61
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## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	57	14	47	2144	0.027	57	51	0.0	0.0	1.723	A
2	58	14	42	1205	0.048	58	62	0.0	0.1	3.137	A
3	36	9	63	1341	0.027	36	37	0.0	0.0	2.758	A
4	18	5	79	968	0.019	18	20	0.0	0.0	3.787	A
5	33	8	65	1659	0.020	33	32	0.0	0.0	2.214	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	68	17	56	2138	0.032	68	61	0.0	0.0	1.738	A
2	69	17	50	1201	0.058	69	74	0.1	0.1	3.181	A
3	43	11	75	1334	0.032	43	44	0.0	0.0	2.788	A
4	22	5	94	961	0.022	22	24	0.0	0.0	3.830	A
5	40	10	77	1651	0.024	40	39	0.0	0.0	2.234	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	84	21	68	2129	0.039	84	75	0.0	0.0	1.759	A
2	85	21	62	1195	0.071	85	90	0.1	0.1	3.243	A
3	53	13	92	1324	0.040	53	54	0.0	0.0	2.831	A
4	26	7	116	951	0.028	26	30	0.0	0.0	3.891	A
5	48	12	95	1640	0.030	48	47	0.0	0.0	2.261	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	84	21	68	2129	0.039	84	75	0.0	0.0	1.759	A
2	85	21	62	1195	0.071	85	90	0.1	0.1	3.243	A
3	53	13	92	1324	0.040	53	54	0.0	0.0	2.831	A
4	26	7	116	951	0.028	26	30	0.0	0.0	3.891	A
5	48	12	95	1640	0.030	48	47	0.0	0.0	2.262	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	68	17	56	2138	0.032	68	61	0.0	0.0	1.741	A
2	69	17	50	1201	0.058	69	74	0.1	0.1	3.181	A
3	43	11	76	1334	0.032	43	44	0.0	0.0	2.791	A
4	22	5	94	961	0.022	22	24	0.0	0.0	3.833	A
5	40	10	77	1651	0.024	40	39	0.0	0.0	2.235	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	57	14	47	2144	0.027	57	51	0.0	0.0	1.726	A
2	58	14	42	1205	0.048	58	62	0.1	0.1	3.137	A
3	36	9	63	1341	0.027	36	37	0.0	0.0	2.760	A
4	18	5	79	968	0.019	18	20	0.0	0.0	3.788	A
5	33	8	65	1659	0.020	33	32	0.0	0.0	2.214	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.06	0.03	0.25	0.45	0.48			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.08	0.03	0.26	0.47	0.49			N/A	N/A
3	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.08	0.00	0.00	0.08	0.08			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

## 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	53.82	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-11	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	775	100.000
2		ONE HOUR	✓	900	100.000
3		ONE HOUR	✓	453	100.000
4		ONE HOUR	✓	355	100.000
5		ONE HOUR	✓	496	100.000

## Origin-Destination Data



## Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	386	189	134	66
	2	253	15	35	173	424
	3	291	53	0	7	102
	4	218	127	8	0	2
	5	70	343	80	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.51	4.36	1.0	1.5	A	711	1067
2	1.05	129.67	38.0	92.0	F	826	1239
3	0.68	15.57	2.1	7.5	C	416	624
4	0.94	83.42	8.5	38.1	F	326	489
5	0.52	7.26	1.1	2.8	A	455	683

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	470	1837	0.318	582	621	0.0	0.5	2.863	A
2	678	169	360	1032	0.656	670	692	0.0	1.8	9.749	A
3	341	85	796	916	0.372	339	234	0.0	0.6	6.212	A
4	267	67	898	591	0.452	264	237	0.0	0.8	10.902	B
5	373	93	719	1243	0.300	372	443	0.0	0.4	4.124	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	697	174	563	1770	0.394	696	743	0.5	0.6	3.350	A
2	809	202	431	994	0.814	801	828	1.8	4.0	17.863	C
3	407	102	952	826	0.493	406	280	0.6	1.0	8.538	A
4	319	80	1074	510	0.626	316	283	0.8	1.6	18.247	C
5	446	111	861	1153	0.387	445	530	0.4	0.6	5.078	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	682	1684	0.507	852	880	0.6	1.0	4.317	A
2	991	248	527	942	1.052	913	1007	4.0	23.4	67.837	F
3	499	125	1101	740	0.674	495	339	1.0	2.0	14.464	B
4	391	98	1262	424	0.922	372	334	1.6	6.4	55.576	F
5	546	137	1017	1054	0.518	544	616	0.6	1.1	7.039	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	688	1680	0.508	853	894	1.0	1.0	4.356	A
2	991	248	528	941	1.053	932	1013	23.4	38.0	129.668	F
3	499	125	1120	729	0.685	498	341	2.0	2.1	15.567	C
4	391	98	1280	416	0.941	382	338	6.4	8.5	83.422	F
5	546	137	1036	1042	0.524	546	626	1.1	1.1	7.255	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	697	174	579	1759	0.396	698	802	1.0	0.7	3.397	A
2	809	202	433	993	0.815	939	844	38.0	5.6	78.969	F
3	407	102	1085	748	0.544	411	287	2.1	1.2	10.768	B
4	319	80	1186	459	0.695	343	310	8.5	2.5	35.957	E
5	446	111	933	1108	0.403	448	596	1.1	0.7	5.467	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	477	1832	0.318	584	636	0.7	0.5	2.887	A
2	678	169	362	1031	0.657	692	700	5.6	2.0	11.023	B
3	341	85	818	903	0.378	343	236	1.2	0.6	6.456	A
4	267	67	920	581	0.460	274	242	2.5	0.9	11.943	B
5	373	93	739	1231	0.303	374	455	0.7	0.4	4.209	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2	1.85	0.31	1.12	2.99	3.79			N/A	N/A
3	0.59	0.55	1.00	1.40	1.45			N/A	N/A
4	0.81	0.54	0.99	1.40	1.45			N/A	N/A
5	0.43	0.00	0.00	0.43	0.43			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.65	0.08	0.79	1.36	1.43			N/A	N/A
2	3.97	0.07	1.42	10.70	15.97			N/A	N/A
3	0.96	0.08	0.87	1.61	1.95			N/A	N/A
4	1.59	0.06	0.91	3.70	5.31			N/A	N/A
5	0.62	0.09	0.81	1.36	1.43			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.02	0.03	0.26	1.02	1.02			N/A	N/A
2	23.40	2.76	18.46	46.97	58.28			N/A	N/A
3	1.98	0.03	0.29	1.98	7.55			N/A	N/A
4	6.38	0.09	1.97	17.29	25.38			N/A	N/A
5	1.06	0.03	0.26	1.06	1.06			N/A	N/A

**08:30 - 08:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.03	0.03	0.27	1.03	1.43			N/A	N/A
2	38.04	5.59	30.95	74.89	92.05			N/A	N/A
3	2.10	0.03	0.28	2.10	6.73			N/A	N/A
4	8.54	0.07	1.58	24.47	38.13			N/A	N/A
5	1.09	0.03	0.28	1.09	2.75			N/A	N/A

**08:45 - 09:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.66	0.55	1.00	1.40	1.45			N/A	N/A
2	5.56	0.05	0.49	15.92	27.89			N/A	N/A
3	1.22	0.09	1.03	2.16	2.86			N/A	N/A
4	2.50	0.05	0.57	6.84	10.95			N/A	N/A
5	0.68	0.19	0.92	1.39	1.44			N/A	N/A

**09:00 - 09:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.47	0.04	0.38	1.21	1.35			N/A	N/A
2	1.98	0.03	0.29	1.98	8.14			N/A	N/A
3	0.61	0.04	0.38	1.27	1.96			N/A	N/A
4	0.87	0.03	0.29	1.25	3.76			N/A	N/A
5	0.44	0.04	0.36	1.18	1.34			N/A	N/A

# 2023LG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	43.07	E

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-12	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1080	100.000
2		ONE HOUR	✓	739	100.000
3		ONE HOUR	✓	401	100.000
4		ONE HOUR	✓	298	100.000
5		ONE HOUR	✓	514	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	402	351	264	60
	2	146	3	55	155	380
	3	267	48	0	11	75
	4	161	125	8	0	4
	5	65	359	83	6	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.71	7.42	2.4	4.1	A	991	1487
2	1.06	148.26	35.8	83.9	F	678	1017
3	0.58	11.34	1.4	3.8	B	368	552
4	0.62	18.17	1.6	6.1	C	273	410
5	0.48	5.91	0.9	2.6	A	472	707

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	474	1835	0.443	810	480	0.0	0.8	3.503	A
2	556	139	582	912	0.610	550	702	0.0	1.5	9.796	A
3	302	75	760	937	0.322	300	372	0.0	0.5	5.635	A
4	224	56	734	667	0.336	222	326	0.0	0.5	8.061	A
5	387	97	568	1339	0.289	385	388	0.0	0.4	3.768	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	568	1767	0.550	969	574	0.8	1.2	4.505	A
2	664	166	696	850	0.782	657	841	1.5	3.3	18.058	C
3	360	90	908	851	0.424	359	446	0.5	0.7	7.306	A
4	268	67	878	601	0.446	267	390	0.5	0.8	10.740	B
5	462	116	681	1268	0.365	461	464	0.4	0.6	4.461	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	694	1675	0.710	1184	689	1.2	2.4	7.261	A
2	814	203	851	766	1.063	740	1027	3.3	21.6	76.129	F
3	442	110	1052	768	0.575	439	540	0.7	1.3	10.866	B
4	328	82	1027	532	0.617	325	463	0.8	1.5	17.164	C
5	566	141	818	1180	0.479	565	534	0.6	0.9	5.833	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	697	1674	0.711	1189	695	2.4	2.4	7.424	A
2	814	203	854	764	1.065	757	1031	21.6	35.8	148.264	F
3	442	110	1068	758	0.582	441	543	1.3	1.4	11.339	B
4	328	82	1041	525	0.625	328	468	1.5	1.6	18.166	C
5	566	141	826	1175	0.481	566	543	0.9	0.9	5.905	A

**17:45 - 18:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	572	1764	0.551	976	605	2.4	1.2	4.594	A
2	664	166	701	847	0.784	790	847	35.8	4.4	82.490	F
3	360	90	1033	779	0.463	362	458	1.4	0.9	8.684	A
4	268	67	976	556	0.482	271	420	1.6	1.0	12.741	B
5	462	116	714	1247	0.371	463	533	0.9	0.6	4.602	A

**18:00 - 18:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	478	1832	0.444	815	488	1.2	0.8	3.545	A
2	556	139	585	910	0.611	568	708	4.4	1.6	10.842	B
3	302	75	777	927	0.326	303	376	0.9	0.5	5.787	A
4	224	56	750	660	0.340	226	331	1.0	0.5	8.337	A
5	387	97	578	1333	0.290	388	398	0.6	0.4	3.811	A

**Queue Variation Results for each time segment**

**16:45 - 17:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.79	0.55	1.00	1.40	1.45			N/A	N/A
2	1.52	0.22	1.33	2.48	2.96			N/A	N/A
3	0.47	0.00	0.00	0.47	0.47			N/A	N/A
4	0.50	0.50	1.00	1.40	1.45			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

**17:00 - 17:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.21	0.05	0.58	2.79	4.11			N/A	N/A
2	3.29	0.06	1.14	8.89	13.53			N/A	N/A
3	0.72	0.10	0.84	1.39	1.46			N/A	N/A
4	0.79	0.11	0.88	1.42	1.49			N/A	N/A
5	0.57	0.08	0.77	1.35	1.43			N/A	N/A

**17:15 - 17:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.38	0.03	0.27	2.38	4.05			N/A	N/A
2	21.63	2.86	17.31	42.60	52.51			N/A	N/A
3	1.32	0.03	0.27	1.32	1.32			N/A	N/A
4	1.54	0.03	0.28	1.54	5.40			N/A	N/A
5	0.91	0.03	0.26	0.91	0.91			N/A	N/A

**17:30 - 17:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.42	0.03	0.27	2.42	2.42			N/A	N/A
2	35.84	6.08	29.72	68.80	83.86			N/A	N/A
3	1.37	0.03	0.28	1.37	3.83			N/A	N/A
4	1.61	0.03	0.29	1.61	6.13			N/A	N/A
5	0.92	0.03	0.28	0.92	2.57			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.24	0.09	1.02	2.27	2.95			N/A	N/A
2	4.45	0.04	0.43	12.37	22.93			N/A	N/A
3	0.88	0.14	0.94	1.38	1.38			N/A	N/A
4	0.96	0.08	0.88	1.61	1.95			N/A	N/A
5	0.59	0.55	1.00	1.40	1.45			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.05	0.47	1.67	2.40			N/A	N/A
2	1.62	0.03	0.28	1.62	5.53			N/A	N/A
3	0.49	0.04	0.41	1.28	1.42			N/A	N/A
4	0.52	0.04	0.38	1.42	1.48			N/A	N/A
5	0.41	0.03	0.29	0.84	1.17			N/A	N/A

## 2023LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	8.21	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	14	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
-----	------------	--------------	--------------	-------------------------	--------------------



1		ONE HOUR	✓	686	100.000
2		ONE HOUR	✓	647	100.000
3		ONE HOUR	✓	316	100.000
4		ONE HOUR	✓	221	100.000
5		ONE HOUR	✓	378	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	286	227	123	49
	2	234	2	41	101	269
	3	204	49	0	11	52
	4	119	85	10	0	7
	5	55	266	52	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.42	3.43	0.7	2.7	A	629	944
2	0.75	15.15	2.9	13.3	C	594	891
3	0.40	6.80	0.7	3.0	A	290	435
4	0.43	11.05	0.7	3.4	B	203	304
5	0.34	4.55	0.5	2.4	A	347	520

### Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	351	1924	0.269	515	459	0.0	0.4	2.554	A
2	487	122	351	1038	0.469	484	516	0.0	0.9	6.459	A
3	238	59	587	1038	0.229	237	248	0.0	0.3	4.489	A
4	166	42	643	708	0.235	165	180	0.0	0.3	6.611	A
5	285	71	527	1365	0.208	284	282	0.0	0.3	3.324	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	421	1873	0.329	616	550	0.4	0.5	2.862	A
2	582	145	419	1000	0.582	580	618	0.9	1.4	8.521	A
3	284	71	703	970	0.293	284	296	0.3	0.4	5.240	A
4	199	50	771	650	0.306	198	215	0.3	0.4	7.960	A
5	340	85	631	1299	0.262	339	338	0.3	0.4	3.752	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	515	1805	0.418	754	671	0.5	0.7	3.423	A
2	712	178	513	949	0.751	706	756	1.4	2.8	14.491	B
3	348	87	857	881	0.395	347	363	0.4	0.6	6.734	A
4	243	61	941	571	0.426	242	263	0.4	0.7	10.894	B
5	416	104	771	1210	0.344	416	412	0.4	0.5	4.526	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	516	1804	0.419	755	675	0.7	0.7	3.431	A
2	712	178	514	949	0.751	712	757	2.8	2.9	15.147	C
3	348	87	863	877	0.397	348	363	0.6	0.7	6.798	A
4	243	61	947	569	0.428	243	264	0.7	0.7	11.049	B
5	416	104	775	1208	0.345	416	415	0.5	0.5	4.547	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	423	1872	0.329	618	555	0.7	0.5	2.871	A
2	582	145	420	1000	0.582	588	620	2.9	1.4	8.859	A
3	284	71	711	966	0.294	285	297	0.7	0.4	5.295	A
4	199	50	779	646	0.307	200	217	0.7	0.4	8.086	A
5	340	85	637	1295	0.262	340	342	0.5	0.4	3.774	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	516	129	354	1922	0.269	517	463	0.5	0.4	2.562	A
2	487	122	352	1037	0.470	489	519	1.4	0.9	6.600	A
3	238	59	592	1034	0.230	238	249	0.4	0.3	4.527	A
4	166	42	650	706	0.236	167	181	0.4	0.3	6.688	A
5	285	71	532	1362	0.209	285	285	0.4	0.3	3.342	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2	0.87	0.55	1.00	1.40	1.45			N/A	N/A
3	0.30	0.00	0.00	0.30	0.30			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A
5	0.26	0.00	0.00	0.26	0.26			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2	1.36	0.07	0.88	2.93	4.16			N/A	N/A
3	0.41	0.00	0.00	0.41	0.41			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.71	0.03	0.25	0.71	0.71			N/A	N/A
2	2.83	0.03	0.30	3.22	13.28			N/A	N/A
3	0.65	0.03	0.25	0.65	0.65			N/A	N/A
4	0.73	0.03	0.26	0.73	0.73			N/A	N/A
5	0.52	0.03	0.25	0.52	0.52			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.72	0.03	0.28	0.74	2.67			N/A	N/A
2	2.92	0.03	0.28	2.92	8.17			N/A	N/A
3	0.65	0.03	0.29	1.30	2.97			N/A	N/A
4	0.74	0.03	0.29	1.34	3.38			N/A	N/A
5	0.52	0.03	0.30	1.42	2.40			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2	1.42	0.05	0.65	3.45	5.09			N/A	N/A
3	0.42	0.00	0.00	0.42	0.42			N/A	N/A

4	0.45	0.03	0.34	1.13	1.31			N/A	N/A
5	0.36	0.00	0.00	0.36	0.36			N/A	N/A

#### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2	0.90	0.04	0.38	2.16	3.77			N/A	N/A
3	0.30	0.00	0.00	0.30	0.30			N/A	N/A
4	0.31	0.03	0.25	0.46	0.48			N/A	N/A
5	0.27	0.00	0.00	0.27	0.27			N/A	N/A

## 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	67	100.000

2		ONE HOUR	✓	63	100.000
3		ONE HOUR	✓	31	100.000
4		ONE HOUR	✓	22	100.000
5		ONE HOUR	✓	36	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	28	22	12	5
	2	23	0	4	10	26
	3	20	5	0	1	5
	4	12	8	1	0	1
	5	5	26	5	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	1.74	0.0	0.5	A	61	92
2	0.06	3.18	0.1	0.5	A	58	87
3	0.03	2.78	0.0	0.5	A	28	43
4	0.03	3.84	0.0	0.5	A	20	30
5	0.02	2.23	0.0	0.5	A	33	50

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	50	13	34	2154	0.023	50	45	0.0	0.0	1.710	A
2	47	12	34	1210	0.039	47	50	0.0	0.0	3.096	A
3	23	6	57	1344	0.017	23	24	0.0	0.0	2.724	A
4	17	4	63	976	0.017	16	17	0.0	0.0	3.753	A
5	27	7	52	1667	0.016	27	28	0.0	0.0	2.195	A

23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40	2149	0.028	60	54	0.0	0.0	1.722	A
2	57	14	40	1206	0.047	57	60	0.0	0.0	3.131	A
3	28	7	68	1338	0.021	28	29	0.0	0.0	2.747	A
4	20	5	75	970	0.020	20	21	0.0	0.0	3.788	A
5	32	8	62	1660	0.019	32	33	0.0	0.0	2.210	A

23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50	2142	0.034	74	66	0.0	0.0	1.739	A
2	69	17	50	1201	0.058	69	74	0.0	0.1	3.180	A
3	34	9	84	1329	0.026	34	35	0.0	0.0	2.779	A
4	24	6	92	962	0.025	24	25	0.0	0.0	3.837	A
5	40	10	76	1652	0.024	40	41	0.0	0.0	2.232	A

23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50	2142	0.034	74	66	0.0	0.0	1.739	A
2	69	17	50	1201	0.058	69	74	0.1	0.1	3.180	A
3	34	9	84	1329	0.026	34	35	0.0	0.0	2.779	A
4	24	6	92	962	0.025	24	25	0.0	0.0	3.837	A
5	40	10	76	1652	0.024	40	41	0.0	0.0	2.233	A

23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40	2149	0.028	60	54	0.0	0.0	1.722	A
2	57	14	40	1206	0.047	57	60	0.1	0.0	3.131	A
3	28	7	68	1338	0.021	28	29	0.0	0.0	2.747	A
4	20	5	76	970	0.020	20	21	0.0	0.0	3.791	A
5	32	8	62	1660	0.019	32	33	0.0	0.0	2.212	A

00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	50	13	34	2154	0.023	50	45	0.0	0.0	1.710	A
2	47	12	34	1210	0.039	47	50	0.0	0.0	3.097	A
3	23	6	57	1344	0.017	23	24	0.0	0.0	2.724	A

4	17	4	63	975	0.017	17	17	0.0	0.0	3.753	A
5	27	7	52	1667	0.016	27	28	0.0	0.0	2.195	A

### Queue Variation Results for each time segment

#### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

#### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.06	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A



### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

## 2037LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	43.43	E

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-10	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	767	100.000
2		ONE HOUR	✓	887	100.000
3		ONE HOUR	✓	434	100.000
4		ONE HOUR	✓	341	100.000

5		ONE HOUR	✓	482	100.000
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## Origin-Destination Data

### Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	388	184	131	64
	2	251	14	35	170	417
	3	278	52	0	7	97
	4	208	124	7	0	2
	5	67	336	76	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To					
	1	2	3	4	5	
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.50	4.25	1.0	1.6	A	704	1056
2	1.03	105.31	29.6	83.9	F	814	1221
3	0.65	14.19	1.8	5.6	B	398	597
4	0.88	59.55	5.8	29.9	F	313	469
5	0.50	6.83	1.0	2.8	A	442	663

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	577	144	458	1846	0.313	576	600	0.0	0.5	2.829	A
2	668	167	349	1039	0.643	661	685	0.0	1.7	9.366	A
3	327	82	783	924	0.354	325	226	0.0	0.5	5.989	A

4	257	64	875	602	0.427	254	232	0.0	0.7	10.264	B
5	363	91	697	1258	0.289	361	433	0.0	0.4	4.009	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	690	172	548	1781	0.387	689	718	0.5	0.6	3.295	A
2	797	199	418	1001	0.796	790	820	1.7	3.6	16.474	C
3	390	98	937	835	0.467	389	271	0.5	0.9	8.052	A
4	307	77	1047	523	0.587	304	278	0.7	1.4	16.284	C
5	433	108	834	1170	0.370	433	518	0.4	0.6	4.874	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	844	211	666	1696	0.498	843	857	0.6	1.0	4.215	A
2	977	244	511	951	1.027	914	998	3.6	19.3	58.740	F
3	478	119	1095	743	0.643	474	329	0.9	1.7	13.246	B
4	375	94	1240	434	0.865	362	330	1.4	4.7	43.841	E
5	531	133	994	1069	0.496	529	608	0.6	1.0	6.651	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	844	211	671	1692	0.499	844	871	1.0	1.0	4.248	A
2	977	244	512	950	1.028	936	1004	19.3	29.6	105.315	F
3	478	119	1117	730	0.654	477	331	1.7	1.8	14.191	B
4	375	94	1259	425	0.883	371	335	4.7	5.8	59.546	F
5	531	133	1011	1058	0.502	531	619	1.0	1.0	6.827	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	690	172	559	1773	0.389	691	763	1.0	0.6	3.330	A
2	797	199	419	1000	0.797	898	831	29.6	4.5	50.748	F
3	390	98	1041	774	0.504	393	276	1.8	1.0	9.527	A
4	307	77	1135	482	0.636	322	299	5.8	1.9	24.360	C
5	433	108	888	1136	0.381	435	569	1.0	0.6	5.144	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	577	144	464	1842	0.313	578	612	0.6	0.5	2.848	A
2	668	167	351	1038	0.644	678	691	4.5	1.9	10.304	B
3	327	82	801	913	0.358	329	228	1.0	0.6	6.178	A
4	257	64	893	594	0.433	261	236	1.9	0.8	10.961	B
5	363	91	712	1248	0.291	364	442	0.6	0.4	4.075	A

## Queue Variation Results for each time segment

### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2	1.75	0.43	1.07	2.73	3.29			N/A	N/A
3	0.54	0.54	1.00	1.40	1.45			N/A	N/A
4	0.73	0.55	1.00	1.40	1.45			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.63	0.08	0.78	1.36	1.43			N/A	N/A
2	3.60	0.07	1.27	9.74	14.68			N/A	N/A
3	0.86	0.08	0.85	1.25	1.69			N/A	N/A
4	1.36	0.07	0.90	2.93	4.13			N/A	N/A
5	0.58	0.08	0.78	1.36	1.43			N/A	N/A

### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.98	0.03	0.26	0.98	0.98			N/A	N/A
2	19.32	1.49	13.79	42.07	53.89			N/A	N/A
3	1.73	0.03	0.28	1.73	5.20			N/A	N/A
4	4.67	0.06	0.89	13.30	21.64			N/A	N/A
5	0.97	0.03	0.26	0.97	0.97			N/A	N/A

### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.99	0.03	0.27	0.99	1.56			N/A	N/A
2	29.60	1.60	21.10	65.34	83.92			N/A	N/A
3	1.84	0.03	0.28	1.84	5.64			N/A	N/A
4	5.76	0.05	0.45	16.19	29.87			N/A	N/A
5	1.00	0.03	0.28	1.00	2.84			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.64	0.55	1.00	1.40	1.45			N/A	N/A
2	4.52	0.04	0.43	12.52	23.32			N/A	N/A
3	1.04	0.09	0.95	1.73	2.10			N/A	N/A
4	1.85	0.05	0.47	4.94	8.03			N/A	N/A
5	0.62	0.16	0.90	1.38	1.44			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2	1.86	0.03	0.29	1.86	7.99			N/A	N/A

3	0.56	0.04	0.40	1.47	1.62			N/A	N/A
4	0.78	0.03	0.30	1.00	3.71			N/A	N/A
5	0.41	0.03	0.32	1.02	1.26			N/A	N/A

## 2037LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	31.43	D

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-9	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1036	100.000
2		ONE HOUR	✓	726	100.000
3		ONE HOUR	✓	387	100.000
4		ONE HOUR	✓	287	100.000
5		ONE HOUR	✓	498	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	392	334	250	57
	2	146	2	54	152	372
	3	258	47	0	11	71
	4	156	121	7	0	3
	5	62	350	79	6	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.68	6.56	2.1	3.3	A	951	1426
2	1.02	101.44	22.8	71.5	F	666	999
3	0.56	10.69	1.2	3.8	B	355	533
4	0.60	16.79	1.4	5.5	C	263	395
5	0.46	5.64	0.9	2.7	A	457	685

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	459	1846	0.423	777	467	0.0	0.7	3.361	A
2	547	137	553	928	0.589	541	683	0.0	1.4	9.180	A
3	291	73	739	949	0.307	290	355	0.0	0.4	5.441	A
4	216	54	715	676	0.320	214	314	0.0	0.5	7.770	A
5	375	94	553	1349	0.278	373	376	0.0	0.4	3.691	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	931	233	550	1780	0.523	930	559	0.7	1.1	4.229	A
2	653	163	662	869	0.751	647	818	1.4	2.8	15.829	C
3	348	87	883	866	0.402	347	425	0.4	0.7	6.932	A
4	258	65	855	611	0.422	257	375	0.5	0.7	10.140	B
5	448	112	662	1279	0.350	447	450	0.4	0.5	4.323	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1141	285	672	1691	0.675	1137	675	1.1	2.0	6.452	A
2	799	200	809	789	1.013	749	1000	2.8	15.4	58.594	F
3	426	107	1041	774	0.550	424	517	0.7	1.2	10.218	B
4	316	79	1015	537	0.588	313	450	0.7	1.4	15.886	C
5	548	137	800	1192	0.460	547	528	0.5	0.8	5.574	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1141	285	675	1689	0.675	1141	682	2.0	2.1	6.557	A
2	799	200	811	787	1.015	770	1004	15.4	22.8	101.444	F
3	426	107	1061	762	0.559	426	520	1.2	1.2	10.689	B
4	316	79	1032	530	0.597	316	455	1.4	1.4	16.792	C
5	548	137	808	1187	0.462	548	540	0.8	0.9	5.639	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	931	233	554	1777	0.524	935	580	2.1	1.1	4.296	A
2	653	163	665	867	0.753	731	824	22.8	3.4	37.595	E
3	348	87	962	820	0.424	350	433	1.2	0.7	7.693	A
4	258	65	918	582	0.443	261	394	1.4	0.8	11.283	B
5	448	112	685	1265	0.354	449	494	0.9	0.6	4.420	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	463	1843	0.423	781	474	1.1	0.7	3.395	A
2	547	137	556	926	0.590	554	688	3.4	1.5	9.865	A
3	291	73	752	942	0.309	293	358	0.7	0.5	5.557	A
4	216	54	727	670	0.323	217	317	0.8	0.5	7.977	A
5	375	94	561	1344	0.279	376	384	0.6	0.4	3.723	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00



Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.73	0.55	1.00	1.40	1.45			N/A	N/A
2	1.40	0.42	1.28	1.92	2.40			N/A	N/A
3	0.44	0.00	0.00	0.44	0.44			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A
5	0.38	0.00	0.00	0.38	0.38			N/A	N/A

**17:00 - 17:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.09	0.06	0.68	2.32	3.31			N/A	N/A
2	2.83	0.06	0.97	7.60	11.61			N/A	N/A
3	0.66	0.10	0.83	1.37	1.44			N/A	N/A
4	0.72	0.11	0.86	1.38	1.45			N/A	N/A
5	0.53	0.07	0.69	1.34	1.42			N/A	N/A

**17:15 - 17:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.03	0.03	0.27	2.03	2.03			N/A	N/A
2	15.43	0.78	10.15	35.15	45.96			N/A	N/A
3	1.19	0.03	0.27	1.19	1.19			N/A	N/A
4	1.37	0.03	0.28	1.37	3.68			N/A	N/A
5	0.84	0.03	0.26	0.84	0.84			N/A	N/A

**17:30 - 17:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.05	0.03	0.27	2.05	2.05			N/A	N/A
2	22.84	0.83	14.44	53.96	71.49			N/A	N/A
3	1.24	0.03	0.28	1.24	3.79			N/A	N/A
4	1.44	0.03	0.29	1.44	5.49			N/A	N/A
5	0.85	0.03	0.28	0.85	2.73			N/A	N/A

**17:45 - 18:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.11	0.11	1.03	1.78	2.18			N/A	N/A
2	3.36	0.04	0.39	8.90	17.69			N/A	N/A
3	0.75	0.11	0.87	1.40	1.46			N/A	N/A
4	0.81	0.07	0.80	1.13	1.63			N/A	N/A
5	0.55	0.55	1.00	1.40	1.45			N/A	N/A

**18:00 - 18:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.74	0.05	0.56	1.27	1.79			N/A	N/A
2	1.48	0.03	0.29	1.48	5.87			N/A	N/A
3	0.45	0.04	0.39	1.23	1.37			N/A	N/A
4	0.48	0.04	0.39	1.33	1.49			N/A	N/A

5	0.39	0.00	0.00	0.39	0.39			N/A	N/A
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## 2037LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	7.60	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	18	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	665	100.000
2		ONE HOUR	✓	633	100.000
3		ONE HOUR	✓	304	100.000
4		ONE HOUR	✓	211	100.000
5		ONE HOUR	✓	365	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	282	218	117	47
	2	231	1	41	98	262
	3	196	48	0	11	49
	4	113	82	10	0	6
	5	52	259	49	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.40	3.32	0.7	2.8	A	610	915
2	0.73	13.60	2.6	10.5	B	581	871
3	0.38	6.47	0.6	2.8	A	279	418
4	0.40	10.30	0.7	3.1	B	194	290
5	0.33	4.38	0.5	2.1	A	335	502

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	501	125	340	1932	0.259	499	444	0.0	0.3	2.511	A
2	477	119	336	1046	0.456	473	504	0.0	0.8	6.252	A
3	229	57	570	1047	0.219	228	239	0.0	0.3	4.389	A
4	159	40	625	717	0.222	158	173	0.0	0.3	6.423	A
5	275	69	510	1376	0.200	274	272	0.0	0.2	3.263	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	149	408	1883	0.318	597	532	0.3	0.5	2.800	A
2	569	142	402	1010	0.563	567	603	0.8	1.3	8.099	A
3	273	68	683	982	0.278	273	286	0.3	0.4	5.076	A
4	190	47	749	660	0.287	189	207	0.3	0.4	7.638	A
5	328	82	612	1311	0.250	328	326	0.2	0.3	3.660	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	732	183	499	1817	0.403	731	650	0.5	0.7	3.315	A
2	697	174	492	961	0.725	692	739	1.3	2.5	13.137	B
3	335	84	834	894	0.374	334	349	0.4	0.6	6.417	A
4	232	58	915	584	0.398	231	253	0.4	0.6	10.186	B
5	402	100	747	1225	0.328	401	398	0.3	0.5	4.366	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	732	183	500	1816	0.403	732	653	0.7	0.7	3.320	A
2	697	174	492	961	0.725	697	740	2.5	2.6	13.599	B
3	335	84	839	891	0.375	335	350	0.6	0.6	6.466	A
4	232	58	919	582	0.399	232	254	0.6	0.7	10.303	B
5	402	100	751	1223	0.329	402	401	0.5	0.5	4.383	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	149	409	1882	0.318	599	536	0.7	0.5	2.807	A
2	569	142	402	1009	0.564	574	605	2.6	1.3	8.362	A
3	273	68	690	978	0.280	274	287	0.6	0.4	5.122	A
4	190	47	755	657	0.289	191	209	0.7	0.4	7.736	A
5	328	82	617	1308	0.251	329	330	0.5	0.3	3.676	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	501	125	342	1930	0.259	501	448	0.5	0.4	2.519	A
2	477	119	337	1045	0.456	478	507	1.3	0.8	6.373	A
3	229	57	576	1044	0.219	229	240	0.4	0.3	4.421	A
4	159	40	631	714	0.222	159	174	0.4	0.3	6.490	A
5	275	69	515	1373	0.200	275	275	0.3	0.3	3.279	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2	0.83	0.55	1.00	1.40	1.45			N/A	N/A
3	0.28	0.00	0.00	0.28	0.28			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.25	0.00	0.00	0.25	0.25			N/A	N/A

13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2	1.27	0.07	0.90	2.64	3.65			N/A	N/A
3	0.38	0.00	0.00	0.38	0.38			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A
5	0.33	0.00	0.00	0.33	0.33			N/A	N/A

13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.67	0.03	0.25	0.67	0.67			N/A	N/A
2	2.51	0.03	0.29	2.51	10.53			N/A	N/A
3	0.59	0.03	0.25	0.59	0.59			N/A	N/A
4	0.65	0.03	0.26	0.65	0.65			N/A	N/A
5	0.48	0.03	0.25	0.48	0.48			N/A	N/A

13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.67	0.03	0.28	0.97	2.76			N/A	N/A
2	2.57	0.03	0.28	2.57	5.89			N/A	N/A
3	0.60	0.03	0.30	1.38	2.81			N/A	N/A
4	0.66	0.03	0.30	1.40	3.08			N/A	N/A
5	0.49	0.03	0.31	1.42	2.10			N/A	N/A

13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2	1.32	0.06	0.76	2.95	4.32			N/A	N/A
3	0.39	0.00	0.00	0.39	0.39			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A
5	0.34	0.00	0.00	0.34	0.34			N/A	N/A

14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2	0.85	0.04	0.40	1.96	3.26			N/A	N/A
3	0.28	0.00	0.00	0.28	0.28			N/A	N/A
4	0.29	0.03	0.25	0.45	0.48			N/A	N/A

5	0.25	0.00	0.00	0.25	0.25			N/A	N/A
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## 2037LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	65	100.000
2		ONE HOUR	✓	63	100.000
3		ONE HOUR	✓	30	100.000
4		ONE HOUR	✓	21	100.000
5		ONE HOUR	✓	35	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	28	21	11	5
	2	23	0	4	10	26
	3	19	5	0	1	5
	4	11	8	1	0	1
	5	5	25	5	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	1.74	0.0	0.5	A	60	89
2	0.06	3.18	0.1	0.5	A	58	87
3	0.02	2.78	0.0	0.5	A	28	41
4	0.02	3.83	0.0	0.5	A	19	29
5	0.02	2.23	0.0	0.5	A	32	48

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	49	12	33	2154	0.023	49	44	0.0	0.0	1.709	A
2	47	12	32	1210	0.039	47	50	0.0	0.0	3.094	A
3	23	6	56	1345	0.017	23	23	0.0	0.0	2.721	A
4	16	4	62	976	0.016	16	17	0.0	0.0	3.748	A
5	26	7	50	1668	0.016	26	28	0.0	0.0	2.192	A

#### 23:00 - 23:15



Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	58	15	40	2149	0.027	58	52	0.0	0.0	1.720	A
2	57	14	39	1207	0.047	57	59	0.0	0.0	3.128	A
3	27	7	67	1338	0.020	27	28	0.0	0.0	2.744	A
4	19	5	75	970	0.019	19	20	0.0	0.0	3.783	A
5	31	8	60	1662	0.019	31	33	0.0	0.0	2.208	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	72	18	48	2143	0.033	72	64	0.0	0.0	1.737	A
2	69	17	47	1202	0.058	69	73	0.0	0.1	3.176	A
3	33	8	83	1330	0.025	33	34	0.0	0.0	2.775	A
4	23	6	91	963	0.024	23	24	0.0	0.0	3.831	A
5	39	10	74	1653	0.023	39	41	0.0	0.0	2.229	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	72	18	48	2143	0.033	72	64	0.0	0.0	1.737	A
2	69	17	47	1202	0.058	69	73	0.1	0.1	3.176	A
3	33	8	83	1330	0.025	33	34	0.0	0.0	2.775	A
4	23	6	91	962	0.024	23	24	0.0	0.0	3.831	A
5	39	10	74	1653	0.023	39	41	0.0	0.0	2.229	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	58	15	40	2149	0.027	58	52	0.0	0.0	1.723	A
2	57	14	39	1207	0.047	57	59	0.1	0.0	3.128	A
3	27	7	67	1338	0.020	27	28	0.0	0.0	2.746	A
4	19	5	75	970	0.019	19	20	0.0	0.0	3.783	A
5	31	8	60	1661	0.019	31	33	0.0	0.0	2.209	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	49	12	33	2154	0.023	49	44	0.0	0.0	1.709	A
2	47	12	32	1210	0.039	47	50	0.0	0.0	3.094	A
3	23	6	57	1345	0.017	23	23	0.0	0.0	2.722	A
4	16	4	63	976	0.016	16	17	0.0	0.0	3.749	A
5	26	7	50	1668	0.016	26	28	0.0	0.0	2.192	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.03	0.26	0.46	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:45 - 00:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A

5	0.02	0.00	0.00	0.02	0.02			N/A	N/A
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## 2023HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	138.87	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	860	100.000
2		ONE HOUR	✓	997	100.000
3		ONE HOUR	✓	497	100.000
4		ONE HOUR	✓	395	100.000
5		ONE HOUR	✓	551	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	428	208	150	74
	2	281	16	36	193	471
	3	323	54	0	8	112
	4	244	141	8	0	2
	5	78	382	88	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.58	5.19	1.4	1.6	A	789	1184
2	1.20	356.75	103.2	158.6	F	915	1372
3	0.76	20.13	3.0	14.6	C	456	684
4	1.10	210.84	26.4	60.3	F	362	544
5	0.60	8.77	1.5	2.4	A	506	758

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	647	162	517	1804	0.359	645	689	0.0	0.6	3.103	A
2	751	188	398	1012	0.742	740	764	0.0	2.7	12.772	B
3	374	94	883	866	0.432	371	255	0.0	0.8	7.239	A
4	297	74	991	549	0.542	293	264	0.0	1.1	13.832	B
5	415	104	793	1196	0.347	413	490	0.0	0.5	4.583	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	773	193	618	1731	0.447	772	820	0.6	0.8	3.753	A
2	896	224	477	969	0.925	874	913	2.7	8.3	32.075	D
3	447	112	1046	771	0.579	444	304	0.8	1.3	10.940	B
4	355	89	1177	463	0.767	348	314	1.1	2.9	29.684	D
5	495	124	944	1101	0.450	494	581	0.5	0.8	5.926	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	237	737	1644	0.576	945	930	0.8	1.3	5.130	A
2	1098	274	582	912	1.204	906	1099	8.3	56.3	141.046	F
3	547	137	1122	727	0.753	541	365	1.3	2.8	18.795	C
4	435	109	1311	401	1.084	384	352	2.9	15.7	109.802	F
5	607	152	1062	1025	0.592	604	633	0.8	1.4	8.496	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	237	742	1640	0.577	947	940	1.3	1.4	5.191	A
2	1098	274	584	911	1.205	910	1106	56.3	103.2	319.651	F
3	547	137	1127	724	0.756	547	367	2.8	3.0	20.126	C
4	435	109	1320	397	1.096	392	353	15.7	26.4	210.843	F
5	607	152	1076	1017	0.597	607	637	1.4	1.5	8.768	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	773	193	648	1709	0.452	775	890	1.4	0.8	3.865	A
2	896	224	480	967	0.927	958	943	103.2	87.8	356.748	F
3	447	112	1128	724	0.617	452	310	3.0	1.7	13.485	B
4	355	89	1249	430	0.826	414	331	26.4	11.7	172.969	F
5	495	124	1040	1039	0.477	497	623	1.5	0.9	6.667	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	647	162	541	1786	0.362	648	793	0.8	0.6	3.168	A
2	751	188	401	1010	0.743	999	788	87.8	25.8	208.506	F
3	374	94	1134	720	0.519	376	266	1.7	1.1	10.534	B
4	297	74	1195	454	0.654	336	315	11.7	2.1	38.238	E
5	415	104	917	1117	0.371	416	614	0.9	0.6	5.142	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.56	0.55	1.00	1.40	1.45			N/A	N/A
2	2.72	0.08	1.36	6.75	9.66			N/A	N/A
3	0.75	0.55	1.00	1.40	1.45			N/A	N/A
4	1.14	0.11	1.04	1.84	2.35			N/A	N/A
5	0.53	0.53	1.00	1.40	1.45			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.07	0.79	1.05	1.58			N/A	N/A
2	8.29	0.18	4.00	20.87	28.90			N/A	N/A
3	1.34	0.07	0.98	2.74	3.74			N/A	N/A
4	2.89	0.08	1.37	7.30	10.52			N/A	N/A
5	0.81	0.09	0.85	1.43	1.43			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.34	0.03	0.26	1.34	1.34			N/A	N/A
2	56.34	25.96	53.20	84.31	94.90			N/A	N/A
3	2.81	0.03	0.32	4.76	14.57			N/A	N/A
4	15.68	2.12	12.56	30.36	37.29			N/A	N/A
5	1.42	0.03	0.27	1.42	1.42			N/A	N/A

**08:30 - 08:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.35	0.03	0.27	1.35	1.35			N/A	N/A
2	103.22	57.46	99.63	144.00	158.57			N/A	N/A
3	2.95	0.03	0.29	2.95	11.07			N/A	N/A
4	26.42	4.78	22.07	49.75	60.33			N/A	N/A
5	1.46	0.03	0.27	1.46	2.37			N/A	N/A

**08:45 - 09:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.83	0.34	0.97	1.40	1.46			N/A	N/A
2	87.78	44.13	83.84	127.61	142.28			N/A	N/A
3	1.67	0.06	0.75	4.11	6.13			N/A	N/A
4	11.69	0.61	7.62	26.44	34.54			N/A	N/A
5	0.92	0.16	0.96	1.05	1.54			N/A	N/A

**09:00 - 09:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.57	0.06	0.63	1.33	1.42			N/A	N/A
2	25.75	4.42	21.36	48.93	59.55			N/A	N/A
3	1.11	0.04	0.42	2.75	4.44			N/A	N/A
4	2.06	0.03	0.31	3.34	10.50			N/A	N/A

5	0.60	0.05	0.53	1.36	1.46			N/A	N/A
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## 2023HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	120.45	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-21	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1212	100.000
2		ONE HOUR	✓	825	100.000
3		ONE HOUR	✓	445	100.000
4		ONE HOUR	✓	333	100.000
5		ONE HOUR	✓	577	100.000

## Origin-Destination Data



### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	451	394	297	67
	2	163	3	58	174	427
	3	299	51	0	12	83
	4	181	140	8	0	4
	5	73	403	93	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.83	12.68	4.6	21.7	B	1112	1668
2	1.28	454.60	108.2	158.2	F	757	1136
3	0.65	13.45	1.8	5.4	B	408	613
4	0.71	23.99	2.4	11.6	C	306	458
5	0.56	7.23	1.3	1.9	A	529	794

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	912	228	528	1795	0.508	908	536	0.0	1.0	4.040	A
2	621	155	652	874	0.711	612	785	0.0	2.3	13.302	B
3	335	84	850	885	0.379	333	414	0.0	0.6	6.492	A
4	251	63	817	629	0.399	248	366	0.0	0.7	9.394	A
5	434	109	632	1299	0.335	432	433	0.0	0.5	4.147	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1090	272	633	1720	0.634	1087	640	1.0	1.7	5.665	A
2	742	185	780	804	0.922	720	939	2.3	7.7	35.939	E
3	400	100	1006	795	0.503	398	495	0.6	1.0	9.051	A
4	299	75	969	559	0.536	297	435	0.7	1.1	13.682	B
5	519	130	755	1221	0.425	518	512	0.5	0.7	5.117	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1334	334	772	1619	0.824	1324	747	1.7	4.4	11.804	B
2	908	227	951	712	1.276	707	1145	7.7	58.0	181.345	F
3	490	122	1067	759	0.646	487	591	1.0	1.8	13.085	B
4	367	92	1060	517	0.709	362	494	1.1	2.3	22.601	C
5	635	159	886	1137	0.559	633	536	0.7	1.2	7.117	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1334	334	776	1616	0.826	1334	752	4.4	4.6	12.682	B
2	908	227	957	708	1.283	708	1153	58.0	108.2	417.109	F
3	490	122	1070	757	0.647	490	594	1.8	1.8	13.446	B
4	367	92	1063	515	0.712	366	497	2.3	2.4	23.986	C
5	635	159	893	1133	0.561	635	537	1.2	1.3	7.228	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1090	272	639	1715	0.635	1101	661	4.6	1.8	5.958	A
2	742	185	790	799	0.928	792	950	108.2	95.6	454.602	F
3	400	100	1077	753	0.531	403	505	1.8	1.2	10.335	B
4	299	75	1025	533	0.562	303	454	2.4	1.3	15.971	C
5	519	130	779	1206	0.430	521	550	1.3	0.8	5.271	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	912	228	534	1791	0.509	915	591	1.8	1.0	4.125	A
2	621	155	657	871	0.713	862	793	95.6	35.4	276.867	F
3	335	84	1085	749	0.447	336	434	1.2	0.8	8.758	A
4	251	63	1001	544	0.461	253	420	1.3	0.9	12.421	B
5	434	109	690	1262	0.344	435	563	0.8	0.5	4.361	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.02	0.55	1.00	1.40	1.45			N/A	N/A
2	2.33	0.05	0.64	6.29	9.89			N/A	N/A
3	0.60	0.55	1.00	1.40	1.45			N/A	N/A
4	0.65	0.55	1.00	1.40	1.45			N/A	N/A
5	0.50	0.00	0.00	0.50	0.50			N/A	N/A

**17:00 - 17:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.70	0.04	0.45	4.53	7.42			N/A	N/A
2	7.74	0.14	3.29	20.06	28.33			N/A	N/A
3	0.99	0.10	0.95	1.59	1.91			N/A	N/A
4	1.12	0.10	1.01	1.85	2.41			N/A	N/A
5	0.73	0.09	0.82	1.40	1.47			N/A	N/A

**17:15 - 17:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	4.37	0.03	0.32	6.21	21.74			N/A	N/A
2	57.99	29.12	55.25	83.98	93.61			N/A	N/A
3	1.75	0.03	0.28	1.75	5.40			N/A	N/A
4	2.25	0.03	0.32	3.80	11.62			N/A	N/A
5	1.24	0.03	0.26	1.24	1.24			N/A	N/A

**17:30 - 17:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	4.55	0.03	0.28	4.55	13.02			N/A	N/A
2	108.19	65.61	105.22	145.27	158.20			N/A	N/A
3	1.79	0.03	0.28	1.79	3.92			N/A	N/A
4	2.36	0.03	0.29	2.36	9.75			N/A	N/A
5	1.26	0.03	0.27	1.26	1.93			N/A	N/A

**17:45 - 18:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.77	0.05	0.57	4.59	7.06			N/A	N/A
2	95.63	51.78	92.04	134.99	149.20			N/A	N/A
3	1.16	0.08	0.95	2.07	2.83			N/A	N/A
4	1.33	0.05	0.65	3.10	4.63			N/A	N/A
5	0.76	0.15	0.91	1.39	1.46			N/A	N/A

**18:00 - 18:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.05	0.04	0.35	2.56	4.97			N/A	N/A
2	35.37	11.03	31.78	59.36	69.26			N/A	N/A
3	0.82	0.05	0.57	1.59	2.12			N/A	N/A
4	0.87	0.04	0.41	2.01	3.34			N/A	N/A

5	0.53	0.05	0.48	1.30	1.40			N/A	N/A
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## 2023HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	12.35	B

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	3	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	763	100.000
2		ONE HOUR	✓	717	100.000
3		ONE HOUR	✓	349	100.000
4		ONE HOUR	✓	244	100.000
5		ONE HOUR	✓	420	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	318	252	137	55
	2	260	2	44	112	299
	3	227	53	0	12	57
	4	132	94	11	0	7
	5	61	296	57	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.48	3.89	0.9	1.8	A	700	1050
2	0.86	26.92	5.6	29.3	D	658	987
3	0.47	8.22	0.9	3.4	A	320	480
4	0.51	14.20	1.0	4.3	B	224	336
5	0.40	5.20	0.7	2.9	A	385	578

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	389	1896	0.303	573	509	0.0	0.4	2.716	A
2	540	135	389	1016	0.531	535	572	0.0	1.1	7.415	A
3	263	66	652	1000	0.263	261	273	0.0	0.4	4.867	A
4	184	46	713	676	0.272	182	200	0.0	0.4	7.263	A
5	316	79	583	1330	0.238	315	312	0.0	0.3	3.543	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	686	171	466	1841	0.373	685	610	0.4	0.6	3.114	A
2	645	161	466	975	0.661	641	685	1.1	1.9	10.696	B
3	314	78	781	925	0.339	313	327	0.4	0.5	5.877	A
4	219	55	855	611	0.359	219	239	0.4	0.6	9.149	A
5	378	94	699	1256	0.301	377	374	0.3	0.4	4.094	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	840	210	570	1765	0.476	839	743	0.6	0.9	3.880	A
2	789	197	570	918	0.860	776	838	1.9	5.2	23.454	C
3	384	96	947	828	0.464	383	399	0.5	0.9	8.055	A
4	269	67	1039	527	0.510	267	292	0.6	1.0	13.758	B
5	462	116	851	1159	0.399	462	454	0.4	0.7	5.152	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	840	210	571	1764	0.476	840	749	0.9	0.9	3.895	A
2	789	197	571	918	0.860	788	840	5.2	5.6	26.921	D
3	384	96	959	822	0.467	384	401	0.9	0.9	8.221	A
4	269	67	1049	522	0.515	269	294	1.0	1.0	14.197	B
5	462	116	858	1155	0.400	462	460	0.7	0.7	5.197	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	686	171	468	1839	0.373	687	619	0.9	0.6	3.130	A
2	645	161	468	974	0.662	659	688	5.6	2.0	11.896	B
3	314	78	798	915	0.343	315	329	0.9	0.5	6.013	A
4	219	55	870	604	0.363	221	243	1.0	0.6	9.446	A
5	378	94	709	1249	0.302	378	382	0.7	0.4	4.137	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	392	1894	0.303	575	515	0.6	0.4	2.729	A
2	540	135	391	1016	0.532	543	575	2.0	1.2	7.677	A
3	263	66	660	995	0.264	263	275	0.5	0.4	4.926	A
4	184	46	722	672	0.273	184	202	0.6	0.4	7.390	A
5	316	79	590	1325	0.239	317	316	0.4	0.3	3.572	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2	1.11	0.55	1.00	1.40	1.45			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.37	0.00	0.00	0.37	0.37			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

**13:00 - 13:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.59	0.08	0.77	1.35	1.43			N/A	N/A
2	1.89	0.06	0.82	4.77	7.11			N/A	N/A
3	0.51	0.51	1.00	1.40	1.45			N/A	N/A
4	0.55	0.08	0.76	1.35	1.43			N/A	N/A
5	0.43	0.00	0.00	0.43	0.43			N/A	N/A

**13:15 - 13:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.90	0.03	0.25	0.90	0.90			N/A	N/A
2	5.18	0.04	0.41	14.01	27.63			N/A	N/A
3	0.85	0.03	0.26	0.85	0.85			N/A	N/A
4	1.01	0.03	0.27	1.01	1.11			N/A	N/A
5	0.66	0.03	0.25	0.66	0.66			N/A	N/A

**13:30 - 13:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.91	0.03	0.27	0.91	1.79			N/A	N/A
2	5.59	0.03	0.33	9.60	29.25			N/A	N/A
3	0.87	0.03	0.28	0.95	3.36			N/A	N/A
4	1.04	0.03	0.29	1.25	4.34			N/A	N/A
5	0.66	0.03	0.29	1.21	2.94			N/A	N/A

**13:45 - 14:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.60	0.55	1.00	1.40	1.45			N/A	N/A
2	2.02	0.04	0.43	5.50	9.52			N/A	N/A
3	0.53	0.06	0.64	1.33	1.41			N/A	N/A
4	0.58	0.06	0.63	1.33	1.42			N/A	N/A
5	0.44	0.00	0.00	0.44	0.44			N/A	N/A

**14:00 - 14:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2	1.15	0.03	0.32	2.40	5.86			N/A	N/A
3	0.36	0.03	0.27	0.49	0.85			N/A	N/A
4	0.38	0.03	0.33	1.10	1.30			N/A	N/A



5	0.31	0.00	0.00	0.31	0.31			N/A	N/A
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## 2023HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.61	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	74	100.000
2		ONE HOUR	✓	69	100.000
3		ONE HOUR	✓	34	100.000
4		ONE HOUR	✓	24	100.000
5		ONE HOUR	✓	42	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	31	25	13	5
	2	25	0	4	11	29
	3	22	5	0	1	6
	4	13	9	1	0	1
	5	6	29	6	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.75	0.0	0.5	A	68	102
2	0.06	3.21	0.1	0.5	A	63	95
3	0.03	2.80	0.0	0.5	A	31	47
4	0.03	3.86	0.0	0.5	A	22	33
5	0.03	2.25	0.0	0.5	A	39	58

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	56	14	38	2150	0.026	56	50	0.0	0.0	1.717	A
2	52	13	38	1207	0.043	52	56	0.0	0.0	3.115	A
3	26	6	63	1341	0.019	26	27	0.0	0.0	2.736	A
4	18	5	69	973	0.019	18	20	0.0	0.0	3.769	A
5	32	8	56	1664	0.019	32	31	0.0	0.0	2.204	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	67	17	46	2145	0.031	67	59	0.0	0.0	1.731	A
2	62	16	46	1203	0.052	62	66	0.0	0.1	3.154	A
3	31	8	75	1334	0.023	31	32	0.0	0.0	2.761	A
4	22	5	83	967	0.022	22	23	0.0	0.0	3.808	A
5	38	9	67	1657	0.023	38	37	0.0	0.0	2.222	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	81	20	56	2137	0.038	81	73	0.0	0.0	1.750	A
2	76	19	56	1198	0.063	76	81	0.1	0.1	3.209	A
3	37	9	92	1324	0.028	37	40	0.0	0.0	2.797	A
4	26	7	101	958	0.028	26	29	0.0	0.0	3.864	A
5	46	12	83	1647	0.028	46	45	0.0	0.0	2.248	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	81	20	56	2137	0.038	81	73	0.0	0.0	1.750	A
2	76	19	56	1198	0.063	76	81	0.1	0.1	3.209	A
3	37	9	92	1324	0.028	37	40	0.0	0.0	2.797	A
4	26	7	101	958	0.028	26	29	0.0	0.0	3.864	A
5	46	12	83	1647	0.028	46	45	0.0	0.0	2.248	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	67	17	46	2145	0.031	67	59	0.0	0.0	1.734	A
2	62	16	46	1203	0.052	62	67	0.1	0.1	3.154	A
3	31	8	76	1334	0.023	31	32	0.0	0.0	2.764	A
4	22	5	83	966	0.022	22	23	0.0	0.0	3.812	A
5	38	9	67	1657	0.023	38	37	0.0	0.0	2.223	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	56	14	38	2150	0.026	56	50	0.0	0.0	1.720	A
2	52	13	38	1207	0.043	52	56	0.1	0.0	3.118	A
3	26	6	63	1341	0.019	26	27	0.0	0.0	2.738	A
4	18	5	69	973	0.019	18	20	0.0	0.0	3.770	A
5	32	8	57	1664	0.019	32	31	0.0	0.0	2.206	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:45 - 00:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A

5	0.02	0.00	0.00	0.02	0.02			N/A	N/A
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## 2037HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	530.14	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-34	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	980	100.000
2		ONE HOUR	✓	1185	100.000
3		ONE HOUR	✓	810	100.000
4		ONE HOUR	✓	438	100.000
5		ONE HOUR	✓	630	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	475	266	160	79
	2	310	18	130	211	516
	3	409	209	0	29	163
	4	257	153	26	0	2
	5	83	416	128	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.73	8.86	2.6	6.7	A	899	1349
2	1.56	1196.21	323.6	323.6	F	1087	1631
3	1.13	262.29	61.3	111.8	F	743	1115
4	1.42	1132.63	101.8	200.0	F	402	603
5	0.73	13.68	2.6	10.5	B	578	867

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	707	1666	0.443	735	776	0.0	0.8	3.852	A
2	892	223	495	959	0.930	858	946	0.0	8.5	29.557	D
3	610	152	945	830	0.735	599	408	0.0	2.6	15.032	C
4	330	82	1248	430	0.767	318	296	0.0	2.8	29.785	D
5	474	119	1012	1057	0.449	471	555	0.0	0.8	6.107	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	881	220	828	1579	0.558	879	870	0.8	1.2	5.134	A
2	1065	266	591	907	1.174	900	1116	8.5	49.9	131.658	F
3	728	182	1018	787	0.925	707	473	2.6	7.9	37.479	E
4	394	98	1393	363	1.084	347	332	2.8	14.6	115.387	F
5	566	142	1134	980	0.578	564	607	0.8	1.3	8.611	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1079	270	952	1488	0.725	1074	905	1.2	2.6	8.580	A
2	1305	326	717	839	1.556	838	1309	49.9	166.5	473.147	F
3	892	223	1012	791	1.127	781	544	7.9	35.6	115.300	F
4	482	121	1437	344	1.404	342	356	14.6	49.6	359.781	F
5	694	173	1169	958	0.724	689	610	1.3	2.5	13.161	B

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1079	270	957	1485	0.727	1079	908	2.6	2.6	8.856	A
2	1305	326	720	837	1.559	837	1316	166.5	283.5	932.856	F
3	892	223	1011	791	1.127	789	546	35.6	61.3	232.906	F
4	482	121	1444	340	1.417	340	357	49.6	85.2	737.187	F
5	694	173	1172	956	0.726	693	612	2.5	2.6	13.680	B

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	881	220	844	1567	0.562	886	897	2.6	1.3	5.331	A
2	1065	266	595	905	1.177	905	1135	283.5	323.6	1196.206	F
3	728	182	1024	784	0.929	771	476	61.3	50.5	262.286	F
4	394	98	1459	333	1.182	333	336	85.2	100.4	1021.466	F
5	566	142	1170	957	0.592	571	622	2.6	1.5	9.424	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	758	1629	0.453	740	889	1.3	0.8	4.055	A
2	892	223	499	957	0.932	954	998	323.6	308.2	1192.490	F
3	610	152	1032	779	0.782	764	421	50.5	11.9	153.604	F
4	330	82	1476	325	1.013	324	320	100.4	101.8	1132.633	F
5	474	119	1170	957	0.496	476	630	1.5	1.0	7.518	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00



Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.79	0.55	1.00	1.40	1.45			N/A	N/A
2	8.51	0.03	0.27	8.51	8.51			N/A	N/A
3	2.60	0.12	1.25	5.72	7.70			N/A	N/A
4	2.85	>199	>199	>199	>199			N/A	N/A
5	0.80	0.55	1.00	1.40	1.45			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.25	0.05	0.61	2.88	4.28			N/A	N/A
2	49.92	>199	>199	>199	>199			N/A	N/A
3	7.87	0.29	4.58	18.39	24.55			N/A	N/A
4	14.63	>199	>199	>199	>199			N/A	N/A
5	1.34	0.07	0.96	2.78	3.82			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.55	0.03	0.28	2.55	6.74			N/A	N/A
2	166.50	>199	>199	>199	>199			N/A	N/A
3	35.61	11.13	32.01	59.76	69.73			N/A	N/A
4	49.62	>199	>199	>199	>199			N/A	N/A
5	2.50	0.03	0.29	2.50	10.47			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.61	0.03	0.27	2.61	2.61			N/A	N/A
2	283.48	>199	>199	>199	>199			N/A	N/A
3	61.31	23.71	56.81	97.56	111.84			N/A	N/A
4	85.19	>199	>199	>199	>199			N/A	N/A
5	2.57	0.03	0.28	2.57	5.54			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.30	0.08	0.98	2.63	3.57			N/A	N/A
2	323.62	>199	>199	>199	>199			N/A	N/A
3	50.54	16.08	45.67	84.93	99.04			N/A	N/A
4	100.44	>199	>199	>199	>199			N/A	N/A
5	1.48	0.06	0.86	3.42	4.88			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.83	0.04	0.44	1.83	2.79			N/A	N/A
2	308.20	>199	>199	>199	>199			N/A	N/A
3	11.90	0.23	6.09	29.93	41.19			N/A	N/A
4	101.76	>199	>199	>199	>199			N/A	N/A

5	1.00	0.04	0.44	2.38	3.71			N/A	N/A
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## 2037HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	542.34	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-37	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1391	100.000
2		ONE HOUR	✓	1061	100.000
3		ONE HOUR	✓	696	100.000
4		ONE HOUR	✓	384	100.000
5		ONE HOUR	✓	675	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	4	505	486	323	73
	2	186	3	196	196	480
	3	376	161	0	32	127
	4	199	156	25	0	4
	5	80	450	136	8	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.07	125.99	59.9	127.6	F	1276	1915
2	1.85	1917.93	421.4	200.0	F	974	1460
3	0.92	44.23	8.8	46.8	E	639	958
4	0.94	80.65	8.9	40.5	F	352	529
5	0.75	14.35	2.9	11.7	B	619	929

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1047	262	701	1670	0.627	1041	621	0.0	1.7	5.661	A
2	799	200	790	799	1.000	744	952	0.0	13.6	47.512	E
3	524	131	913	848	0.618	518	621	0.0	1.6	10.695	B
4	289	72	1022	534	0.541	285	409	0.0	1.1	14.163	B
5	508	127	817	1181	0.430	505	490	0.0	0.7	5.301	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1250	313	840	1570	0.797	1242	712	1.7	3.7	10.726	B
2	954	238	943	716	1.333	714	1138	13.6	73.7	240.217	F
3	626	156	947	829	0.755	620	710	1.6	2.9	16.862	C
4	345	86	1111	493	0.700	341	456	1.1	2.2	23.067	C
5	607	152	947	1099	0.552	605	506	0.7	1.2	7.264	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1532	383	1015	1443	1.061	1411	816	3.7	33.8	58.576	F
2	1168	292	1084	639	1.827	639	1343	73.7	205.9	799.815	F
3	766	192	937	834	0.918	747	786	2.9	7.6	35.163	E
4	423	106	1195	455	0.930	404	489	2.2	6.9	56.567	F
5	743	186	1094	1005	0.739	737	505	1.2	2.7	13.153	B

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1532	383	1028	1433	1.068	1427	830	33.8	59.9	125.991	F
2	1168	292	1095	633	1.845	633	1360	205.9	339.7	1558.495	F
3	766	192	936	835	0.918	762	792	7.6	8.8	44.225	E
4	423	106	1206	450	0.940	415	492	6.9	8.9	80.655	F
5	743	186	1115	992	0.749	742	506	2.7	2.9	14.354	B

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1250	313	867	1550	0.807	1470	730	59.9	5.0	69.447	F
2	954	238	1092	635	1.503	635	1245	339.7	419.4	1910.321	F
3	626	156	948	828	0.756	647	779	8.8	3.3	21.928	C
4	345	86	1100	498	0.693	371	496	8.9	2.5	32.720	D
5	607	152	984	1075	0.564	613	487	2.9	1.3	7.893	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1047	262	713	1662	0.630	1060	641	5.0	1.7	6.112	A
2	799	200	804	791	1.009	791	969	419.4	421.4	1917.933	F
3	524	131	957	823	0.637	530	638	3.3	1.8	12.529	B
4	289	72	1064	515	0.561	294	423	2.5	1.3	16.572	C
5	508	127	843	1164	0.436	510	514	1.3	0.8	5.524	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.65	0.12	1.30	3.09	4.02			N/A	N/A
2	13.61	>199	>199	>199	>199			N/A	N/A
3	1.57	0.60	1.03	1.87	1.97			N/A	N/A
4	1.14	0.55	1.05	1.49	1.49			N/A	N/A
5	0.75	0.55	1.00	1.40	1.45			N/A	N/A

**17:00 - 17:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.70	0.05	0.49	10.49	17.66			N/A	N/A
2	73.69	>199	>199	>199	>199			N/A	N/A
3	2.87	0.08	1.39	7.21	10.36			N/A	N/A
4	2.16	0.08	1.29	4.97	6.94			N/A	N/A
5	1.21	0.06	0.78	2.64	3.72			N/A	N/A

**17:15 - 17:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	33.75	6.03	28.18	64.13	77.92			N/A	N/A
2	205.89	>199	>199	>199	>199			N/A	N/A
3	7.64	0.07	1.07	22.05	35.06			N/A	N/A
4	6.91	0.10	2.33	18.60	27.07			N/A	N/A
5	2.69	0.03	0.30	2.69	11.72			N/A	N/A

**17:30 - 17:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	59.88	14.92	52.48	107.28	127.61			N/A	N/A
2	339.67	>199	>199	>199	>199			N/A	N/A
3	8.78	0.05	0.46	24.56	46.81			N/A	N/A
4	8.91	0.07	1.50	25.72	40.50			N/A	N/A
5	2.87	0.03	0.28	2.87	8.27			N/A	N/A

**17:45 - 18:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	4.97	0.04	0.44	13.90	25.64			N/A	N/A
2	419.43	>199	>199	>199	>199			N/A	N/A
3	3.33	0.04	0.43	9.24	16.88			N/A	N/A
4	2.45	0.04	0.38	6.47	12.65			N/A	N/A
5	1.32	0.06	0.81	2.91	4.19			N/A	N/A

**18:00 - 18:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.73	0.03	0.28	1.73	5.00			N/A	N/A
2	421.37	>199	>199	>199	>199			N/A	N/A
3	1.81	0.03	0.33	3.83	9.54			N/A	N/A
4	1.33	0.03	0.31	2.18	6.72			N/A	N/A

5	0.78	0.04	0.38	1.83	3.06			N/A	N/A
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## 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	58.99	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	855	100.000
2		ONE HOUR	✓	855	100.000
3		ONE HOUR	✓	520	100.000
4		ONE HOUR	✓	273	100.000
5		ONE HOUR	✓	476	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	349	302	145	58
	2	285	2	121	122	325
	3	276	134	0	25	85
	4	140	102	23	0	8
	5	65	322	84	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.57	5.13	1.3	1.5	A	785	1177
2	1.10	179.71	51.2	102.5	F	785	1177
3	0.70	14.53	2.3	8.4	B	477	716
4	0.68	25.07	2.0	9.2	D	251	376
5	0.50	6.90	1.0	2.8	A	437	655

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	503	1814	0.355	641	572	0.0	0.5	3.066	A
2	644	161	463	976	0.659	636	681	0.0	1.9	10.373	B
3	391	98	703	970	0.404	389	397	0.0	0.7	6.165	A
4	206	51	870	604	0.340	203	222	0.0	0.5	8.938	A
5	358	90	718	1244	0.288	357	355	0.0	0.4	4.051	A

#### 13:00 - 13:15



Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	602	1742	0.441	768	685	0.5	0.8	3.692	A
2	769	192	555	927	0.829	759	815	1.9	4.3	20.339	C
3	467	117	839	891	0.525	466	474	0.7	1.1	8.429	A
4	245	61	1040	526	0.466	244	265	0.5	0.9	12.695	B
5	428	107	860	1154	0.371	427	424	0.4	0.6	4.948	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	941	235	735	1645	0.572	939	806	0.8	1.3	5.082	A
2	941	235	679	859	1.095	841	996	4.3	29.5	86.825	F
3	573	143	951	826	0.693	568	568	1.1	2.2	13.734	B
4	301	75	1208	449	0.670	296	312	0.9	1.9	23.007	C
5	524	131	1019	1053	0.498	523	485	0.6	1.0	6.768	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	941	235	739	1643	0.573	941	815	1.3	1.3	5.133	A
2	941	235	680	859	1.097	854	1000	29.5	51.2	179.714	F
3	573	143	964	819	0.699	572	571	2.2	2.3	14.534	B
4	301	75	1221	443	0.679	300	315	1.9	2.0	25.068	D
5	524	131	1030	1046	0.501	524	491	1.0	1.0	6.898	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	608	1737	0.442	771	740	1.3	0.8	3.734	A
2	769	192	557	925	0.831	908	822	51.2	16.5	139.249	F
3	467	117	968	817	0.572	471	497	2.3	1.4	10.516	B
4	245	61	1151	475	0.517	249	287	2.0	1.1	16.187	C
5	428	107	919	1117	0.383	429	482	1.0	0.6	5.251	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	508	1810	0.356	645	599	0.8	0.6	3.094	A
2	644	161	466	975	0.660	701	687	16.5	2.0	15.931	C
3	391	98	760	937	0.418	394	408	1.4	0.7	6.661	A
4	206	51	922	580	0.354	208	232	1.1	0.6	9.715	A
5	358	90	749	1225	0.293	359	381	0.6	0.4	4.165	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2	1.87	0.19	1.01	3.39	4.29			N/A	N/A
3	0.67	0.55	1.00	1.40	1.45			N/A	N/A
4	0.51	0.51	1.00	1.40	1.45			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.78	0.07	0.79	1.49	1.51			N/A	N/A
2	4.31	0.08	1.12	11.57	17.12			N/A	N/A
3	1.08	0.08	0.91	1.92	2.64			N/A	N/A
4	0.85	0.10	0.88	1.02	1.55			N/A	N/A
5	0.58	0.08	0.78	1.36	1.43			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.32	0.03	0.26	1.32	1.32			N/A	N/A
2	29.47	6.82	25.45	52.97	63.23			N/A	N/A
3	2.15	0.03	0.29	2.15	8.45			N/A	N/A
4	1.88	0.03	0.30	2.52	9.16			N/A	N/A
5	0.98	0.03	0.26	0.98	0.98			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.33	0.03	0.27	1.33	1.33			N/A	N/A
2	51.19	15.31	45.90	87.46	102.51			N/A	N/A
3	2.25	0.03	0.28	2.25	6.07			N/A	N/A
4	2.01	0.03	0.30	2.01	9.16			N/A	N/A
5	0.99	0.03	0.28	0.99	2.80			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.30	0.96	1.40	1.45			N/A	N/A
2	16.46	1.00	11.99	35.02	44.50			N/A	N/A
3	1.37	0.09	1.08	2.67	3.56			N/A	N/A
4	1.11	0.07	0.86	2.07	2.88			N/A	N/A
5	0.63	0.16	0.91	1.38	1.44			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.55	0.06	0.60	1.32	1.41			N/A	N/A
2	2.02	0.03	0.29	2.02	7.26			N/A	N/A
3	0.73	0.04	0.40	1.63	2.54			N/A	N/A
4	0.56	0.04	0.36	1.14	1.94			N/A	N/A

5	0.42	0.03	0.32	1.05	1.28			N/A	N/A
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## 2037HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	2.67	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	786	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	83	100.000
2		ONE HOUR	✓	84	100.000
3		ONE HOUR	✓	50	100.000
4		ONE HOUR	✓	27	100.000
5		ONE HOUR	✓	46	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	34	29	14	6
	2	28	0	12	12	32
	3	27	13	0	2	8
	4	14	10	2	0	1
	5	6	31	8	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.77	0.0	0.5	A	76	114
2	0.08	3.27	0.1	0.5	A	77	116
3	0.04	2.85	0.0	0.5	A	46	69
4	0.03	3.92	0.0	0.5	A	25	37
5	0.03	2.27	0.0	0.5	A	42	63

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	62	16	49	2143	0.029	62	56	0.0	0.0	1.729	A
2	63	16	45	1204	0.053	63	66	0.0	0.1	3.156	A
3	38	9	70	1337	0.028	38	38	0.0	0.0	2.769	A
4	20	5	86	965	0.021	20	22	0.0	0.0	3.809	A
5	35	9	71	1655	0.021	35	35	0.0	0.0	2.221	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	75	19	58	2136	0.035	75	67	0.0	0.0	1.745	A
2	76	19	54	1199	0.063	75	79	0.1	0.1	3.204	A
3	45	11	84	1329	0.034	45	46	0.0	0.0	2.802	A
4	24	6	102	957	0.025	24	26	0.0	0.0	3.857	A
5	41	10	84	1646	0.025	41	42	0.0	0.0	2.242	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	91	23	72	2126	0.043	91	83	0.0	0.0	1.768	A
2	92	23	66	1192	0.078	92	97	0.1	0.1	3.272	A
3	55	14	102	1318	0.042	55	56	0.0	0.0	2.849	A
4	30	7	125	947	0.031	30	32	0.0	0.0	3.925	A
5	51	13	103	1634	0.031	51	52	0.0	0.0	2.273	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	91	23	72	2126	0.043	91	83	0.0	0.0	1.768	A
2	92	23	66	1192	0.078	92	97	0.1	0.1	3.273	A
3	55	14	102	1318	0.042	55	56	0.0	0.0	2.849	A
4	30	7	126	947	0.031	30	32	0.0	0.0	3.925	A
5	51	13	103	1634	0.031	51	52	0.0	0.0	2.273	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	75	19	58	2136	0.035	75	67	0.0	0.0	1.745	A
2	76	19	54	1199	0.063	76	79	0.1	0.1	3.204	A
3	45	11	84	1329	0.034	45	46	0.0	0.0	2.805	A
4	24	6	103	957	0.025	24	26	0.0	0.0	3.859	A
5	41	10	85	1646	0.025	41	42	0.0	0.0	2.244	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	62	16	49	2143	0.029	63	57	0.0	0.0	1.732	A
2	63	16	45	1203	0.053	63	66	0.1	0.1	3.156	A
3	38	9	70	1337	0.028	38	38	0.0	0.0	2.772	A
4	20	5	86	965	0.021	20	22	0.0	0.0	3.812	A
5	35	9	71	1655	0.021	35	35	0.0	0.0	2.221	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.03	0.25	0.45	0.48			N/A	N/A
2	0.07	0.03	0.25	0.45	0.48			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.03	0.03	0.25	0.45	0.48			N/A	N/A
5	0.03	0.03	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.03	0.25	0.45	0.48			N/A	N/A
2	0.08	0.03	0.26	0.47	0.49			N/A	N/A
3	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.08	0.00	0.00	0.08	0.08			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:45 - 00:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A

5	0.02	0.00	0.00	0.02	0.02			N/A	N/A
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# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.1.7462  
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**Filename:** V4.1\_Ollerton Rdbt rev impt2+xings 2037.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\1-Ollerton

**Report generation date:** 07/12/2020 09:47:16

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2037, AM
- »2037, PM
- »2037, IP
- »2037, OP
- »2037 final (incl rats), AM
- »2037 final (incl rats), PM
- »2037 final (incl rats), IP
- »2037 final (incl rats), OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP
- »2037LG, AM
- »2037LG, PM
- »2037LG, IP
- »2037LG, OP
- »2023HG, AM
- »2023HG, PM
- »2023HG, IP
- »2023HG, OP
- »2037HG, AM
- »2037HG, PM
- »2037HG, IP
- »2037HG, OP

### Summary of junction performance

	AM							PM							IP							OP						
	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Networ	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Networ	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Networ	

	e (PCU)	ue (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity	e (PCU)	ue (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity	e (PCU)	ue (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity
<b>2023</b>																		
Arm 1	1.0	1.5	4.0	0.5	A		2.4	4.2	6.8	0.7	A		0.7	2.6	3.2	0.4	A	
Arm 2	1.9	3.0	6.8	0.6	A	33% [Arm 2]	1.7	2.0	7.0	0.2	A	25% [Arm 1]	0.9	1.8	4.3	0.4	A	70% [Arm 2]
Arm 3	0.7	3.0	4.5	0.4	A	5.29	0.5	2.4	4.1	0.3	A	5.85	0.3	1.3	3.4	0.2	A	3.61
Arm 4	0.6	3.0	5.5	0.3	A		0.4	1.5	4.2	0.5	A		0.3	0.8	3.5	0.2	A	
Arm 5	0.8	2.9	4.9	0.4	A		0.7	2.9	4.2	0.8	A		0.4	1.6	3.5	0.3	A	
<b>2037</b>																		
Arm 1	1.1	1.5	4.2	0.5	A		2.5	4.4	7.1	0.2	A		0.7	2.5	3.1	0.4	A	
Arm 2	2.2	3.7	7.4	0.6	A	29% [Arm 2]	1.8	2.3	7.3	0.3	A	24% [Arm 1]	1.0	1.6	4.7	0.4	A	66% [Arm 2]
Arm 3	0.7	3.0	4.4	0.4	A	5.61	0.5	2.1	4.8	0.3	A	6.04	0.3	1.3	2.5	0.2	A	3.69
Arm 4	0.7	3.1	5.8	0.4	A		0.4	1.3	3.3	0.3	A		0.3	0.6	2.0	0.1	A	
Arm 5	0.8	2.8	5.1	0.4	A		0.7	2.3	4.2	0.6	A		0.4	1.7	3.1	0.3	A	
<b>2037 final (incl rats)</b>																		
Arm 1	1.8	2.1	6.3	0.6	A		6.1	3.1	1.6	0.8	C		0.9	1.7	3.8	0.4	A	
Arm 2	5.9	3.0	7.4	0.8	C	8% [Arm 2]	8.2	4.4	2.7	0.9	D	2% [Arm 2]	1.5	1.9	0.7	0.6	A	4.58
Arm 3	2.4	6.7	1.0	0.6	B	1.33	1.5	2.6	7.8	0.5	A		0.6	2.8	0.3	0.7	A	4.3% [Arm 2]

Ar m 4	1 2	4 5	9 8	0 5	A					0 7	3 1	6 3	0 3	A					0 3	1 3	4 0	0 2	4 4	A					0 0	0 5	2 1	0 0	A			
Ar m 5	1 5	3 5	8 7	0 5	A					1 2	2 7	6 5	0 3	A					0 5	2 5	4 0	0 3	0 5	A					0 0	0 5	1 9	0 0	A			

**2023LG**

Ar m 1	0 9	1 9	3 7	0 4	A					1 9	3 0	5 8	0 6	A					0 6	2 8	3 0	0 3	0 9	A					0 0	0 5	1 6	0 0	A				
Ar m 2	1 6	2 3	6 3	0 6	A					1 4	1 5	6 2	0 8	A					0 8	2 3	4 0	0 4	0 5	A					0 0	0 5	2 0	0 4	A				
Ar m 3	D 1 3	0 6	2 8	4 3	0 7	A	4.8 1	A	4 0 % [Ar m 2]	D 1 4	0 5	1 9	3 2	0 2	A	5.1 3	A	3 3 % [Ar m 1]	D 1 5	0 3	1 2	3 0	0 2	3 3	A	3.4 3	A	7 9 % [Ar m 2]	D 1 6	0 0	0 5	1 8	0 2	A	1.8 8	A	9 0 0 %
Ar m 4		0 6	2 6	5 0	0 3	A				0 4	1 5	4 0	0 2	A					0 2	0 5	3 4	0 1	0 9	A					0 0	0 5	2 0	0 1	A				
Ar m 5		0 7	2 9	4 5	0 4	A				0 6	2 8	3 9	0 3	A					0 4	1 1	3 0	0 2	0 8	A					0 0	0 5	1 9	0 2	A				

**2037LG**

Ar m 1	0 9	2 0	3 6	0 4	A					1 7	2 4	5 2	0 6	A					0 6	2 8	2 9	0 3	0 8	A					0 0	0 5	1 6	0 0	A				
Ar m 2	1 6	2 0	5 8	0 6	A					1 3	1 5	5 4	0 5	A					0 8	2 5	3 9	0 4	0 3	A					0 0	0 5	2 0	0 4	A				
Ar m 3	D 1 7	0 5	2 5	4 0	0 3	A	4.6 3	A	4 2 % [Ar m 2]	D 1 8	0 4	1 7	3 0	0 3	A	4.8 0	A	3 8 % [Ar m 1]	D 1 9	0 3	1 1	2 9	0 2	0 5	A	3.3 3	A	8 5 % [Ar m 2]	D 2 0	0 0	0 5	1 8	0 2	A	1.8 8	A	9 0 0 %
Ar m 4		0 5	2 2	4 8	0 3	A				0 3	1 4	3 9	0 2	A					0 2	0 5	3 3	0 1	0 8	A					0 0	0 5	2 0	0 1	A				
Ar m 5		0 6	2 9	4 3	0 3	A				0 6	2 7	3 4	0 3	A					0 4	1 4	3 1	0 2	0 6	A					0 0	0 5	1 9	0 2	A				

**2023HG**

Ar m 1	1 1	1 5	4 3	0 5	A					3 1	9 3	8 5	0 7	A					0 8	2 3	3 4	0 4	0 4	A					0 0	0 5	1 6	0 0	A				
Ar m 2	2 4	4 4	7 8	0 7	A					2 1	3 2	8 7	0 6	A					1 0	1 5	4 6	0 5	0 1	A					0 0	0 5	2 0	0 4	A				
Ar m 3	D 2 1	0 8	3 1	4 9	0 4	A	5.9 1	A	2 6 % [Ar m 2]	D 2 2	0 6	2 8	4 4	0 3	A	6.8 7	A	1 8 % [Ar m 1]	D 2 3	0 3	1 4	3 2	0 6	3 8	A	3.8 2	A	6 2 % [Ar m 2]	D 2 4	0 0	0 5	1 9	0 2	A	1.8 9	A	9 0 0 %
Ar m 4		0 7	3 2	6 1	0 4	A				0 5	1 9	4 4	0 3	A					0 3	1 1	3 6	0 2	0 9	A					0 0	0 5	2 0	0 2	A				
Ar m 5		0 9	2 7	5 0	0 0	A				0 8	2 7	4 0	0 0	A					0 5	1 9	3 0	0 0	0 0	A					0 0	0 5	1 0	0 0	A				

2037HG																																	
Ar m 1	2	3	7	0	A	D 2 5	1 6	8	4	0	E	D 2 6	1	1	4	0	A	D 2 7	0	2	4	0	A	D 2 8	0	0	1	0	A	3 6 %	1. 9 1	A	9 0 0 %
	. 1	. 2	. 1	. 6				. 4	. 3	. 7	. 9				. 1	. 5	. 2			. 5		. 7	. 9			. 4	. 3		. 0				
Ar m 2	7	3	2	0	C	B	2	6	4	1	E	7	2	6	0	A	7	2	4	6	0	A	8	1	0	2	0	A	5 %	A	0 0 0 %		
	. 1	. 5	. 0	. 8				. 4	. 4	. 1	. 9			. 4	. 4	. 4		. 6		. 2	. 4	. 4		. 3		. 5	. 5	. 0				. 5	
Ar m 3	2	1	1	0	B	B [Ar m 2]	1	2	7	0	A	2 6. 9 1	0	2	4	0	A	7	2	4	0	A	8	0	0	1	0	A	3 6 %	1. 9 1	A	9 0 0 %	
	. 8	. 3	. 7	. 4				. 7	. 4	. 9	. 3				. 7	. 9	. 1		. 4		. 7	. 9		. 1	. 4		. 0	. 5					. 9
Ar m 4	1	4	1	0	B	B	0	3	6	0	A	7	0	4	0	A	7	0	4	0	A	8	0	2	0	0	A	3 6 %	1. 9 1	A	9 0 0 %		
	. 5	. 7	. 0	. 6				. 8	. 3	. 4	. 4			. 4	. 5	. 3		. 9		. 4	. 5		. 1	. 1		. 0	. 5					. 1	. 1
Ar m 5	1	3	9	0	A	B	1	1	7	0	A	7	0	4	0	A	7	0	4	0	A	8	0	1	0	0	A	3 6 %	1. 9 1	A	9 0 0 %		
	. 8	. 6	. 7	. 6				. 5	. 9	. 1	. 6			. 6	. 9	. 4		. 3		. 6	. 9		. 4	. 3		. 0	. 5					. 9	. 4

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

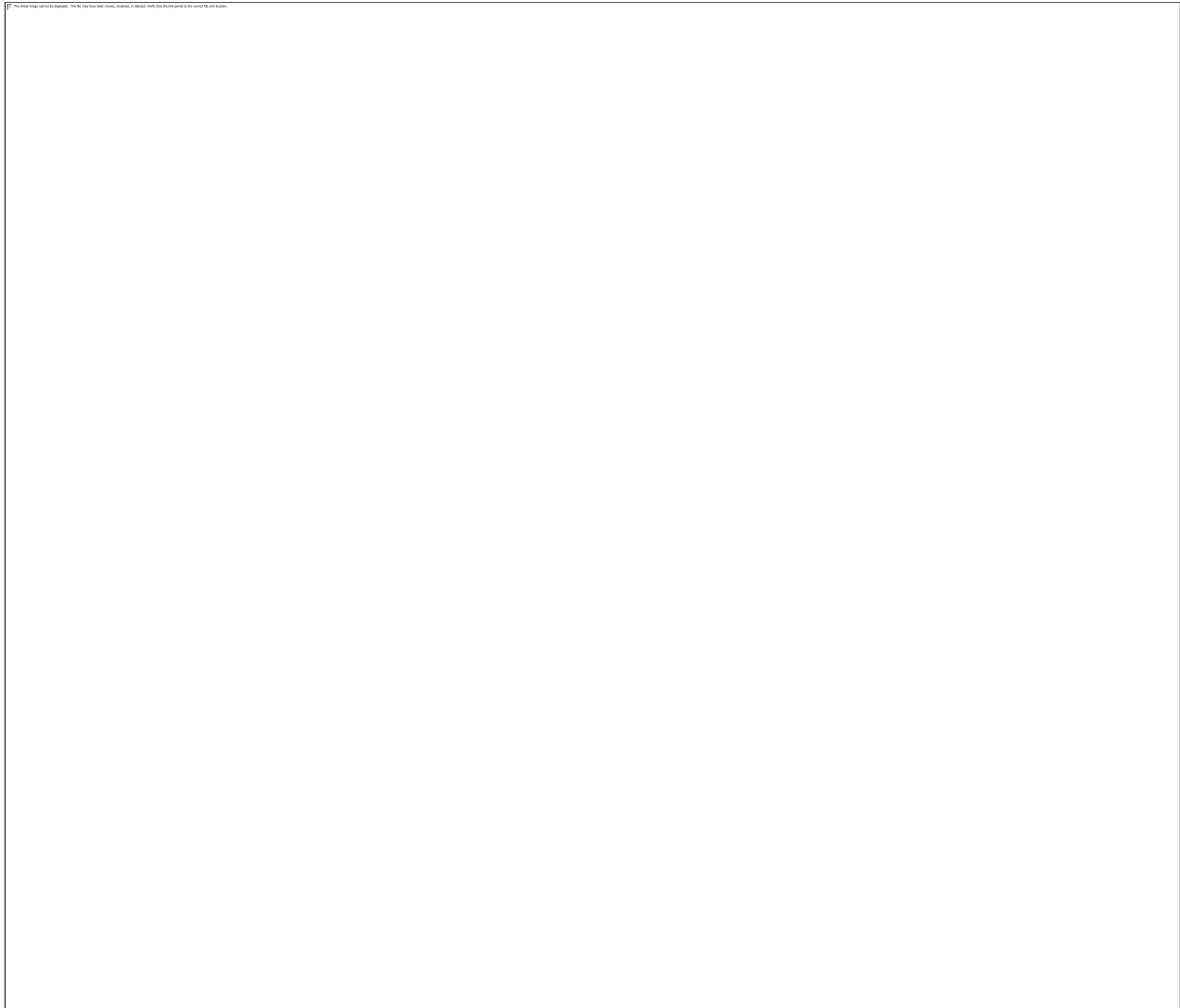
**File summary**

**File Description**

Title	Ollerton Roundabout - impt2+xings 2046+psd+tc2
Location	A614/ A616/ A6075 Ollerton
Site number	
Date	12/12/2017
Version	
Status	(new file)
Identifier	
Client	NCC
Jobnumber	
Enumerator	NCCADMIN\br18
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓
D9	2037 final (incl rats)	AM	ONE HOUR	07:45	09:15	15	✓
D10	2037 final (incl rats)	PM	ONE HOUR	16:45	18:15	15	✓
D11	2037 final (incl rats)	IP	ONE HOUR	12:45	14:15	15	✓
D12	2037 final (incl rats)	OP	ONE HOUR	22:45	00:15	15	✓
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

### Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

## 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.29	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	33	Arm 2

## Arms

### Arms

Arm	Name	Description
1	A616 Ollerton Rd	
2	A614S Old Rufford Road	
3	A6075 Mansfield Road	
4	A616 Worksop Road	
5	A614N Blyth Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.50	8.40	50.0	20.0	60.0	36.0	
2	4.60	8.60	15.0	12.5	60.0	44.0	
3	3.80	8.00	55.0	15.0	60.0	40.0	
4	3.30	8.90	40.0	7.5	60.0	56.0	
5	5.00	8.80	10.0	25.0	60.0	42.0	

### Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
2	4.00	3.00	2.90	3.00	6.00	9.00	7.00
3	4.00	3.00	2.90	3.00	6.00	9.00	7.00

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.649	2261
2	0.569	1888
3	0.607	2063
4	0.529	1799
5	0.595	1970

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	817	100.000
2		ONE HOUR	✓	947	100.000
3		ONE HOUR	✓	475	100.000
4		ONE HOUR	✓	375	100.000
5		ONE HOUR	✓	524	100.000



### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	407	198	142	70
	2	267	15	35	183	447
	3	307	53	0	8	107
	4	231	134	8	0	2
	5	74	363	84	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.50	4.04	1.0	1.5	A	750	1125
2	0.66	6.80	1.9	3.0	A	869	1303
3	0.40	4.57	0.7	3.0	A	436	654
4	0.39	5.55	0.6	3.0	A	344	516
5	0.44	4.95	0.8	2.9	A	481	721

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue	End queue	Delay (s)	Unsignalised level of service
-----	--------------	----------	---------------------------	----------------------------	----------	-----	---------------------	---------------------------------	-------------	-----------	-----------	-------------------------------

	(PCU/hr)	Arrivals (PCU)			(PCU/hr)				e (PCU)	e (PCU)		
1	615	154	495		1940	0.317	613	659	0.0	0.5	2.710	A
2	713	178	379	0.00	1672	0.426	710	729	0.0	0.7	3.730	A
3	358	89	845	0.00	1551	0.231	356	244	0.0	0.3	3.012	A
4	282	71	950		1296	0.218	281	252	0.0	0.3	3.543	A
5	394	99	761		1516	0.260	393	469	0.0	0.3	3.200	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	593		1877	0.391	734	789	0.5	0.6	3.148	A
2	851	213	454	0.00	1630	0.522	850	873	0.7	1.1	4.606	A
3	427	107	1012	0.00	1450	0.295	427	292	0.3	0.4	3.517	A
4	337	84	1137		1197	0.282	337	302	0.3	0.4	4.180	A
5	471	118	911		1427	0.330	471	562	0.3	0.5	3.761	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	725		1791	0.502	898	965	0.6	1.0	4.027	A
2	1043	261	555	0.00	1572	0.663	1039	1068	1.1	1.9	6.712	A
3	523	131	1237	0.00	1313	0.398	522	357	0.4	0.7	4.547	A
4	413	103	1390		1063	0.388	412	369	0.4	0.6	5.519	A
5	577	144	1115		1306	0.442	576	687	0.5	0.8	4.922	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	727		1790	0.503	900	968	1.0	1.0	4.044	A
2	1043	261	556	0.00	1572	0.663	1043	1070	1.9	1.9	6.801	A
3	523	131	1241	0.00	1311	0.399	523	358	0.7	0.7	4.570	A
4	413	103	1394		1061	0.389	413	370	0.6	0.6	5.551	A
5	577	144	1117		1304	0.442	577	689	0.8	0.8	4.948	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	595		1875	0.392	736	793	1.0	0.6	3.165	A
2	851	213	455	0.00	1629	0.523	855	876	1.9	1.1	4.669	A
3	427	107	1017	0.00	1446	0.295	428	293	0.7	0.4	3.539	A
4	337	84	1142		1195	0.282	338	303	0.6	0.4	4.206	A
5	471	118	915		1425	0.331	472	565	0.8	0.5	3.785	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	615	154	498		1938	0.317	616	663	0.6	0.5	2.725	A
2	713	178	381	0.00	1672	0.427	714	733	1.1	0.7	3.768	A
3	358	89	850	0.00	1548	0.231	358	245	0.4	0.3	3.027	A
4	282	71	955		1294	0.218	283	253	0.4	0.3	3.564	A
5	394	99	765		1514	0.261	395	472	0.5	0.4	3.218	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2	0.74	0.55	1.00	1.40	1.45			N/A	N/A
3	0.30	0.00	0.00	0.30	0.30			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.64	0.08	0.78	1.36	1.43			N/A	N/A
2	1.08	0.06	0.76	2.17	2.99			N/A	N/A
3	0.42	0.00	0.00	0.42	0.42			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A
5	0.49	0.00	0.00	0.49	0.49			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.00	0.03	0.26	1.00	1.00			N/A	N/A
2	1.93	0.03	0.27	1.93	1.93			N/A	N/A
3	0.66	0.03	0.25	0.66	0.66			N/A	N/A
4	0.63	0.03	0.25	0.63	0.63			N/A	N/A
5	0.78	0.03	0.25	0.78	0.78			N/A	N/A

### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.01	0.03	0.27	1.01	1.35			N/A	N/A
2	1.95	0.03	0.27	1.95	1.95			N/A	N/A
3	0.66	0.03	0.29	1.28	2.98			N/A	N/A
4	0.63	0.03	0.30	1.38	2.96			N/A	N/A
5	0.79	0.03	0.28	0.79	2.91			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.65	0.55	1.00	1.40	1.45			N/A	N/A
2	1.11	0.11	1.02	1.77	2.15			N/A	N/A
3	0.42	0.00	0.00	0.42	0.42			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A
5	0.50	0.00	0.00	0.50	0.50			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2	0.75	0.05	0.59	1.27	1.78			N/A	N/A
3	0.30	0.00	0.00	0.30	0.30			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

## 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.85	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	25	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1145	100.000
2		ONE HOUR	✓	781	100.000
3		ONE HOUR	✓	423	100.000
4		ONE HOUR	✓	315	100.000
5		ONE HOUR	✓	546	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	426	372	281	63
	2	154	3	56	165	403
	3	283	50	0	11	79
	4	171	132	8	0	4
	5	69	381	88	7	1

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.71	6.89	2.4	4.2	A	1051	1576
2	0.63	7.02	1.7	2.0	A	717	1075
3	0.35	4.11	0.5	2.4	A	388	582
4	0.29	4.25	0.4	1.5	A	289	434
5	0.42	4.28	0.7	2.9	A	501	752

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	503		1935	0.446	859	510	0.0	0.8	3.336	A
2	588	147	617	0.00	1537	0.383	586	744	0.0	0.6	3.775	A
3	318	80	810	0.00	1572	0.203	317	393	0.0	0.3	2.866	A
4	237	59	779		1386	0.171	236	348	0.0	0.2	3.129	A
5	411	103	603		1611	0.255	410	412	0.0	0.3	2.995	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	602		1871	0.550	1028	611	0.8	1.2	4.261	A
2	702	176	739	0.00	1468	0.478	701	891	0.6	0.9	4.688	A
3	380	95	969	0.00	1475	0.258	380	470	0.3	0.3	3.286	A
4	283	71	933		1305	0.217	283	416	0.2	0.3	3.521	A

5	491	123	722		1540	0.319	490	494	0.3	0.5	3.428	A
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#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	737		1783	0.707	1256	747	1.2	2.4	6.769	A
2	860	215	903	0.00	1374	0.626	857	1090	0.9	1.6	6.923	A
3	466	116	1185	0.00	1344	0.346	465	575	0.3	0.5	4.090	A
4	347	87	1141		1195	0.290	346	509	0.3	0.4	4.238	A
5	601	150	884		1444	0.416	600	604	0.5	0.7	4.264	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	738		1782	0.707	1261	749	2.4	2.4	6.892	A
2	860	215	906	0.00	1372	0.627	860	1092	1.6	1.7	7.019	A
3	466	116	1189	0.00	1342	0.347	466	577	0.5	0.5	4.108	A
4	347	87	1144		1194	0.291	347	511	0.4	0.4	4.251	A
5	601	150	885		1443	0.417	601	606	0.7	0.7	4.277	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	603		1870	0.551	1034	613	2.4	1.2	4.331	A
2	702	176	743	0.00	1465	0.479	705	894	1.7	0.9	4.752	A
3	380	95	975	0.00	1472	0.258	381	473	0.5	0.4	3.304	A
4	283	71	937		1303	0.217	284	419	0.4	0.3	3.535	A
5	491	123	724		1538	0.319	492	496	0.7	0.5	3.444	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	505		1933	0.446	864	513	1.2	0.8	3.372	A
2	588	147	621	0.00	1535	0.383	589	748	0.9	0.6	3.813	A
3	318	80	815	0.00	1569	0.203	319	395	0.4	0.3	2.879	A



4	237	59	784		1384	0.17 1	237	350	0.3	0.2	3.139	A
5	411	103	606		1609	0.25 6	412	415	0.5	0.3	3.009	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.55	1.00	1.40	1.45			N/A	N/A
2	0.62	0.55	1.00	1.40	1.45			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A
4	0.21	0.00	0.00	0.21	0.21			N/A	N/A
5	0.34	0.00	0.00	0.34	0.34			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.21	0.05	0.55	2.83	4.21			N/A	N/A
2	0.91	0.07	0.80	1.58	1.95			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.47	0.00	0.00	0.47	0.47			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.35	0.03	0.27	2.35	3.29			N/A	N/A
2	1.64	0.03	0.27	1.64	1.64			N/A	N/A
3	0.53	0.03	0.25	0.53	0.53			N/A	N/A
4	0.41	0.03	0.25	0.46	0.48			N/A	N/A
5	0.71	0.03	0.25	0.71	0.71			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.38	0.03	0.27	2.38	2.38			N/A	N/A
2	1.66	0.03	0.27	1.66	1.66			N/A	N/A
3	0.53	0.03	0.31	1.46	2.43			N/A	N/A
4	0.41	0.03	0.33	1.32	1.45			N/A	N/A
5	0.71	0.03	0.28	0.95	2.86			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.24	0.10	1.05	2.18	2.87			N/A	N/A
2	0.93	0.13	0.95	1.24	1.66			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.47	0.00	0.00	0.47	0.47			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.81	0.05	0.49	1.64	2.31			N/A	N/A
2	0.63	0.05	0.53	1.07	1.07			N/A	N/A

3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.21	0.00	0.00	0.21	0.21			N/A	N/A
5	0.34	0.00	0.00	0.34	0.34			N/A	N/A

## 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.61	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	70	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	725	100.000
2		ONE HOUR	✓	682	100.000
3		ONE HOUR	✓	334	100.000

4		ONE HOUR	✓	232	100.000
5		ONE HOUR	✓	399	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	302	240	130	52
	2	247	2	42	107	284
	3	216	51	0	12	55
	4	125	89	11	0	7
	5	58	281	55	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.42	3.24	0.7	2.6	A	665	998
2	0.48	4.35	0.9	1.8	A	626	939
3	0.24	3.15	0.3	1.3	A	306	460
4	0.20	3.55	0.3	0.8	A	213	319
5	0.30	3.45	0.4	1.6	A	366	549

### Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	371		2021	0.270	544	486	0.0	0.4	2.436	A
2	513	128	371	0.00	1677	0.306	512	544	0.0	0.4	3.085	A
3	251	63	621	0.00	1686	0.149	251	261	0.0	0.2	2.506	A
4	175	44	681		1438	0.121	174	191	0.0	0.1	2.846	A
5	300	75	557		1638	0.183	299	299	0.0	0.2	2.688	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	163	444		1973	0.330	651	581	0.4	0.5	2.723	A
2	613	153	444	0.00	1636	0.375	612	651	0.4	0.6	3.517	A
3	300	75	744	0.00	1612	0.186	300	313	0.2	0.2	2.743	A
4	209	52	816		1367	0.153	208	228	0.1	0.2	3.106	A
5	359	90	666		1573	0.228	358	357	0.2	0.3	2.964	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	543		1909	0.418	797	711	0.5	0.7	3.236	A
2	751	188	543	0.00	1579	0.476	750	797	0.6	0.9	4.335	A
3	368	92	910	0.00	1511	0.243	367	383	0.2	0.3	3.148	A
4	255	64	998		1271	0.201	255	279	0.2	0.3	3.545	A
5	439	110	816		1484	0.296	439	438	0.3	0.4	3.442	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	544		1908	0.418	798	712	0.7	0.7	3.242	A
2	751	188	544	0.00	1579	0.476	751	798	0.9	0.9	4.349	A
3	368	92	912	0.00	1510	0.244	368	383	0.3	0.3	3.150	A
4	255	64	1000		1270	0.201	255	280	0.3	0.3	3.547	A
5	439	110	817		1483	0.296	439	438	0.4	0.4	3.447	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	163	445		1973	0.330	653	583	0.7	0.5	2.730	A
2	613	153	445	0.00	1635	0.375	614	653	0.9	0.6	3.532	A
3	300	75	746	0.00	1611	0.186	301	313	0.3	0.2	2.747	A
4	209	52	818		1366	0.153	209	229	0.3	0.2	3.110	A
5	359	90	668		1572	0.228	359	358	0.4	0.3	2.968	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	372		2020	0.270	546	488	0.5	0.4	2.443	A
2	513	128	372	0.00	1676	0.306	514	546	0.6	0.4	3.098	A
3	251	63	624	0.00	1685	0.149	252	262	0.2	0.2	2.514	A
4	175	44	684		1437	0.122	175	191	0.2	0.1	2.852	A
5	300	75	559		1637	0.184	301	300	0.3	0.2	2.696	A

Queue Variation Results for each time segment

12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2	0.44	0.00	0.00	0.44	0.44			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A
4	0.14	0.00	0.00	0.14	0.14			N/A	N/A
5	0.22	0.00	0.00	0.22	0.22			N/A	N/A

13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2	0.60	0.09	0.80	1.36	1.43			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A
5	0.29	0.00	0.00	0.29	0.29			N/A	N/A

13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.71	0.03	0.25	0.71	0.71			N/A	N/A
2	0.90	0.03	0.25	0.90	0.90			N/A	N/A
3	0.32	0.03	0.25	0.45	0.48			N/A	N/A
4	0.25	0.03	0.25	0.46	0.48			N/A	N/A

5	0.42	0.03	0.25	0.45	0.48			N/A	N/A
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### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.72	0.03	0.28	0.72	2.64			N/A	N/A
2	0.90	0.03	0.27	0.90	1.83			N/A	N/A
3	0.32	0.03	0.32	1.06	1.31			N/A	N/A
4	0.25	0.03	0.27	0.49	0.84			N/A	N/A
5	0.42	0.03	0.32	1.34	1.55			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.50	0.00	0.00	0.50	0.50			N/A	N/A
2	0.60	0.55	1.00	1.40	1.45			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2	0.44	0.00	0.00	0.44	0.44			N/A	N/A
3	0.18	0.00	0.00	0.18	0.18			N/A	N/A
4	0.14	0.00	0.00	0.14	0.14			N/A	N/A
5	0.23	0.00	0.00	0.23	0.23			N/A	N/A

# 2023, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.88	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	71	100.000
2		ONE HOUR	✓	66	100.000
3		ONE HOUR	✓	32	100.000
4		ONE HOUR	✓	23	100.000
5		ONE HOUR	✓	39	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	30	23	13	5
	2	24	0	4	10	28
	3	21	5	0	1	5
	4	12	9	1	0	1
	5	6	27	5	1	0

## Vehicle Mix



## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.67	0.0	0.5	A	65	98
2	0.04	2.02	0.0	0.5	A	61	91
3	0.02	1.89	0.0	0.5	A	29	44
4	0.01	2.09	0.0	0.5	A	21	32
5	0.02	1.91	0.0	0.5	A	36	54

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36		2238	0.024	53	47	0.0	0.0	1.647	A
2	50	12	36	0.00	1868	0.027	50	53	0.0	0.0	1.979	A
3	24	6	61	0.00	1934	0.012	24	25	0.0	0.0	1.884	A
4	17	4	66		1764	0.010	17	19	0.0	0.0	2.060	A
5	29	7	54		1938	0.015	29	29	0.0	0.0	1.885	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43		2233	0.029	64	57	0.0	0.0	1.658	A
2	59	15	43	0.00	1864	0.032	59	64	0.0	0.0	1.994	A
3	29	7	73	0.00	1934	0.015	29	30	0.0	0.0	1.888	A
4	21	5	79		1757	0.012	21	22	0.0	0.0	2.073	A

5	35	9	65		1931	0.018	35	35	0.0	0.0	1.897	A
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### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53		2227	0.035	78	69	0.0	0.0	1.674	A
2	73	18	53	0.00	1858	0.039	73	78	0.0	0.0	2.016	A
3	35	9	89	0.00	1934	0.018	35	36	0.0	0.0	1.895	A
4	25	6	97		1748	0.014	25	28	0.0	0.0	2.090	A
5	43	11	79		1923	0.022	43	43	0.0	0.0	1.914	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53		2227	0.035	78	69	0.0	0.0	1.674	A
2	73	18	53	0.00	1858	0.039	73	78	0.0	0.0	2.016	A
3	35	9	89	0.00	1934	0.018	35	36	0.0	0.0	1.895	A
4	25	6	97		1748	0.014	25	28	0.0	0.0	2.090	A
5	43	11	79		1923	0.022	43	43	0.0	0.0	1.914	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43		2233	0.029	64	57	0.0	0.0	1.661	A
2	59	15	43	0.00	1864	0.032	59	64	0.0	0.0	1.995	A
3	29	7	73	0.00	1934	0.015	29	30	0.0	0.0	1.888	A
4	21	5	79		1757	0.012	21	22	0.0	0.0	2.074	A
5	35	9	65		1931	0.018	35	35	0.0	0.0	1.900	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36		2238	0.024	53	47	0.0	0.0	1.647	A
2	50	12	36	0.00	1868	0.027	50	53	0.0	0.0	1.980	A
3	24	6	61	0.00	1934	0.012	24	25	0.0	0.0	1.884	A

4	17	4	66		1764	0.01 0	17	19	0.0	0.0	2.062	A
5	29	7	54		1937	0.01 5	29	29	0.0	0.0	1.885	A

### Queue Variation Results for each time segment

#### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.03	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

#### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.46	0.48			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A

3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

## 2037, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.61	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	29	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	848	100.000
2		ONE HOUR	✓	981	100.000
3		ONE HOUR	✓	478	100.000

4		ONE HOUR	✓	381	100.000
5		ONE HOUR	✓	535	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	428	203	145	72
	2	278	16	36	189	462
	3	309	54	0	8	107
	4	233	138	8	0	2
	5	75	373	84	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.53	4.26	1.1	1.5	A	778	1167
2	0.69	7.41	2.2	3.7	A	900	1350
3	0.41	4.74	0.7	3.0	A	439	658
4	0.40	5.78	0.7	3.1	A	350	524
5	0.46	5.13	0.8	2.8	A	491	736

### Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	160	507		1932	0.330	636	671	0.0	0.5	2.775	A
2	739	185	386	0.00	1668	0.443	735	757	0.0	0.8	3.846	A
3	360	90	874	0.00	1533	0.235	359	248	0.0	0.3	3.062	A
4	287	72	973		1284	0.223	286	259	0.0	0.3	3.604	A
5	403	101	777		1507	0.267	401	482	0.0	0.4	3.251	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	762	191	607		1867	0.408	762	803	0.5	0.7	3.254	A
2	882	220	462	0.00	1625	0.543	880	906	0.8	1.2	4.825	A
3	430	107	1046	0.00	1429	0.301	429	297	0.3	0.4	3.599	A
4	343	86	1165		1182	0.290	342	310	0.3	0.4	4.283	A
5	481	120	930		1416	0.340	480	577	0.4	0.5	3.845	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	934	233	743		1779	0.525	932	983	0.7	1.1	4.242	A
2	1080	270	566	0.00	1566	0.690	1076	1109	1.2	2.2	7.288	A
3	526	132	1278	0.00	1288	0.409	525	364	0.4	0.7	4.716	A
4	419	105	1425		1045	0.401	418	379	0.4	0.7	5.737	A
5	589	147	1138		1292	0.456	588	706	0.5	0.8	5.100	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	934	233	744		1778	0.525	934	985	1.1	1.1	4.262	A
2	1080	270	567	0.00	1565	0.690	1080	1111	2.2	2.2	7.410	A
3	526	132	1283	0.00	1285	0.410	526	364	0.7	0.7	4.743	A
4	419	105	1429		1043	0.402	419	380	0.7	0.7	5.775	A
5	589	147	1141		1291	0.456	589	708	0.8	0.8	5.130	A

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	762	191	609		1866	0.409	764	807	1.1	0.7	3.274	A
2	882	220	464	0.00	1624	0.543	886	909	2.2	1.2	4.904	A
3	430	107	1052	0.00	1425	0.301	431	298	0.7	0.4	3.625	A
4	343	86	1171		1179	0.290	344	311	0.7	0.4	4.314	A
5	481	120	934		1413	0.340	482	580	0.8	0.5	3.870	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	160	510		1930	0.331	639	675	0.7	0.5	2.789	A
2	739	185	388	0.00	1667	0.443	740	761	1.2	0.8	3.889	A
3	360	90	879	0.00	1530	0.235	360	250	0.4	0.3	3.080	A
4	287	72	979		1281	0.224	287	260	0.4	0.3	3.627	A
5	403	101	781		1505	0.268	403	485	0.5	0.4	3.272	A

**Queue Variation Results for each time segment**

**07:45 - 08:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2	0.79	0.55	1.00	1.40	1.45			N/A	N/A
3	0.31	0.00	0.00	0.31	0.31			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A
5	0.36	0.00	0.00	0.36	0.36			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.69	0.08	0.78	1.38	1.45			N/A	N/A
2	1.17	0.06	0.72	2.58	3.68			N/A	N/A
3	0.43	0.00	0.00	0.43	0.43			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A
5	0.51	0.05	0.55	1.31	1.41			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.09	0.03	0.26	1.09	1.09			N/A	N/A
2	2.17	0.03	0.27	2.17	3.06			N/A	N/A
3	0.69	0.03	0.25	0.69	0.69			N/A	N/A
4	0.66	0.03	0.25	0.66	0.66			N/A	N/A



5	0.83	0.03	0.25	0.83	0.83			N/A	N/A
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### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.10	0.03	0.27	1.10	1.47			N/A	N/A
2	2.20	0.03	0.27	2.20	2.20			N/A	N/A
3	0.69	0.03	0.29	1.21	3.03			N/A	N/A
4	0.67	0.03	0.29	1.33	3.08			N/A	N/A
5	0.83	0.03	0.28	0.83	2.84			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.70	0.55	1.00	1.40	1.45			N/A	N/A
2	1.20	0.09	1.03	2.04	2.78			N/A	N/A
3	0.43	0.00	0.00	0.43	0.43			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A
5	0.52	0.52	1.00	1.40	1.45			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.50	0.05	0.46	1.28	1.39			N/A	N/A
2	0.80	0.05	0.50	1.59	2.17			N/A	N/A
3	0.31	0.00	0.00	0.31	0.31			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A
5	0.37	0.00	0.00	0.37	0.37			N/A	N/A

## 2037, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	6.04	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	24	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1154	100.000
2		ONE HOUR	✓	802	100.000
3		ONE HOUR	✓	424	100.000
4		ONE HOUR	✓	320	100.000
5		ONE HOUR	✓	553	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	436	372	280	63
	2	161	3	56	169	413
	3	286	49	0	11	78
	4	173	135	8	0	4
	5	69	389	87	7	1

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.72	7.12	2.5	4.4	A	1059	1588
2	0.64	7.33	1.8	2.3	A	736	1104
3	0.35	4.18	0.5	2.5	A	389	584
4	0.30	4.33	0.4	1.6	A	294	440
5	0.42	4.36	0.7	2.8	A	507	761

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	869	217	509		1931	0.450	866	519	0.0	0.8	3.371	A
2	604	151	616	0.00	1538	0.393	601	759	0.0	0.6	3.835	A
3	319	80	825	0.00	1563	0.204	318	392	0.0	0.3	2.889	A
4	241	60	793		1379	0.175	240	350	0.0	0.2	3.159	A
5	416	104	614		1604	0.260	415	419	0.0	0.3	3.024	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1037	259	610		1865	0.556	1036	621	0.8	1.2	4.330	A
2	721	180	737	0.00	1469	0.491	720	909	0.6	1.0	4.798	A
3	381	95	987	0.00	1464	0.260	381	469	0.3	0.4	3.322	A
4	288	72	949		1297	0.222	287	419	0.2	0.3	3.566	A

5	497	124	735		1532	0.324	497	502	0.3	0.5	3.473	A
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### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1271	318	746		1777	0.715	1266	760	1.2	2.4	6.979	A
2	883	221	901	0.00	1375	0.642	880	1111	1.0	1.8	7.217	A
3	467	117	1207	0.00	1331	0.351	466	574	0.4	0.5	4.157	A
4	352	88	1160		1185	0.297	352	512	0.3	0.4	4.319	A
5	609	152	899		1435	0.424	608	613	0.5	0.7	4.349	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1271	318	748		1776	0.715	1270	762	2.4	2.5	7.115	A
2	883	221	904	0.00	1374	0.643	883	1114	1.8	1.8	7.332	A
3	467	117	1211	0.00	1329	0.351	467	576	0.5	0.5	4.177	A
4	352	88	1164		1183	0.298	352	514	0.4	0.4	4.333	A
5	609	152	901		1434	0.425	609	615	0.7	0.7	4.365	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1037	259	612		1864	0.556	1042	624	2.5	1.3	4.404	A
2	721	180	741	0.00	1466	0.492	724	913	1.8	1.0	4.873	A
3	381	95	993	0.00	1461	0.261	382	472	0.5	0.4	3.341	A
4	288	72	954		1294	0.222	288	422	0.4	0.3	3.582	A
5	497	124	737		1531	0.325	498	505	0.7	0.5	3.488	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	869	217	512		1929	0.450	871	522	1.3	0.8	3.406	A
2	604	151	619	0.00	1536	0.393	605	763	1.0	0.7	3.875	A
3	319	80	830	0.00	1560	0.205	320	394	0.4	0.3	2.903	A

4	241	60	797		1377	0.175	241	352	0.3	0.2	3.172	A
5	416	104	617		1603	0.260	417	422	0.5	0.4	3.036	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.81	0.55	1.00	1.40	1.45			N/A	N/A
2	0.64	0.55	1.00	1.40	1.45			N/A	N/A
3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.21	0.00	0.00	0.21	0.21			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.24	0.05	0.52	2.92	4.43			N/A	N/A
2	0.95	0.07	0.79	1.74	2.31			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A
5	0.48	0.00	0.00	0.48	0.48			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.44	0.03	0.27	2.44	3.98			N/A	N/A
2	1.75	0.03	0.27	1.75	1.75			N/A	N/A
3	0.54	0.03	0.25	0.54	0.54			N/A	N/A
4	0.42	0.03	0.25	0.46	0.48			N/A	N/A
5	0.73	0.03	0.25	0.73	0.73			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.48	0.03	0.27	2.48	2.48			N/A	N/A
2	1.78	0.03	0.27	1.78	1.78			N/A	N/A
3	0.54	0.03	0.31	1.46	2.49			N/A	N/A
4	0.42	0.03	0.32	1.35	1.58			N/A	N/A
5	0.74	0.03	0.28	0.86	2.83			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.27	0.09	1.04	2.35	3.02			N/A	N/A
2	0.98	0.11	0.96	1.48	1.82			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A
5	0.48	0.00	0.00	0.48	0.48			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.82	0.05	0.48	1.72	2.50			N/A	N/A
2	0.65	0.05	0.51	1.43	1.43			N/A	N/A

3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.21	0.00	0.00	0.21	0.21			N/A	N/A
5	0.35	0.00	0.00	0.35	0.35			N/A	N/A

## 2037, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.69	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	66	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	739	100.000
2		ONE HOUR	✓	701	100.000
3		ONE HOUR	✓	336	100.000

4		ONE HOUR	✓	237	100.000
5		ONE HOUR	✓	408	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	313	242	131	52
	2	256	2	43	109	291
	3	218	51	0	12	55
	4	127	92	11	0	7
	5	59	289	55	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.43	3.31	0.7	2.5	A	678	1017
2	0.49	4.47	1.0	1.6	A	643	965
3	0.25	3.19	0.3	1.3	A	308	462
4	0.21	3.60	0.3	1.0	A	217	326
5	0.31	3.52	0.4	1.7	A	374	562

### Main Results for each time segment



**12:45 - 13:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	139	379		2015	0.276	555	496	0.0	0.4	2.463	A
2	528	132	373	0.00	1676	0.315	526	561	0.0	0.5	3.125	A
3	253	63	636	0.00	1678	0.151	252	263	0.0	0.2	2.524	A
4	178	45	695		1431	0.125	178	193	0.0	0.1	2.870	A
5	307	77	569		1631	0.188	306	304	0.0	0.2	2.716	A

**13:00 - 13:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	454		1967	0.338	664	594	0.4	0.5	2.761	A
2	630	158	446	0.00	1634	0.386	630	671	0.5	0.6	3.582	A
3	302	76	761	0.00	1602	0.189	302	315	0.2	0.2	2.769	A
4	213	53	832		1359	0.157	213	231	0.1	0.2	3.141	A
5	367	92	681		1564	0.234	366	364	0.2	0.3	3.005	A

**13:15 - 13:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	814	203	555		1901	0.428	813	727	0.5	0.7	3.305	A
2	772	193	547	0.00	1577	0.489	771	822	0.6	0.9	4.456	A
3	370	92	931	0.00	1498	0.247	370	386	0.2	0.3	3.189	A
4	261	65	1018		1260	0.207	261	283	0.2	0.3	3.602	A
5	449	112	833		1473	0.305	449	445	0.3	0.4	3.511	A

**13:30 - 13:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	814	203	556		1900	0.428	814	728	0.7	0.7	3.312	A
2	772	193	547	0.00	1577	0.490	772	822	0.9	1.0	4.472	A
3	370	92	933	0.00	1498	0.247	370	386	0.3	0.3	3.191	A
4	261	65	1020		1259	0.207	261	283	0.3	0.3	3.604	A
5	449	112	835		1473	0.305	449	446	0.4	0.4	3.516	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	455		1966	0.338	665	595	0.7	0.5	2.771	A
2	630	158	447	0.00	1634	0.386	631	672	1.0	0.6	3.599	A
3	302	76	763	0.00	1600	0.189	302	316	0.3	0.2	2.775	A
4	213	53	834		1358	0.157	213	231	0.3	0.2	3.148	A
5	367	92	682		1563	0.235	367	365	0.4	0.3	3.010	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	139	381		2014	0.276	557	498	0.5	0.4	2.470	A
2	528	132	375	0.00	1675	0.315	528	563	0.6	0.5	3.140	A
3	253	63	638	0.00	1676	0.151	253	265	0.2	0.2	2.532	A
4	178	45	698		1430	0.125	179	194	0.2	0.1	2.879	A
5	307	77	571		1630	0.188	307	305	0.3	0.2	2.725	A

Queue Variation Results for each time segment

12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3	0.18	0.00	0.00	0.18	0.18			N/A	N/A
4	0.14	0.00	0.00	0.14	0.14			N/A	N/A
5	0.23	0.00	0.00	0.23	0.23			N/A	N/A

13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.51	0.51	1.00	1.40	1.45			N/A	N/A
2	0.62	0.09	0.81	1.36	1.43			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.19	0.00	0.00	0.19	0.19			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.74	0.03	0.25	0.74	0.74			N/A	N/A
2	0.95	0.03	0.26	0.95	0.95			N/A	N/A
3	0.33	0.03	0.25	0.45	0.48			N/A	N/A
4	0.26	0.03	0.25	0.46	0.48			N/A	N/A

5	0.44	0.03	0.25	0.45	0.48			N/A	N/A
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### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.75	0.03	0.28	0.75	2.53			N/A	N/A
2	0.95	0.03	0.27	0.95	1.62			N/A	N/A
3	0.33	0.03	0.32	1.08	1.33			N/A	N/A
4	0.26	0.03	0.28	0.51	1.01			N/A	N/A
5	0.44	0.03	0.32	1.37	1.71			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.51	0.51	1.00	1.40	1.45			N/A	N/A
2	0.63	0.55	1.00	1.40	1.45			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.19	0.00	0.00	0.19	0.19			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.46	0.00	0.00	0.46	0.46			N/A	N/A
3	0.18	0.00	0.00	0.18	0.18			N/A	N/A
4	0.14	0.00	0.00	0.14	0.14			N/A	N/A
5	0.23	0.00	0.00	0.23	0.23			N/A	N/A

# 2037, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.89	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	73	100.000
2		ONE HOUR	✓	68	100.000
3		ONE HOUR	✓	32	100.000
4		ONE HOUR	✓	23	100.000
5		ONE HOUR	✓	40	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	31	24	13	5
	2	25	0	4	11	28
	3	21	5	0	1	5
	4	12	9	1	0	1
	5	6	28	5	1	0

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.68	0.0	0.5	A	67	100
2	0.04	2.02	0.0	0.5	A	62	94
3	0.02	1.89	0.0	0.5	A	29	44
4	0.01	2.09	0.0	0.5	A	21	32
5	0.02	1.92	0.0	0.5	A	37	55

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	55	14	37		2237	0.025	55	48	0.0	0.0	1.648	A
2	51	13	37	0.00	1867	0.027	51	55	0.0	0.0	1.982	A
3	24	6	62	0.00	1934	0.012	24	26	0.0	0.0	1.884	A
4	17	4	67		1763	0.010	17	20	0.0	0.0	2.061	A
5	30	8	55		1937	0.016	30	29	0.0	0.0	1.886	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	66	16	44		2233	0.029	66	58	0.0	0.0	1.660	A
2	61	15	44	0.00	1863	0.033	61	66	0.0	0.0	1.997	A
3	29	7	75	0.00	1934	0.015	29	31	0.0	0.0	1.888	A
4	21	5	80		1756	0.012	21	23	0.0	0.0	2.073	A

5	36	9	66		1931	0.019	36	35	0.0	0.0	1.899	A
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### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	80	20	54		2226	0.036	80	70	0.0	0.0	1.676	A
2	75	19	54	0.00	1857	0.040	75	80	0.0	0.0	2.019	A
3	35	9	91	0.00	1934	0.018	35	37	0.0	0.0	1.895	A
4	25	6	98		1747	0.015	25	29	0.0	0.0	2.090	A
5	44	11	80		1922	0.023	44	43	0.0	0.0	1.916	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	80	20	54		2226	0.036	80	70	0.0	0.0	1.676	A
2	75	19	54	0.00	1857	0.040	75	80	0.0	0.0	2.019	A
3	35	9	91	0.00	1934	0.018	35	37	0.0	0.0	1.895	A
4	25	6	98		1747	0.015	25	29	0.0	0.0	2.090	A
5	44	11	80		1922	0.023	44	43	0.0	0.0	1.916	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	66	16	44		2232	0.029	66	58	0.0	0.0	1.663	A
2	61	15	44	0.00	1863	0.033	61	66	0.0	0.0	1.997	A
3	29	7	75	0.00	1934	0.015	29	31	0.0	0.0	1.888	A
4	21	5	80		1756	0.012	21	23	0.0	0.0	2.075	A
5	36	9	66		1931	0.019	36	35	0.0	0.0	1.899	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	55	14	37		2237	0.025	55	48	0.0	0.0	1.648	A
2	51	13	37	0.00	1867	0.027	51	55	0.0	0.0	1.982	A
3	24	6	63	0.00	1934	0.012	24	26	0.0	0.0	1.884	A

4	17	4	67		1763	0.01 0	17	20	0.0	0.0	2.063	A
5	30	8	55		1937	0.01 6	30	29	0.0	0.0	1.889	A

### Queue Variation Results for each time segment

#### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.03	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

#### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.46	0.48			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

#### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A



3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

## 2037 final (incl rats), AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	11.33	B

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2037 final (incl rats)	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	914	100.000
2		ONE HOUR	✓	1164	100.000
3		ONE HOUR	✓	766	100.000
4		ONE HOUR	✓	400	100.000
5		ONE HOUR	✓	577	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	12.00

3	[ONEHOUR]	10.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	451	246	145	72
	2	357	16	129	192	470
	3	378	207	0	29	152
	4	233	139	26	0	2
	5	75	379	120	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To					
	1	2	3	4	5	
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.62	6.39	1.8	2.1	A	839	1258
2	0.85	17.41	5.9	30.7	C	1068	1602
3	0.69	10.54	2.4	6.7	B	703	1054
4	0.53	9.98	1.2	4.5	A	367	551
5	0.59	8.87	1.5	3.5	A	529	794

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	688	172	667		1828	0.376	685	781	0.0	0.7	3.458	A

2	876	219	459	9.03	1597	0.549	871	893	0.0	1.3	5.415	A
3	577	144	939	7.53	1469	0.393	574	390	0.0	0.7	4.426	A
4	301	75	1237		1144	0.263	300	276	0.0	0.4	4.679	A
5	434	109	1015		1365	0.318	432	521	0.0	0.5	4.236	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	822	205	798		1743	0.471	820	935	0.7	1.0	4.287	A
2	1046	262	549	10.79	1553	0.674	1043	1069	1.3	2.2	7.710	A
3	689	172	1125	8.99	1359	0.507	687	467	0.7	1.1	5.880	A
4	360	90	1481		1015	0.354	359	331	0.4	0.6	6.024	A
5	519	130	1216		1246	0.416	518	624	0.5	0.8	5.430	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1006	252	975		1629	0.618	1003	1140	1.0	1.7	6.300	A
2	1282	320	671	13.21	1506	0.851	1268	1307	2.2	5.6	15.794	C
3	843	211	1369	11.01	1219	0.692	838	571	1.1	2.4	10.279	B
4	440	110	1804		844	0.522	438	403	0.6	1.2	9.693	A
5	635	159	1482		1087	0.584	632	760	0.8	1.5	8.653	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1006	252	980		1625	0.619	1006	1148	1.7	1.8	6.392	A
2	1282	320	674	13.21	1505	0.852	1280	1312	5.6	5.9	17.407	C
3	843	211	1381	11.01	1218	0.692	843	573	2.4	2.4	10.543	B
4	440	110	1818		837	0.526	440	406	1.2	1.2	9.977	A
5	635	159	1492		1081	0.588	635	766	1.5	1.5	8.873	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	822	205	805		1739	0.473	825	946	1.8	1.0	4.349	A
2	1046	262	553	10.79	1574	0.665	1061	1077	5.9	2.2	7.941	A
3	689	172	1142	8.99	1356	0.508	694	472	2.4	1.2	6.024	A
4	360	90	1501		1005	0.358	362	335	1.2	0.6	6.185	A
5	519	130	1230		1237	0.419	522	633	1.5	0.8	5.555	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	688	172	672		1825	0.377	689	788	1.0	0.7	3.492	A
2	876	219	462	9.03	1605	0.546	880	900	2.2	1.3	5.487	A
3	577	144	948	7.53	1467	0.393	578	393	1.2	0.7	4.464	A
4	301	75	1248		1138	0.265	302	279	0.6	0.4	4.740	A
5	434	109	1024		1360	0.319	436	526	0.8	0.5	4.288	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.66	0.61	1.10	1.54	1.60			N/A	N/A
2	1.32	0.61	1.14	1.32	1.67			N/A	N/A
3	0.71	0.61	1.10	1.54	1.60			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A
5	0.51	0.00	0.00	0.51	0.51			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.97	0.07	0.86	1.68	2.10			N/A	N/A
2	2.22	0.06	0.58	5.91	9.31			N/A	N/A
3	1.12	0.07	0.83	2.13	3.02			N/A	N/A
4	0.60	0.07	0.73	1.47	1.56			N/A	N/A
5	0.78	0.09	0.85	1.54	1.62			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.75	0.03	0.29	1.75	1.75			N/A	N/A
2	5.63	0.04	0.39	12.44	30.71			N/A	N/A
3	2.39	0.03	0.31	2.39	6.71			N/A	N/A
4	1.17	0.03	0.29	1.17	1.17			N/A	N/A
5	1.51	0.03	0.29	1.51	1.51			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.75	0.03	0.29	1.75	1.75			N/A	N/A
2	5.63	0.04	0.39	12.44	30.71			N/A	N/A
3	2.39	0.03	0.31	2.39	6.71			N/A	N/A
4	1.17	0.03	0.29	1.17	1.17			N/A	N/A
5	1.51	0.03	0.29	1.51	1.51			N/A	N/A

1	1.77	0.03	0.29	1.77	1.77			N/A	N/A
2	5.94	0.03	0.33	5.94	25.09			N/A	N/A
3	2.43	0.03	0.30	2.43	4.28			N/A	N/A
4	1.20	0.03	0.31	1.20	4.54			N/A	N/A
5	1.54	0.03	0.30	1.54	3.51			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.99	0.16	1.05	1.64	1.64			N/A	N/A
2	2.24	0.05	0.49	6.09	10.24			N/A	N/A
3	1.15	0.08	0.94	2.09	2.89			N/A	N/A
4	0.62	0.07	0.74	1.47	1.56			N/A	N/A
5	0.80	0.10	0.91	1.53	1.61			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.67	0.06	0.61	1.50	1.61			N/A	N/A
2	1.34	0.04	0.37	3.04	6.78			N/A	N/A
3	0.72	0.04	0.45	1.47	2.15			N/A	N/A
4	0.40	0.03	0.34	1.05	1.35			N/A	N/A
5	0.52	0.04	0.44	1.38	1.53			N/A	N/A

## 2037 final (incl rats), PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	15.45	C

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	2	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037 final (incl rats)	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1284	100.000
2		ONE HOUR	✓	1054	100.000
3		ONE HOUR	✓	641	100.000
4		ONE HOUR	✓	343	100.000
5		ONE HOUR	✓	603	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	10.00
3	[ONEHOUR]	15.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	495	437	285	64
	2	259	3	189	175	428
	3	339	155	0	30	117
	4	176	139	24	0	4
	5	71	400	124	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.86	16.32	6.1	31.7	C	1178	1767
2	0.90	27.06	8.2	44.8	D	967	1451
3	0.58	7.68	1.5	2.6	A	588	882
4	0.38	6.34	0.7	3.1	A	315	472
5	0.53	6.75	1.2	2.7	A	553	830

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	967	242	639		1846	0.524	962	635	0.0	1.2	4.454	A
2	794	198	708	7.53	1463	0.543	788	893	0.0	1.3	5.829	A
3	483	121	917	11.29	1469	0.328	480	580	0.0	0.5	3.997	A
4	258	65	1025		1256	0.206	257	372	0.0	0.3	3.958	A
5	454	113	823		1480	0.307	452	460	0.0	0.5	3.845	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1154	289	766		1764	0.654	1151	760	1.2	2.0	6.419	A
2	948	237	847	8.99	1391	0.681	944	1069	1.3	2.3	8.777	A
3	576	144	1097	13.48	1362	0.423	575	694	0.5	0.8	5.029	A
4	308	77	1227		1150	0.268	308	445	0.3	0.4	4.702	A
5	542	136	985		1383	0.392	541	550	0.5	0.7	4.697	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1414	353	936		1654	0.855	1399	926	2.0	5.8	14.724	B
2	1160	290	1031	11.01	1302	0.892	1140	1304	2.3	7.3	22.215	C
3	706	176	1328	16.52	1226	0.575	703	843	0.8	1.5	7.529	A
4	378	94	1491		1010	0.374	377	540	0.4	0.6	6.241	A



5	664	166	1201		1255	0.529	662	667	0.7	1.2	6.656	A
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### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1414	353	939		1652	0.856	1412	933	5.8	6.1	16.322	C
2	1160	290	1040	11.01	1296	0.895	1157	1312	7.3	8.2	27.061	D
3	706	176	1346	16.52	1221	0.578	706	851	1.5	1.5	7.675	A
4	378	94	1505		1003	0.377	378	546	0.6	0.7	6.336	A
5	664	166	1208		1251	0.531	664	675	1.2	1.2	6.749	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1154	289	770		1762	0.655	1170	770	6.1	2.1	6.873	A
2	948	237	860	8.99	1399	0.677	971	1080	8.2	2.4	9.729	A
3	576	144	1125	13.48	1351	0.426	579	706	1.5	0.8	5.142	A
4	308	77	1249		1138	0.271	309	454	0.7	0.4	4.787	A
5	542	136	996		1377	0.394	544	563	1.2	0.7	4.767	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	967	242	644		1844	0.524	970	640	2.1	1.2	4.554	A
2	794	198	714	7.53	1468	0.541	798	900	2.4	1.3	5.944	A
3	483	121	927	11.29	1468	0.329	484	585	0.8	0.5	4.029	A
4	258	65	1035		1251	0.206	259	376	0.4	0.3	3.992	A
5	454	113	829		1476	0.308	455	464	0.7	0.5	3.882	A

## Queue Variation Results for each time segment

### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.20	0.61	1.12	1.58	1.64			N/A	N/A
2	1.29	0.61	1.19	1.39	1.80			N/A	N/A
3	0.53	0.00	0.00	0.53	0.53			N/A	N/A
4	0.28	0.00	0.00	0.28	0.28			N/A	N/A

5	0.48	0.00	0.00	0.48	0.48			N/A	N/A
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### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.04	0.05	0.50	5.45	9.02			N/A	N/A
2	2.28	0.05	0.55	6.13	9.72			N/A	N/A
3	0.80	0.09	0.87	1.55	1.63			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A
5	0.70	0.09	0.87	1.50	1.58			N/A	N/A

### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	5.82	0.04	0.39	12.56	31.75			N/A	N/A
2	7.35	0.05	0.50	20.63	38.30			N/A	N/A
3	1.46	0.03	0.29	1.46	1.46			N/A	N/A
4	0.65	0.03	0.28	0.65	0.65			N/A	N/A
5	1.22	0.03	0.29	1.22	1.22			N/A	N/A

### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	6.15	0.03	0.33	6.15	25.62			N/A	N/A
2	8.20	0.04	0.39	17.30	44.83			N/A	N/A
3	1.49	0.03	0.30	1.49	2.62			N/A	N/A
4	0.66	0.03	0.33	1.60	3.11			N/A	N/A
5	1.23	0.03	0.30	1.23	2.68			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.13	0.05	0.51	5.74	9.41			N/A	N/A
2	2.38	0.05	0.45	6.46	11.61			N/A	N/A
3	0.83	0.13	0.97	1.53	1.61			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A
5	0.72	0.15	0.98	1.52	1.58			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.23	0.04	0.36	2.74	6.17			N/A	N/A
2	1.31	0.03	0.34	2.25	6.64			N/A	N/A
3	0.54	0.05	0.47	1.40	1.53			N/A	N/A
4	0.29	0.00	0.00	0.29	0.29			N/A	N/A
5	0.49	0.04	0.41	1.32	1.48			N/A	N/A

## 2037 final (incl rats), IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.58	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	43	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037 final (incl rats)	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	795	100.000
2		ONE HOUR	✓	820	100.000
3		ONE HOUR	✓	488	100.000
4		ONE HOUR	✓	250	100.000
5		ONE HOUR	✓	436	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	15.00
3	[ONEHOUR]	10.00
4		
5		

## Origin-Destination Data

## Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	334	277	131	52
	2	292	2	119	111	296
	3	254	130	0	24	80
	4	127	93	23	0	7
	5	59	293	79	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.48	3.83	0.9	1.7	A	730	1094
2	0.61	6.07	1.5	1.9	A	752	1129
3	0.37	4.00	0.6	2.8	A	448	672
4	0.24	4.10	0.3	1.3	A	229	344
5	0.35	4.07	0.5	2.5	A	400	600

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	469		1957	0.306	597	550	0.0	0.4	2.643	A
2	617	154	426	11.29	1605	0.385	615	639	0.0	0.6	3.628	A
3	367	92	667	7.53	1629	0.226	366	374	0.0	0.3	2.848	A
4	188	47	830		1359	0.138	188	203	0.0	0.2	3.070	A
5	328	82	692		1558	0.211	327	326	0.0	0.3	2.922	A

**13:00 - 13:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	561		1897	0.377	714	658	0.4	0.6	3.042	A
2	737	184	510	13.48	1556	0.474	736	765	0.6	0.9	4.383	A
3	439	110	799	8.99	1547	0.284	438	447	0.3	0.4	3.246	A
4	225	56	994		1273	0.177	225	243	0.2	0.2	3.433	A
5	392	98	828		1477	0.265	392	391	0.3	0.4	3.317	A

**13:15 - 13:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	875	219	687		1815	0.482	874	805	0.6	0.9	3.819	A
2	903	226	624	16.52	1492	0.605	900	937	0.9	1.5	6.061	A
3	537	134	977	11.01	1437	0.374	537	547	0.4	0.6	3.996	A
4	275	69	1216		1155	0.238	275	298	0.2	0.3	4.087	A
5	480	120	1013		1366	0.351	479	478	0.4	0.5	4.054	A

**13:30 - 13:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	875	219	688		1815	0.482	875	807	0.9	0.9	3.831	A
2	903	226	625	16.52	1496	0.604	903	938	1.5	1.5	6.068	A
3	537	134	980	11.01	1436	0.374	537	548	0.6	0.6	4.003	A
4	275	69	1219		1154	0.239	275	298	0.3	0.3	4.096	A
5	480	120	1015		1365	0.352	480	479	0.5	0.5	4.066	A

**13:45 - 14:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	715	179	563		1896	0.377	716	661	0.9	0.6	3.056	A
2	737	184	512	13.48	1561	0.472	740	767	1.5	0.9	4.393	A
3	439	110	802	8.99	1546	0.284	439	449	0.6	0.4	3.256	A
4	225	56	998		1271	0.177	225	244	0.3	0.2	3.442	A
5	392	98	831		1475	0.266	393	392	0.5	0.4	3.327	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	599	150	471		1955	0.306	599	553	0.6	0.4	2.655	A
2	617	154	428	11.29	1608	0.384	618	642	0.9	0.6	3.642	A
3	367	92	671	7.53	1628	0.226	368	375	0.4	0.3	2.856	A
4	188	47	835		1357	0.139	188	204	0.2	0.2	3.082	A
5	328	82	695		1556	0.211	329	328	0.4	0.3	2.933	A

### Queue Variation Results for each time segment

#### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2	0.62	0.55	1.00	1.40	1.45			N/A	N/A
3	0.29	0.00	0.00	0.29	0.29			N/A	N/A
4	0.16	0.00	0.00	0.16	0.16			N/A	N/A
5	0.27	0.00	0.00	0.27	0.27			N/A	N/A

#### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.60	0.08	0.77	1.35	1.43			N/A	N/A
2	0.89	0.07	0.82	1.49	1.87			N/A	N/A
3	0.39	0.00	0.00	0.39	0.39			N/A	N/A
4	0.21	0.00	0.00	0.21	0.21			N/A	N/A
5	0.36	0.00	0.00	0.36	0.36			N/A	N/A

#### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.92	0.03	0.25	0.92	0.92			N/A	N/A
2	1.51	0.03	0.26	1.51	1.51			N/A	N/A
3	0.59	0.03	0.25	0.59	0.59			N/A	N/A
4	0.31	0.03	0.25	0.46	0.48			N/A	N/A
5	0.54	0.03	0.25	0.54	0.54			N/A	N/A

#### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.93	0.03	0.27	0.93	1.68			N/A	N/A
2	1.51	0.03	0.27	1.51	1.51			N/A	N/A
3	0.60	0.03	0.30	1.36	2.79			N/A	N/A
4	0.31	0.03	0.31	1.04	1.30			N/A	N/A
5	0.54	0.03	0.30	1.43	2.50			N/A	N/A

#### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.61	0.55	1.00	1.40	1.45			N/A	N/A

2	0.90	0.17	0.96	1.42	1.42			N/A	N/A
3	0.40	0.00	0.00	0.40	0.40			N/A	N/A
4	0.22	0.00	0.00	0.22	0.22			N/A	N/A
5	0.36	0.00	0.00	0.36	0.36			N/A	N/A

#### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2	0.63	0.06	0.62	1.37	1.46			N/A	N/A
3	0.29	0.00	0.00	0.29	0.29			N/A	N/A
4	0.16	0.00	0.00	0.16	0.16			N/A	N/A
5	0.27	0.00	0.00	0.27	0.27			N/A	N/A

## 2037 final (incl rats), OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.96	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2037 final (incl rats)	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)



Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	76	100.000
2		ONE HOUR	✓	77	100.000
3		ONE HOUR	✓	48	100.000
4		ONE HOUR	✓	24	100.000
5		ONE HOUR	✓	44	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	20.00
3	[ONEHOUR]	24.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	31	27	13	5
	2	25	0	12	11	29
	3	25	13	0	2	8
	4	12	9	2	0	1
	5	6	29	8	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.69	0.0	0.5	A	70	105
2	0.05	2.15	0.1	0.5	A	71	106
3	0.03	2.04	0.0	0.5	A	44	66
4	0.02	2.10	0.0	0.5	A	22	33
5	0.03	1.93	0.0	0.5	A	40	61

## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	57	14	47		2231	0.026	57	51	0.0	0.0	1.655	A
2	58	14	42	15.06	1799	0.032	58	62	0.0	0.0	2.067	A
3	36	9	63	18.07	1853	0.020	36	37	0.0	0.0	1.980	A
4	18	5	79		1757	0.010	18	20	0.0	0.0	2.069	A
5	33	8	65		1931	0.017	33	32	0.0	0.0	1.895	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	68	17	56		2225	0.031	68	61	0.0	0.0	1.668	A
2	69	17	50	17.98	1783	0.039	69	74	0.0	0.0	2.100	A
3	43	11	75	21.58	1839	0.023	43	44	0.0	0.0	2.003	A
4	22	5	94		1749	0.012	22	24	0.0	0.0	2.083	A
5	40	10	77		1924	0.021	40	39	0.0	0.0	1.909	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	84	21	68		2217	0.038	84	75	0.0	0.0	1.686	A
2	85	21	62	22.02	1762	0.048	85	90	0.0	0.1	2.146	A
3	53	13	92	26.42	1821	0.029	53	54	0.0	0.0	2.036	A
4	26	7	116		1738	0.015	26	30	0.0	0.0	2.103	A
5	48	12	95		1913	0.025	48	47	0.0	0.0	1.930	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	84	21	68		2217	0.038	84	75	0.0	0.0	1.686	A
2	85	21	62	22.02	1762	0.048	85	90	0.1	0.1	2.146	A

3	53	13	92	26.42	1821	0.029	53	54	0.0	0.0	2.036	A
4	26	7	116		1738	0.015	26	30	0.0	0.0	2.103	A
5	48	12	95		1913	0.025	48	47	0.0	0.0	1.930	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	68	17	56		2225	0.031	68	61	0.0	0.0	1.668	A
2	69	17	50	17.98	1783	0.039	69	74	0.1	0.0	2.101	A
3	43	11	76	21.58	1839	0.023	43	44	0.0	0.0	2.005	A
4	22	5	94		1749	0.012	22	24	0.0	0.0	2.085	A
5	40	10	77		1924	0.021	40	39	0.0	0.0	1.912	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	57	14	47		2231	0.026	57	51	0.0	0.0	1.658	A
2	58	14	42	15.06	1799	0.032	58	62	0.0	0.0	2.069	A
3	36	9	63	18.07	1853	0.020	36	37	0.0	0.0	1.980	A
4	18	5	79		1757	0.010	18	20	0.0	0.0	2.070	A
5	33	8	65		1931	0.017	33	32	0.0	0.0	1.898	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.04	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.05	0.03	0.25	0.46	0.48			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

# 2023LG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.81	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	40	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	775	100.000
2		ONE HOUR	✓	900	100.000
3		ONE HOUR	✓	453	100.000
4		ONE HOUR	✓	355	100.000
5		ONE HOUR	✓	496	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	386	189	134	66
	2	253	15	35	173	424
	3	291	53	0	7	102
	4	218	127	8	0	2
	5	70	343	80	3	0

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.47	3.75	0.9	1.9	A	711	1067
2	0.62	6.03	1.6	2.3	A	826	1239
3	0.37	4.23	0.6	2.8	A	416	624
4	0.36	5.09	0.6	2.6	A	326	489
5	0.41	4.55	0.7	2.9	A	455	683

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	472		1955	0.298	582	624	0.0	0.4	2.618	A
2	678	169	360	0.00	1683	0.403	675	693	0.0	0.7	3.562	A
3	341	85	801	0.00	1577	0.216	340	234	0.0	0.3	2.906	A
4	267	67	903		1321	0.202	266	238	0.0	0.3	3.410	A
5	373	93	724		1539	0.243	372	446	0.0	0.3	3.083	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	697	174	565		1895	0.368	696	747	0.4	0.6	3.002	A
2	809	202	431	0.00	1643	0.493	808	830	0.7	1.0	4.305	A
3	407	102	959	0.00	1482	0.275	407	280	0.3	0.4	3.350	A
4	319	80	1081		1227	0.260	319	285	0.3	0.3	3.962	A

5	446	111	866		1454	0.307	445	533	0.3	0.4	3.567	A
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#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	691		1813	0.471	852	914	0.6	0.9	3.742	A
2	991	248	528	0.00	1588	0.624	988	1016	1.0	1.6	5.978	A
3	499	125	1173	0.00	1352	0.369	498	343	0.4	0.6	4.213	A
4	391	98	1323		1099	0.356	390	348	0.3	0.5	5.073	A
5	546	137	1060		1338	0.408	545	652	0.4	0.7	4.532	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	693		1812	0.471	853	916	0.9	0.9	3.754	A
2	991	248	528	0.00	1587	0.624	991	1017	1.6	1.6	6.034	A
3	499	125	1176	0.00	1350	0.369	499	344	0.6	0.6	4.229	A
4	391	98	1326		1097	0.356	391	349	0.5	0.6	5.094	A
5	546	137	1062		1337	0.408	546	654	0.7	0.7	4.550	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	697	174	567		1893	0.368	698	750	0.9	0.6	3.016	A
2	809	202	432	0.00	1642	0.493	812	832	1.6	1.0	4.350	A
3	407	102	963	0.00	1479	0.275	408	281	0.6	0.4	3.363	A
4	319	80	1085		1225	0.261	320	286	0.6	0.4	3.984	A
5	446	111	870		1452	0.307	447	536	0.7	0.4	3.584	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	474		1953	0.299	584	627	0.6	0.4	2.629	A
2	678	169	362	0.00	1682	0.403	679	697	1.0	0.7	3.590	A
3	341	85	805	0.00	1575	0.217	341	235	0.4	0.3	2.921	A



4	267	67	908		1318	0.20 3	268	239	0.4	0.3	3.429	A
5	373	93	728		1537	0.24 3	374	448	0.4	0.3	3.097	A

## Queue Variation Results for each time segment

### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2	0.67	0.55	1.00	1.40	1.45			N/A	N/A
3	0.27	0.00	0.00	0.27	0.27			N/A	N/A
4	0.25	0.00	0.00	0.25	0.25			N/A	N/A
5	0.32	0.00	0.00	0.32	0.32			N/A	N/A

### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.58	0.08	0.75	1.35	1.43			N/A	N/A
2	0.96	0.07	0.81	1.74	2.29			N/A	N/A
3	0.38	0.00	0.00	0.38	0.38			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A
5	0.44	0.00	0.00	0.44	0.44			N/A	N/A

### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.88	0.03	0.25	0.88	0.88			N/A	N/A
2	1.63	0.03	0.26	1.63	1.63			N/A	N/A
3	0.58	0.03	0.25	0.58	0.58			N/A	N/A
4	0.55	0.03	0.25	0.55	0.55			N/A	N/A
5	0.68	0.03	0.25	0.68	0.68			N/A	N/A

### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.89	0.03	0.27	0.89	1.88			N/A	N/A
2	1.65	0.03	0.26	1.65	1.65			N/A	N/A
3	0.58	0.03	0.30	1.42	2.75			N/A	N/A
4	0.55	0.03	0.30	1.45	2.56			N/A	N/A
5	0.69	0.03	0.29	1.13	2.93			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.59	0.55	1.00	1.40	1.45			N/A	N/A
2	0.98	0.16	0.99	1.32	1.70			N/A	N/A
3	0.38	0.00	0.00	0.38	0.38			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A
5	0.45	0.00	0.00	0.45	0.45			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2	0.68	0.06	0.66	1.14	1.14			N/A	N/A

3	0.28	0.00	0.00	0.28	0.28			N/A	N/A
4	0.26	0.00	0.00	0.26	0.26			N/A	N/A
5	0.32	0.00	0.00	0.32	0.32			N/A	N/A

## 2023LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.13	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	33	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1080	100.000
2		ONE HOUR	✓	739	100.000
3		ONE HOUR	✓	401	100.000

4		ONE HOUR	✓	298	100.000
5		ONE HOUR	✓	514	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	402	351	264	60
	2	146	3	55	155	380
	3	267	48	0	11	75
	4	161	125	8	0	4
	5	65	359	83	6	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.66	5.80	1.9	3.0	A	991	1487
2	0.58	6.12	1.4	1.5	A	678	1017
3	0.32	3.82	0.5	1.9	A	368	552
4	0.27	4.01	0.4	1.5	A	273	410
5	0.38	3.98	0.6	2.8	A	472	707

### Main Results for each time segment

**16:45 - 17:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	475		1953	0.416	810	482	0.0	0.7	3.142	A
2	556	139	582	0.00	1557	0.357	554	703	0.0	0.6	3.583	A
3	302	75	763	0.00	1600	0.189	301	373	0.0	0.2	2.770	A
4	224	56	737		1409	0.159	224	327	0.0	0.2	3.036	A
5	387	97	571		1630	0.237	386	390	0.0	0.3	2.891	A

**17:00 - 17:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	569		1892	0.513	970	577	0.7	1.0	3.896	A
2	664	166	697	0.00	1492	0.445	663	841	0.6	0.8	4.341	A
3	360	90	914	0.00	1509	0.239	360	446	0.2	0.3	3.134	A
4	268	67	883		1332	0.201	268	391	0.2	0.3	3.382	A
5	462	116	683		1563	0.296	462	467	0.3	0.4	3.267	A

**17:15 - 17:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	696		1810	0.657	1186	706	1.0	1.9	5.740	A
2	814	203	852	0.00	1403	0.580	811	1030	0.8	1.4	6.060	A
3	442	110	1118	0.00	1385	0.319	441	546	0.3	0.5	3.810	A
4	328	82	1080		1227	0.267	328	479	0.3	0.4	3.999	A
5	566	141	836		1472	0.385	565	571	0.4	0.6	3.968	A

**17:30 - 17:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	697		1809	0.657	1189	707	1.9	1.9	5.805	A
2	814	203	854	0.00	1402	0.580	814	1032	1.4	1.4	6.119	A
3	442	110	1121	0.00	1383	0.319	442	547	0.5	0.5	3.821	A
4	328	82	1082		1226	0.268	328	480	0.4	0.4	4.008	A
5	566	141	838		1471	0.385	566	572	0.6	0.6	3.977	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	570		1891	0.513	974	578	1.9	1.1	3.939	A
2	664	166	700	0.00	1490	0.446	667	844	1.4	0.8	4.386	A
3	360	90	918	0.00	1506	0.239	361	448	0.5	0.3	3.144	A
4	268	67	886		1330	0.201	268	393	0.4	0.3	3.394	A
5	462	116	685		1562	0.296	463	469	0.6	0.4	3.278	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	477		1952	0.417	814	484	1.1	0.7	3.169	A
2	556	139	585	0.00	1555	0.358	557	706	0.8	0.6	3.610	A
3	302	75	768	0.00	1597	0.189	302	375	0.3	0.2	2.779	A
4	224	56	741		1407	0.159	225	329	0.3	0.2	3.047	A
5	387	97	574		1628	0.238	387	392	0.4	0.3	2.901	A

## Queue Variation Results for each time segment

### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.71	0.55	1.00	1.40	1.45			N/A	N/A
2	0.55	0.55	1.00	1.40	1.45			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.19	0.00	0.00	0.19	0.19			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.04	0.06	0.69	2.12	2.99			N/A	N/A
2	0.80	0.08	0.81	1.49	1.50			N/A	N/A
3	0.31	0.00	0.00	0.31	0.31			N/A	N/A
4	0.25	0.00	0.00	0.25	0.25			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.88	0.03	0.27	1.88	1.88			N/A	N/A
2	1.36	0.03	0.26	1.36	1.36			N/A	N/A
3	0.47	0.03	0.25	0.47	0.48			N/A	N/A
4	0.36	0.03	0.25	0.46	0.48			N/A	N/A

5	0.62	0.03	0.25	0.62	0.62			N/A	N/A
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### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.90	0.03	0.26	1.90	1.90			N/A	N/A
2	1.37	0.03	0.27	1.37	1.37			N/A	N/A
3	0.47	0.03	0.32	1.42	1.89			N/A	N/A
4	0.36	0.03	0.33	1.21	1.47			N/A	N/A
5	0.62	0.03	0.29	1.26	2.84			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.06	0.15	1.03	1.60	1.88			N/A	N/A
2	0.81	0.18	0.93	1.41	1.47			N/A	N/A
3	0.32	0.00	0.00	0.32	0.32			N/A	N/A
4	0.25	0.00	0.00	0.25	0.25			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.72	0.06	0.64	1.49	1.55			N/A	N/A
2	0.56	0.05	0.55	1.32	1.41			N/A	N/A
3	0.23	0.00	0.00	0.23	0.23			N/A	N/A
4	0.19	0.00	0.00	0.19	0.19			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

# 2023LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.43	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	79	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	686	100.000
2		ONE HOUR	✓	647	100.000
3		ONE HOUR	✓	316	100.000
4		ONE HOUR	✓	221	100.000
5		ONE HOUR	✓	378	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	286	227	123	49
	2	234	2	41	101	269
	3	204	49	0	11	52
	4	119	85	10	0	7
	5	55	266	52	5	0

## Vehicle Mix



## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.39	3.07	0.6	2.8	A	629	944
2	0.45	4.08	0.8	2.3	A	594	891
3	0.23	3.02	0.3	1.2	A	290	435
4	0.19	3.41	0.2	0.5	A	203	304
5	0.28	3.30	0.4	1.1	A	347	520

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	352		2033	0.254	515	460	0.0	0.3	2.370	A
2	487	122	351	0.00	1689	0.288	485	517	0.0	0.4	2.988	A
3	238	59	588	0.00	1706	0.139	237	248	0.0	0.2	2.449	A
4	166	42	645		1457	0.114	166	180	0.0	0.1	2.785	A
5	285	71	528		1655	0.172	284	283	0.0	0.2	2.624	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	421		1988	0.310	616	551	0.3	0.4	2.625	A
2	582	145	420	0.00	1649	0.353	581	618	0.4	0.5	3.368	A
3	284	71	704	0.00	1636	0.174	284	296	0.2	0.2	2.662	A
4	199	50	772		1390	0.143	199	216	0.1	0.2	3.020	A

5	340	85	632		1593	0.21 3	340	339	0.2	0.3	2.871	A
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### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	516		1926	0.39 2	755	674	0.4	0.6	3.070	A
2	712	178	514	0.00	1596	0.44 6	711	757	0.5	0.8	4.064	A
3	348	87	862	0.00	1540	0.22 6	348	363	0.2	0.3	3.018	A
4	243	61	946		1298	0.18 7	243	264	0.2	0.2	3.411	A
5	416	104	774		1509	0.27 6	416	415	0.3	0.4	3.291	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	516		1926	0.39 2	755	675	0.6	0.6	3.074	A
2	712	178	514	0.00	1596	0.44 6	712	757	0.8	0.8	4.075	A
3	348	87	863	0.00	1540	0.22 6	348	363	0.3	0.3	3.020	A
4	243	61	947		1298	0.18 7	243	264	0.2	0.2	3.413	A
5	416	104	775		1508	0.27 6	416	415	0.4	0.4	3.295	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	422		1987	0.31 0	617	552	0.6	0.5	2.629	A
2	582	145	420	0.00	1649	0.35 3	583	619	0.8	0.5	3.381	A
3	284	71	706	0.00	1635	0.17 4	284	297	0.3	0.2	2.667	A
4	199	50	774		1389	0.14 3	199	216	0.2	0.2	3.027	A
5	340	85	634		1592	0.21 3	340	339	0.4	0.3	2.875	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	353		2032	0.25 4	517	462	0.5	0.3	2.378	A
2	487	122	352	0.00	1688	0.28 9	488	518	0.5	0.4	3.002	A
3	238	59	591	0.00	1705	0.14 0	238	249	0.2	0.2	2.454	A

4	166	42	648		1456	0.11 4	167	181	0.2	0.1	2.794	A
5	285	71	531		1654	0.17 2	285	284	0.3	0.2	2.631	A

### Queue Variation Results for each time segment

#### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2	0.40	0.00	0.00	0.40	0.40			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A
5	0.21	0.00	0.00	0.21	0.21			N/A	N/A

#### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2	0.54	0.07	0.72	1.34	1.42			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.17	0.00	0.00	0.17	0.17			N/A	N/A
5	0.27	0.00	0.00	0.27	0.27			N/A	N/A

#### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.64	0.03	0.25	0.64	0.64			N/A	N/A
2	0.80	0.03	0.25	0.80	0.80			N/A	N/A
3	0.29	0.03	0.25	0.45	0.48			N/A	N/A
4	0.23	0.03	0.25	0.46	0.48			N/A	N/A
5	0.38	0.03	0.25	0.45	0.48			N/A	N/A

#### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.64	0.03	0.29	1.10	2.77			N/A	N/A
2	0.80	0.03	0.28	0.80	2.29			N/A	N/A
3	0.29	0.03	0.30	0.88	1.20			N/A	N/A
4	0.23	0.03	0.26	0.46	0.49			N/A	N/A
5	0.38	0.03	0.33	1.07	1.07			N/A	N/A

#### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.45	0.00	0.00	0.45	0.45			N/A	N/A
2	0.55	0.55	1.00	1.40	1.45			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.17	0.00	0.00	0.17	0.17			N/A	N/A
5	0.27	0.00	0.00	0.27	0.27			N/A	N/A

#### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2	0.41	0.00	0.00	0.41	0.41			N/A	N/A

3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A
5	0.21	0.00	0.00	0.21	0.21			N/A	N/A

## 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.88	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	67	100.000
2		ONE HOUR	✓	63	100.000
3		ONE HOUR	✓	31	100.000

4		ONE HOUR	✓	22	100.000
5		ONE HOUR	✓	36	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	28	22	12	5
	2	23	0	4	10	26
	3	20	5	0	1	5
	4	12	8	1	0	1
	5	5	26	5	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	1.67	0.0	0.5	A	61	92
2	0.04	2.01	0.0	0.5	A	58	87
3	0.02	1.89	0.0	0.5	A	28	43
4	0.01	2.09	0.0	0.5	A	20	30
5	0.02	1.91	0.0	0.5	A	33	50

### Main Results for each time segment

22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	50	13	34		2239	0.023	50	45	0.0	0.0	1.644	A
2	47	12	34	0.00	1869	0.025	47	50	0.0	0.0	1.976	A
3	23	6	57	0.00	1934	0.012	23	24	0.0	0.0	1.883	A
4	17	4	63		1765	0.009	17	17	0.0	0.0	2.058	A
5	27	7	52		1939	0.014	27	28	0.0	0.0	1.882	A

23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40		2235	0.027	60	54	0.0	0.0	1.654	A
2	57	14	40	0.00	1865	0.030	57	60	0.0	0.0	1.990	A
3	28	7	68	0.00	1934	0.014	28	29	0.0	0.0	1.887	A
4	20	5	75		1759	0.011	20	21	0.0	0.0	2.069	A
5	32	8	62		1933	0.017	32	33	0.0	0.0	1.893	A

23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50		2229	0.033	74	66	0.0	0.0	1.669	A
2	69	17	50	0.00	1860	0.037	69	74	0.0	0.0	2.010	A
3	34	9	84	0.00	1934	0.018	34	35	0.0	0.0	1.893	A
4	24	6	92		1750	0.014	24	25	0.0	0.0	2.085	A
5	40	10	76		1925	0.021	40	41	0.0	0.0	1.908	A

23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50		2229	0.033	74	66	0.0	0.0	1.669	A
2	69	17	50	0.00	1860	0.037	69	74	0.0	0.0	2.010	A
3	34	9	84	0.00	1934	0.018	34	35	0.0	0.0	1.893	A
4	24	6	92		1750	0.014	24	25	0.0	0.0	2.085	A
5	40	10	76		1925	0.021	40	41	0.0	0.0	1.908	A

**23:45 - 00:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40		2235	0.027	60	54	0.0	0.0	1.654	A
2	57	14	40	0.00	1865	0.030	57	60	0.0	0.0	1.990	A
3	28	7	68	0.00	1934	0.014	28	29	0.0	0.0	1.887	A
4	20	5	76		1759	0.011	20	21	0.0	0.0	2.069	A
5	32	8	62		1933	0.017	32	33	0.0	0.0	1.896	A

**00:00 - 00:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	50	13	34		2239	0.023	50	45	0.0	0.0	1.644	A
2	47	12	34	0.00	1869	0.025	47	50	0.0	0.0	1.976	A
3	23	6	57	0.00	1934	0.012	23	24	0.0	0.0	1.883	A
4	17	4	63		1765	0.009	17	17	0.0	0.0	2.058	A
5	27	7	52		1939	0.014	27	28	0.0	0.0	1.882	A

**Queue Variation Results for each time segment**

**22:45 - 23:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.01	0.00	0.00	0.01	0.01			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.03	0.03	0.25	0.45	0.48			N/A	N/A
3	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.46	0.48			N/A	N/A



5	0.02	0.02	0.25	0.45	0.48			N/A	N/A
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### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.63	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	42	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	767	100.000
2		ONE HOUR	✓	887	100.000
3		ONE HOUR	✓	434	100.000
4		ONE HOUR	✓	341	100.000
5		ONE HOUR	✓	482	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	388	184	131	64
	2	251	14	35	170	417
	3	278	52	0	7	97
	4	208	124	7	0	2
	5	67	336	76	3	0

## Vehicle Mix

## Heavy Vehicle Percentages

From	To				
	1	2	3	4	5
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.46	3.67	0.9	2.0	A	704	1056
2	0.61	5.80	1.6	2.0	A	814	1221
3	0.35	4.07	0.5	2.5	A	398	597
4	0.34	4.86	0.5	2.2	A	313	469
5	0.39	4.35	0.6	2.9	A	442	663

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	577	144	459		1963	0.294	576	603	0.0	0.4	2.591	A
2	668	167	349	0.00	1690	0.395	665	686	0.0	0.6	3.506	A
3	327	82	788	0.00	1585	0.206	326	227	0.0	0.3	2.854	A
4	257	64	880		1333	0.193	256	233	0.0	0.2	3.338	A
5	363	91	701		1553	0.234	362	435	0.0	0.3	3.020	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	690	172	550		1905	0.362	689	722	0.4	0.6	2.960	A
2	797	199	418	0.00	1650	0.483	796	821	0.6	0.9	4.209	A
3	390	98	943	0.00	1491	0.262	390	271	0.3	0.4	3.268	A
4	307	77	1053		1242	0.247	306	279	0.2	0.3	3.849	A

5	433	108	839		1470	0.29 5	433	521	0.3	0.4	3.467	A
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**08:15 - 08:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	844	211	673		1825	0.46 3	843	883	0.6	0.9	3.663	A
2	977	244	511	0.00	1597	0.61 1	974	1005	0.9	1.5	5.755	A
3	478	119	1153	0.00	1364	0.35 0	477	332	0.4	0.5	4.057	A
4	375	94	1289		1117	0.33 6	375	342	0.3	0.5	4.847	A
5	531	133	1026		1359	0.39 1	530	637	0.4	0.6	4.339	A

**08:30 - 08:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	844	211	674		1824	0.46 3	844	885	0.9	0.9	3.674	A
2	977	244	512	0.00	1597	0.61 2	977	1006	1.5	1.6	5.804	A
3	478	119	1156	0.00	1362	0.35 1	478	333	0.5	0.5	4.071	A
4	375	94	1291		1115	0.33 7	375	342	0.5	0.5	4.864	A
5	531	133	1028		1357	0.39 1	531	639	0.6	0.6	4.353	A

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	690	172	551		1903	0.36 2	691	724	0.9	0.6	2.970	A
2	797	199	419	0.00	1650	0.48 3	800	823	1.6	0.9	4.249	A
3	390	98	947	0.00	1489	0.26 2	391	272	0.5	0.4	3.279	A
4	307	77	1057		1239	0.24 7	307	280	0.5	0.3	3.866	A
5	433	108	842		1469	0.29 5	434	523	0.6	0.4	3.484	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	577	144	461		1962	0.29 4	578	606	0.6	0.4	2.604	A
2	668	167	350	0.00	1689	0.39 5	669	689	0.9	0.7	3.533	A
3	327	82	792	0.00	1583	0.20 6	327	228	0.4	0.3	2.866	A

4	257	64	884		1331	0.19 3	257	234	0.3	0.2	3.355	A
5	363	91	704		1550	0.23 4	363	437	0.4	0.3	3.032	A

## Queue Variation Results for each time segment

### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2	0.65	0.55	1.00	1.40	1.45			N/A	N/A
3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.24	0.00	0.00	0.24	0.24			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.56	0.07	0.74	1.35	1.42			N/A	N/A
2	0.93	0.07	0.81	1.62	1.98			N/A	N/A
3	0.35	0.00	0.00	0.35	0.35			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.86	0.03	0.25	0.86	0.86			N/A	N/A
2	1.55	0.03	0.26	1.55	1.55			N/A	N/A
3	0.54	0.03	0.25	0.54	0.54			N/A	N/A
4	0.50	0.03	0.25	0.50	0.50			N/A	N/A
5	0.64	0.03	0.25	0.64	0.64			N/A	N/A

### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.86	0.03	0.27	0.86	1.99			N/A	N/A
2	1.56	0.03	0.26	1.56	1.56			N/A	N/A
3	0.54	0.03	0.31	1.45	2.49			N/A	N/A
4	0.51	0.03	0.31	1.45	2.23			N/A	N/A
5	0.64	0.03	0.29	1.27	2.90			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.57	0.55	1.00	1.40	1.45			N/A	N/A
2	0.94	0.19	0.98	1.06	1.55			N/A	N/A
3	0.36	0.00	0.00	0.36	0.36			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2	0.66	0.06	0.67	1.39	1.48			N/A	N/A

3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.24	0.00	0.00	0.24	0.24			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

## 2037LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.80	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	38	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
-----	------------	--------------	--------------	-------------------------	--------------------

1		ONE HOUR	✓	1036	100.000
2		ONE HOUR	✓	726	100.000
3		ONE HOUR	✓	387	100.000
4		ONE HOUR	✓	287	100.000
5		ONE HOUR	✓	498	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	392	334	250	57
	2	146	2	54	152	372
	3	258	47	0	11	71
	4	156	121	7	0	3
	5	62	350	79	6	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.63	5.27	1.7	2.4	A	951	1426
2	0.56	5.74	1.3	1.5	A	666	999
3	0.30	3.68	0.4	1.7	A	355	533
4	0.25	3.89	0.3	1.4	A	263	395
5	0.37	3.84	0.6	2.7	A	457	685



## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	460		1963	0.397	777	469	0.0	0.7	3.031	A
2	547	137	553	0.00	1573	0.347	544	684	0.0	0.5	3.491	A
3	291	73	742	0.00	1613	0.181	290	356	0.0	0.2	2.720	A
4	216	54	718		1419	0.152	215	314	0.0	0.2	2.989	A
5	375	94	555		1639	0.229	374	378	0.0	0.3	2.842	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	931	233	551		1904	0.489	930	561	0.7	1.0	3.692	A
2	653	163	662	0.00	1512	0.432	652	819	0.5	0.8	4.183	A
3	348	87	888	0.00	1525	0.228	348	426	0.2	0.3	3.058	A
4	258	65	859		1344	0.192	258	376	0.2	0.2	3.313	A
5	448	112	665		1574	0.284	447	453	0.3	0.4	3.195	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1141	285	674		1824	0.625	1138	687	1.0	1.6	5.228	A
2	799	200	810	0.00	1427	0.560	797	1002	0.8	1.3	5.695	A
3	426	107	1086	0.00	1404	0.303	426	521	0.3	0.4	3.676	A
4	316	79	1052		1242	0.254	316	460	0.2	0.3	3.882	A
5	548	137	813		1485	0.369	548	554	0.4	0.6	3.835	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1141	285	675		1823	0.626	1141	688	1.6	1.7	5.273	A
2	799	200	811	0.00	1426	0.560	799	1004	1.3	1.3	5.741	A
3	426	107	1089	0.00	1403	0.304	426	522	0.4	0.4	3.685	A
4	316	79	1054		1241	0.255	316	461	0.3	0.3	3.890	A
5	548	137	815		1485	0.369	548	555	0.6	0.6	3.844	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	931	233	552		1903	0.489	934	563	1.7	1.0	3.728	A
2	653	163	664	0.00	1510	0.432	655	822	1.3	0.8	4.219	A
3	348	87	892	0.00	1522	0.229	348	427	0.4	0.3	3.070	A
4	258	65	862		1342	0.192	258	378	0.3	0.2	3.323	A
5	448	112	666		1573	0.285	448	454	0.6	0.4	3.202	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	780	195	462		1961	0.398	781	471	1.0	0.7	3.052	A
2	547	137	556	0.00	1572	0.348	547	687	0.8	0.5	3.519	A
3	291	73	746	0.00	1611	0.181	292	357	0.3	0.2	2.729	A
4	216	54	722		1417	0.152	216	316	0.2	0.2	3.000	A
5	375	94	558		1638	0.229	375	380	0.4	0.3	2.854	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.66	0.55	1.00	1.40	1.45			N/A	N/A
2	0.53	0.53	1.00	1.40	1.45			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A

5	0.30	0.00	0.00	0.30	0.30			N/A	N/A
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**17:00 - 17:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.95	0.06	0.75	1.78	2.44			N/A	N/A
2	0.75	0.08	0.81	1.10	1.10			N/A	N/A
3	0.29	0.00	0.00	0.29	0.29			N/A	N/A
4	0.24	0.00	0.00	0.24	0.24			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

**17:15 - 17:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.64	0.03	0.26	1.64	1.64			N/A	N/A
2	1.26	0.03	0.26	1.26	1.26			N/A	N/A
3	0.43	0.03	0.25	0.45	0.48			N/A	N/A
4	0.34	0.03	0.25	0.46	0.48			N/A	N/A
5	0.58	0.03	0.25	0.58	0.58			N/A	N/A

**17:30 - 17:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.66	0.03	0.26	1.66	1.66			N/A	N/A
2	1.27	0.03	0.27	1.27	1.27			N/A	N/A
3	0.43	0.03	0.32	1.37	1.65			N/A	N/A
4	0.34	0.03	0.32	1.14	1.39			N/A	N/A
5	0.58	0.03	0.30	1.35	2.74			N/A	N/A

**17:45 - 18:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.97	0.21	1.00	1.12	1.58			N/A	N/A
2	0.77	0.22	0.94	1.39	1.45			N/A	N/A
3	0.30	0.00	0.00	0.30	0.30			N/A	N/A
4	0.24	0.00	0.00	0.24	0.24			N/A	N/A
5	0.40	0.00	0.00	0.40	0.40			N/A	N/A

**18:00 - 18:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.66	0.06	0.68	1.39	1.48			N/A	N/A
2	0.54	0.05	0.53	1.31	1.40			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

# 2037LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.33	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	85	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	665	100.000
2		ONE HOUR	✓	633	100.000
3		ONE HOUR	✓	304	100.000
4		ONE HOUR	✓	211	100.000
5		ONE HOUR	✓	365	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
-----	--------------	----------------------------------

1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	282	218	117	47
	2	231	1	41	98	262
	3	196	48	0	11	49
	4	113	82	10	0	6
	5	52	259	49	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.38	2.99	0.6	2.8	A	610	915
2	0.43	3.95	0.8	2.5	A	581	871
3	0.22	2.95	0.3	1.1	A	279	418
4	0.18	3.33	0.2	0.5	A	194	290
5	0.26	3.21	0.4	1.4	A	335	502

### Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	501	125	341		2040	0.245	499	445	0.0	0.3	2.334	A
2	477	119	336	0.00	1697	0.281	475	505	0.0	0.4	2.941	A
3	229	57	572	0.00	1716	0.133	228	239	0.0	0.2	2.417	A
4	159	40	627		1467	0.108	158	173	0.0	0.1	2.751	A
5	275	69	512		1665	0.165	274	273	0.0	0.2	2.587	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	149	408		1996	0.299	597	533	0.3	0.4	2.573	A
2	569	142	402	0.00	1660	0.343	569	604	0.4	0.5	3.297	A
3	273	68	684	0.00	1648	0.166	273	286	0.2	0.2	2.618	A
4	190	47	750		1402	0.135	190	208	0.1	0.2	2.968	A
5	328	82	613		1605	0.204	328	327	0.2	0.3	2.818	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	732	183	499		1937	0.378	731	652	0.4	0.6	2.984	A
2	697	174	492	0.00	1608	0.433	696	739	0.5	0.8	3.942	A
3	335	84	838	0.00	1555	0.215	334	350	0.2	0.3	2.949	A
4	232	58	918		1313	0.177	232	254	0.2	0.2	3.330	A
5	402	100	750		1523	0.264	401	400	0.3	0.4	3.209	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	732	183	500		1937	0.378	732	653	0.6	0.6	2.987	A
2	697	174	492	0.00	1608	0.433	697	740	0.8	0.8	3.950	A
3	335	84	839	0.00	1554	0.215	335	350	0.3	0.3	2.951	A

4	232	58	919		1312	0.177	232	254	0.2	0.2	3.332	A
5	402	100	751		1523	0.264	402	401	0.4	0.4	3.211	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	598	149	409		1996	0.300	599	534	0.6	0.4	2.576	A
2	569	142	402	0.00	1659	0.343	570	605	0.8	0.5	3.307	A
3	273	68	686	0.00	1647	0.166	274	286	0.3	0.2	2.621	A
4	190	47	752		1401	0.135	190	208	0.2	0.2	2.974	A
5	328	82	614		1604	0.205	329	328	0.4	0.3	2.824	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	501	125	342		2039	0.246	501	447	0.4	0.3	2.342	A
2	477	119	337	0.00	1696	0.281	477	506	0.5	0.4	2.952	A
3	229	57	574	0.00	1715	0.133	229	240	0.2	0.2	2.424	A
4	159	40	629		1466	0.108	159	174	0.2	0.1	2.754	A
5	275	69	514		1664	0.165	275	274	0.3	0.2	2.592	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2	0.39	0.00	0.00	0.39	0.39			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A
5	0.20	0.00	0.00	0.20	0.20			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2	0.52	0.52	1.00	1.40	1.45			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.16	0.00	0.00	0.16	0.16			N/A	N/A



5	0.26	0.00	0.00	0.26	0.26			N/A	N/A
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### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.60	0.03	0.25	0.60	0.60			N/A	N/A
2	0.76	0.03	0.25	0.76	0.76			N/A	N/A
3	0.27	0.03	0.25	0.45	0.48			N/A	N/A
4	0.21	0.03	0.25	0.46	0.48			N/A	N/A
5	0.36	0.03	0.25	0.45	0.48			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.61	0.03	0.29	1.25	2.77			N/A	N/A
2	0.76	0.03	0.28	0.76	2.47			N/A	N/A
3	0.27	0.03	0.28	0.66	1.08			N/A	N/A
4	0.21	0.03	0.25	0.45	0.48			N/A	N/A
5	0.36	0.03	0.33	1.19	1.44			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2	0.52	0.52	1.00	1.40	1.45			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.16	0.00	0.00	0.16	0.16			N/A	N/A
5	0.26	0.00	0.00	0.26	0.26			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.33	0.00	0.00	0.33	0.33			N/A	N/A
2	0.39	0.00	0.00	0.39	0.39			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A
5	0.20	0.00	0.00	0.20	0.20			N/A	N/A

# 2037LG, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.88	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	65	100.000
2		ONE HOUR	✓	63	100.000
3		ONE HOUR	✓	30	100.000
4		ONE HOUR	✓	21	100.000
5		ONE HOUR	✓	35	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	28	21	11	5
	2	23	0	4	10	26
	3	19	5	0	1	5
	4	11	8	1	0	1
	5	5	25	5	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.03	1.67	0.0	0.5	A	60	89
2	0.04	2.01	0.0	0.5	A	58	87
3	0.02	1.89	0.0	0.5	A	28	41
4	0.01	2.08	0.0	0.5	A	19	29
5	0.02	1.91	0.0	0.5	A	32	48

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	49	12	33		2240	0.02 <sub>2</sub>	49	44	0.0	0.0	1.642	A
2	47	12	32	0.00	1870	0.02 <sub>5</sub>	47	50	0.0	0.0	1.975	A
3	23	6	56	0.00	1934	0.01 <sub>2</sub>	23	23	0.0	0.0	1.882	A

4	16	4	62		1766	0.009	16	17	0.0	0.0	2.056	A
5	26	7	50		1940	0.014	26	28	0.0	0.0	1.880	A

**23:00 - 23:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	58	15	40		2235	0.026	58	52	0.0	0.0	1.652	A
2	57	14	39	0.00	1866	0.030	57	59	0.0	0.0	1.989	A
3	27	7	67	0.00	1934	0.014	27	28	0.0	0.0	1.886	A
4	19	5	75		1759	0.011	19	20	0.0	0.0	2.068	A
5	31	8	60		1934	0.016	31	33	0.0	0.0	1.891	A

**23:15 - 23:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	72	18	48		2230	0.032	72	64	0.0	0.0	1.667	A
2	69	17	47	0.00	1861	0.037	69	73	0.0	0.0	2.008	A
3	33	8	83	0.00	1934	0.017	33	34	0.0	0.0	1.892	A
4	23	6	91		1750	0.013	23	24	0.0	0.0	2.083	A
5	39	10	74		1926	0.020	39	41	0.0	0.0	1.906	A

**23:30 - 23:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	72	18	48		2230	0.032	72	64	0.0	0.0	1.667	A
2	69	17	47	0.00	1861	0.037	69	73	0.0	0.0	2.008	A
3	33	8	83	0.00	1934	0.017	33	34	0.0	0.0	1.892	A
4	23	6	91		1750	0.013	23	24	0.0	0.0	2.083	A
5	39	10	74		1926	0.020	39	41	0.0	0.0	1.906	A

**23:45 - 00:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	58	15	40		2235	0.026	58	52	0.0	0.0	1.652	A
2	57	14	39	0.00	1866	0.030	57	59	0.0	0.0	1.989	A
3	27	7	67	0.00	1934	0.014	27	28	0.0	0.0	1.886	A
4	19	5	75		1759	0.011	19	20	0.0	0.0	2.068	A
5	31	8	60		1934	0.016	31	33	0.0	0.0	1.891	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	49	12	33		2240	0.022	49	44	0.0	0.0	1.642	A
2	47	12	32	0.00	1870	0.025	47	50	0.0	0.0	1.975	A
3	23	6	56	0.00	1934	0.012	23	23	0.0	0.0	1.882	A
4	16	4	63		1766	0.009	16	17	0.0	0.0	2.056	A
5	26	7	50		1940	0.014	26	28	0.0	0.0	1.883	A

### Queue Variation Results for each time segment

#### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.03	0.03	0.25	0.45	0.48			N/A	N/A
3	0.01	0.01	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

#### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.46	0.48			N/A	N/A

5	0.02	0.02	0.25	0.45	0.48			N/A	N/A
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### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.02	0.00	0.00	0.02	0.02			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2023HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.91	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	26	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	860	100.000
2		ONE HOUR	✓	997	100.000
3		ONE HOUR	✓	497	100.000
4		ONE HOUR	✓	395	100.000
5		ONE HOUR	✓	551	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	428	208	150	74
	2	281	16	36	193	471
	3	323	54	0	8	112
	4	244	141	8	0	2
	5	78	382	88	3	0



## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.54	4.39	1.1	1.5	A	789	1184
2	0.71	7.86	2.4	4.4	A	915	1372
3	0.43	4.98	0.8	3.1	A	456	684
4	0.42	6.12	0.7	3.2	A	362	544
5	0.48	5.42	0.9	2.7	A	506	758

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	647	162	519		1924	0.336	645	694	0.0	0.5	2.806	A
2	751	188	398	0.00	1661	0.452	747	766	0.0	0.8	3.924	A
3	374	94	891	0.00	1523	0.246	373	255	0.0	0.3	3.128	A
4	297	74	998		1271	0.234	296	265	0.0	0.3	3.689	A
5	415	104	800		1493	0.278	413	494	0.0	0.4	3.329	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	773	193	621		1858	0.416	772	831	0.5	0.7	3.314	A

2	896	224	477	0.00	1617	0.554	895	917	0.8	1.2	4.974	A
3	447	112	1066	0.00	1416	0.315	446	305	0.3	0.5	3.708	A
4	355	89	1195		1167	0.304	355	318	0.3	0.4	4.430	A
5	495	124	958		1399	0.354	495	591	0.4	0.5	3.976	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	237	760		1768	0.536	945	1017	0.7	1.1	4.366	A
2	1098	274	584	0.00	1556	0.705	1093	1122	1.2	2.3	7.706	A
3	547	137	1303	0.00	1273	0.430	546	374	0.5	0.7	4.946	A
4	435	109	1461		1026	0.424	434	389	0.4	0.7	6.066	A
5	607	152	1171		1272	0.477	605	723	0.5	0.9	5.384	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	947	237	762		1767	0.536	947	1019	1.1	1.1	4.390	A
2	1098	274	585	0.00	1555	0.706	1098	1124	2.3	2.4	7.857	A
3	547	137	1308	0.00	1270	0.431	547	374	0.7	0.8	4.981	A
4	435	109	1465		1023	0.425	435	390	0.7	0.7	6.115	A
5	607	152	1175		1270	0.478	607	725	0.9	0.9	5.424	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	773	193	624		1856	0.416	775	835	1.1	0.7	3.336	A
2	896	224	478	0.00	1616	0.555	901	920	2.4	1.3	5.065	A
3	447	112	1073	0.00	1413	0.316	448	306	0.8	0.5	3.735	A
4	355	89	1201		1163	0.305	356	319	0.7	0.4	4.467	A
5	495	124	963		1397	0.355	497	595	0.9	0.6	4.006	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	647	162	522		1923	0.337	648	698	0.7	0.5	2.828	A
2	751	188	400	0.00	1660	0.452	752	770	1.3	0.8	3.973	A
3	374	94	896	0.00	1520	0.246	375	256	0.5	0.3	3.147	A
4	297	74	1004		1268	0.235	298	267	0.4	0.3	3.713	A
5	415	104	805		1491	0.278	415	497	0.6	0.4	3.352	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.50	0.50	1.00	1.40	1.45			N/A	N/A
2	0.82	0.55	1.00	1.40	1.45			N/A	N/A
3	0.32	0.00	0.00	0.32	0.32			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A
5	0.38	0.00	0.00	0.38	0.38			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.71	0.08	0.78	1.40	1.47			N/A	N/A
2	1.23	0.06	0.68	2.78	3.99			N/A	N/A
3	0.46	0.00	0.00	0.46	0.46			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A
5	0.54	0.07	0.69	1.34	1.42			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.14	0.03	0.26	1.14	1.14			N/A	N/A
2	2.33	0.03	0.27	2.33	4.39			N/A	N/A
3	0.75	0.03	0.25	0.75	0.75			N/A	N/A
4	0.73	0.03	0.25	0.73	0.73			N/A	N/A
5	0.90	0.03	0.26	0.90	0.90			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.15	0.03	0.27	1.15	1.39			N/A	N/A
2	2.36	0.03	0.27	2.36	2.36			N/A	N/A
3	0.75	0.03	0.28	1.03	3.07			N/A	N/A
4	0.73	0.03	0.29	1.21	3.20			N/A	N/A
5	0.91	0.03	0.28	0.91	2.70			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.72	0.51	0.98	1.40	1.45			N/A	N/A
2	1.26	0.08	1.02	2.39	3.12			N/A	N/A
3	0.47	0.00	0.00	0.47	0.47			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A
5	0.55	0.55	1.00	1.40	1.45			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.51	0.05	0.50	1.30	1.40			N/A	N/A
2	0.83	0.05	0.47	1.74	2.54			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A
5	0.39	0.03	0.27	0.48	0.67			N/A	N/A

## 2023HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	6.87	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	18	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1212	100.000
2		ONE HOUR	✓	825	100.000
3		ONE HOUR	✓	445	100.000
4		ONE HOUR	✓	333	100.000
5		ONE HOUR	✓	577	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	451	394	297	67
	2	163	3	58	174	427
	3	299	51	0	12	83
	4	181	140	8	0	4
	5	73	403	93	7	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.76	8.51	3.1	9.3	A	1112	1668
2	0.68	8.27	2.1	3.2	A	757	1136
3	0.38	4.44	0.6	2.8	A	408	613
4	0.32	4.54	0.5	1.9	A	306	458
5	0.45	4.62	0.8	2.7	A	529	794

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	912	228	530		1917	0.476	909	539	0.0	0.9	3.556	A
2	621	155	652	0.00	1517	0.409	618	786	0.0	0.7	3.995	A
3	335	84	856	0.00	1544	0.217	334	415	0.0	0.3	2.972	A
4	251	63	823		1364	0.184	250	367	0.0	0.2	3.229	A
5	434	109	636		1591	0.273	433	436	0.0	0.4	3.104	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1090	272	634		1850	0.589	1088	646	0.9	1.4	4.711	A
2	742	185	781	0.00	1444	0.514	740	941	0.7	1.0	5.106	A
3	400	100	1025	0.00	1442	0.277	400	496	0.3	0.4	3.452	A
4	299	75	985		1278	0.234	299	440	0.2	0.3	3.678	A
5	519	130	761		1516	0.342	518	522	0.4	0.5	3.604	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	1334	334	776		1758	0.759	1328	790	1.4	3.0	8.254	A
2	908	227	954	0.00	1345	0.675	904	1150	1.0	2.0	8.091	A
3	490	122	1252	0.00	1304	0.376	489	606	0.4	0.6	4.413	A
4	367	92	1204		1162	0.316	366	537	0.3	0.5	4.523	A
5	635	159	932		1415	0.449	634	638	0.5	0.8	4.603	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1334	334	777		1757	0.760	1334	792	3.0	3.1	8.507	A
2	908	227	958	0.00	1343	0.676	908	1154	2.0	2.1	8.273	A
3	490	122	1257	0.00	1301	0.377	490	609	0.6	0.6	4.440	A
4	367	92	1208		1160	0.316	367	539	0.5	0.5	4.538	A
5	635	159	934		1414	0.449	635	641	0.8	0.8	4.623	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1090	272	636		1848	0.589	1096	648	3.1	1.5	4.826	A
2	742	185	786	0.00	1441	0.515	746	946	2.1	1.1	5.208	A
3	400	100	1032	0.00	1437	0.278	401	500	0.6	0.4	3.476	A
4	299	75	990		1275	0.235	300	443	0.5	0.3	3.696	A
5	519	130	764		1515	0.342	520	526	0.8	0.5	3.625	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	912	228	532		1916	0.476	915	542	1.5	0.9	3.602	A
2	621	155	656	0.00	1515	0.410	623	790	1.1	0.7	4.044	A
3	335	84	862	0.00	1540	0.217	335	417	0.4	0.3	2.988	A
4	251	63	828		1361	0.184	251	370	0.3	0.2	3.246	A
5	434	109	639		1589	0.273	435	439	0.5	0.4	3.120	A

## Queue Variation Results for each time segment

### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.90	0.55	1.00	1.40	1.45			N/A	N/A
2	0.69	0.55	1.00	1.40	1.45			N/A	N/A
3	0.28	0.00	0.00	0.28	0.28			N/A	N/A
4	0.22	0.00	0.00	0.22	0.22			N/A	N/A
5	0.37	0.00	0.00	0.37	0.37			N/A	N/A

### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.42	0.05	0.47	3.60	5.64			N/A	N/A
2	1.04	0.06	0.76	2.00	2.86			N/A	N/A
3	0.38	0.00	0.00	0.38	0.38			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A
5	0.52	0.06	0.59	1.32	1.41			N/A	N/A

### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.04	0.03	0.28	3.04	9.26			N/A	N/A
2	2.02	0.03	0.27	2.02	3.20			N/A	N/A
3	0.60	0.03	0.25	0.60	0.60			N/A	N/A
4	0.46	0.03	0.25	0.46	0.48			N/A	N/A
5	0.81	0.03	0.25	0.81	0.81			N/A	N/A

### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.10	0.03	0.27	3.10	3.10			N/A	N/A
2	2.06	0.03	0.27	2.06	2.06			N/A	N/A
3	0.60	0.03	0.30	1.41	2.84			N/A	N/A
4	0.46	0.03	0.32	1.41	1.87			N/A	N/A
5	0.81	0.03	0.28	0.81	2.67			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.45	0.07	0.96	3.16	4.47			N/A	N/A
2	1.07	0.09	0.96	1.81	2.36			N/A	N/A
3	0.39	0.00	0.00	0.39	0.39			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A
5	0.52	0.52	1.00	1.40	1.45			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
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1	0.92	0.04	0.42	2.14	3.47			N/A	N/A
2	0.70	0.05	0.47	1.29	1.85			N/A	N/A
3	0.28	0.00	0.00	0.28	0.28			N/A	N/A
4	0.23	0.00	0.00	0.23	0.23			N/A	N/A
5	0.38	0.00	0.00	0.38	0.38			N/A	N/A

## 2023HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.82	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	62	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	763	100.000
2		ONE HOUR	✓	717	100.000
3		ONE HOUR	✓	349	100.000
4		ONE HOUR	✓	244	100.000
5		ONE HOUR	✓	420	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	1	2	3	4	5
From	1	318	252	137	55
	2	260	2	44	112
	3	227	53	0	12
	4	132	94	11	0
	5	61	296	57	6

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	1	2	3	4	5
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0
	5	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.44	3.43	0.8	2.3	A	700	1050
2	0.51	4.65	1.0	1.5	A	658	987
3	0.26	3.28	0.3	1.4	A	320	480

4	0.22	3.69	0.3	1.1	A	224	336
5	0.32	3.61	0.5	1.9	A	385	578

## Main Results for each time segment

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	390		2008	0.286	573	511	0.0	0.4	2.506	A
2	540	135	390	0.00	1666	0.324	538	573	0.0	0.5	3.184	A
3	263	66	654	0.00	1666	0.158	262	273	0.0	0.2	2.562	A
4	184	46	716		1420	0.129	183	200	0.0	0.1	2.908	A
5	316	79	585		1621	0.195	315	314	0.0	0.2	2.755	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	686	171	466		1959	0.350	685	612	0.4	0.5	2.825	A
2	645	161	466	0.00	1623	0.397	644	685	0.5	0.7	3.676	A
3	314	78	783	0.00	1588	0.198	314	327	0.2	0.2	2.824	A
4	219	55	857		1345	0.163	219	240	0.1	0.2	3.196	A
5	378	94	701		1553	0.243	377	375	0.2	0.3	3.063	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	840	210	571		1891	0.444	839	749	0.5	0.8	3.420	A
2	789	197	571	0.00	1563	0.505	788	839	0.7	1.0	4.635	A
3	384	96	958	0.00	1482	0.259	384	400	0.2	0.3	3.279	A
4	269	67	1049		1244	0.216	268	294	0.2	0.3	3.690	A
5	462	116	858		1459	0.317	462	459	0.3	0.5	3.608	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	840	210	571		1890	0.444	840	750	0.8	0.8	3.426	A
2	789	197	571	0.00	1563	0.505	789	840	1.0	1.0	4.653	A
3	384	96	960	0.00	1481	0.259	384	401	0.3	0.3	3.282	A
4	269	67	1050		1243	0.216	269	294	0.3	0.3	3.693	A
5	462	116	859		1458	0.317	462	460	0.5	0.5	3.613	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	686	171	467		1958	0.350	687	613	0.8	0.5	2.836	A
2	645	161	467	0.00	1622	0.397	646	687	1.0	0.7	3.694	A
3	314	78	785	0.00	1587	0.198	314	328	0.3	0.2	2.831	A
4	219	55	859		1344	0.163	220	240	0.3	0.2	3.201	A
5	378	94	702		1552	0.243	378	377	0.5	0.3	3.068	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	391		2007	0.286	575	513	0.5	0.4	2.513	A
2	540	135	391	0.00	1666	0.324	541	575	0.7	0.5	3.201	A
3	263	66	657	0.00	1664	0.158	263	274	0.2	0.2	2.568	A
4	184	46	719		1418	0.130	184	201	0.2	0.1	2.916	A
5	316	79	588		1620	0.195	317	315	0.3	0.2	2.762	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2	0.48	0.00	0.00	0.48	0.48			N/A	N/A
3	0.19	0.00	0.00	0.19	0.19			N/A	N/A

4	0.15	0.00	0.00	0.15	0.15			N/A	N/A
5	0.24	0.00	0.00	0.24	0.24			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.06	0.68	1.34	1.42			N/A	N/A
2	0.65	0.09	0.81	1.37	1.43			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A
4	0.19	0.00	0.00	0.19	0.19			N/A	N/A
5	0.32	0.00	0.00	0.32	0.32			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.79	0.03	0.25	0.79	0.79			N/A	N/A
2	1.01	0.03	0.26	1.01	1.01			N/A	N/A
3	0.35	0.03	0.25	0.45	0.48			N/A	N/A
4	0.27	0.03	0.25	0.46	0.48			N/A	N/A
5	0.46	0.03	0.25	0.46	0.48			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.80	0.03	0.28	0.80	2.27			N/A	N/A
2	1.02	0.03	0.27	1.02	1.40			N/A	N/A
3	0.35	0.03	0.33	1.16	1.40			N/A	N/A
4	0.27	0.03	0.29	0.77	1.14			N/A	N/A
5	0.46	0.03	0.32	1.41	1.89			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2	0.66	0.55	1.00	1.40	1.45			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A
4	0.20	0.00	0.00	0.20	0.20			N/A	N/A
5	0.32	0.00	0.00	0.32	0.32			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2	0.48	0.04	0.42	1.25	1.38			N/A	N/A
3	0.19	0.00	0.00	0.19	0.19			N/A	N/A
4	0.15	0.00	0.00	0.15	0.15			N/A	N/A
5	0.24	0.00	0.00	0.24	0.24			N/A	N/A

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.89	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	74	100.000
2		ONE HOUR	✓	69	100.000
3		ONE HOUR	✓	34	100.000
4		ONE HOUR	✓	24	100.000
5		ONE HOUR	✓	42	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	31	25	13	5
	2	25	0	4	11	29
	3	22	5	0	1	6
	4	13	9	1	0	1
	5	6	29	6	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.68	0.0	0.5	A	68	102
2	0.04	2.02	0.0	0.5	A	63	95
3	0.02	1.90	0.0	0.5	A	31	47
4	0.02	2.09	0.0	0.5	A	22	33
5	0.02	1.92	0.0	0.5	A	39	58

### Main Results for each time segment

22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	56	14	38		2236	0.025	56	50	0.0	0.0	1.650	A
2	52	13	38	0.00	1866	0.028	52	56	0.0	0.0	1.983	A
3	26	6	63	0.00	1934	0.013	26	27	0.0	0.0	1.885	A
4	18	5	69		1762	0.010	18	20	0.0	0.0	2.063	A
5	32	8	56		1936	0.016	32	31	0.0	0.0	1.889	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	67	17	46		2231	0.030	67	59	0.0	0.0	1.662	A
2	62	16	46	0.00	1862	0.033	62	67	0.0	0.0	1.999	A
3	31	8	75	0.00	1934	0.016	31	32	0.0	0.0	1.890	A
4	22	5	83		1755	0.012	22	23	0.0	0.0	2.076	A
5	38	9	67		1930	0.020	38	37	0.0	0.0	1.901	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	81	20	56		2225	0.037	81	73	0.0	0.0	1.678	A
2	76	19	56	0.00	1856	0.041	76	81	0.0	0.0	2.021	A
3	37	9	92	0.00	1934	0.019	37	40	0.0	0.0	1.897	A
4	26	7	101		1745	0.015	26	29	0.0	0.0	2.094	A
5	46	12	83		1921	0.024	46	45	0.0	0.0	1.920	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	81	20	56		2225	0.037	81	73	0.0	0.0	1.678	A
2	76	19	56	0.00	1856	0.041	76	81	0.0	0.0	2.021	A
3	37	9	92	0.00	1934	0.019	37	40	0.0	0.0	1.897	A



4	26	7	101		1745	0.015	26	29	0.0	0.0	2.094	A
5	46	12	83		1921	0.024	46	45	0.0	0.0	1.920	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	67	17	46		2231	0.030	67	59	0.0	0.0	1.664	A
2	62	16	46	0.00	1862	0.033	62	67	0.0	0.0	1.999	A
3	31	8	76	0.00	1934	0.016	31	32	0.0	0.0	1.890	A
4	22	5	83		1755	0.012	22	23	0.0	0.0	2.076	A
5	38	9	67		1930	0.020	38	37	0.0	0.0	1.904	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	56	14	38		2236	0.025	56	50	0.0	0.0	1.650	A
2	52	13	38	0.00	1866	0.028	52	56	0.0	0.0	1.985	A
3	26	6	63	0.00	1934	0.013	26	27	0.0	0.0	1.885	A
4	18	5	69		1762	0.010	18	20	0.0	0.0	2.065	A
5	32	8	56		1936	0.016	32	31	0.0	0.0	1.892	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.03	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A

5	0.02	0.02	0.25	0.45	0.48			N/A	N/A
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### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

### 00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.03	0.00	0.00	0.03	0.03			N/A	N/A
3	0.01	0.00	0.00	0.01	0.01			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

# 2037HG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	12.80	B

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	5	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	980	100.000
2		ONE HOUR	✓	1185	100.000
3		ONE HOUR	✓	810	100.000
4		ONE HOUR	✓	438	100.000
5		ONE HOUR	✓	631	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	475	266	160	79
	2	310	18	130	211	516
	3	409	209	0	29	163
	4	257	153	26	0	2
	5	84	416	128	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.68	7.17	2.1	3.2	A	899	1349
2	0.89	20.51	7.1	35.5	C	1087	1631
3	0.74	11.70	2.8	10.3	B	743	1115
4	0.60	11.06	1.5	4.7	B	402	603
5	0.65	9.72	1.8	3.6	A	579	869

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	714		1798	0.410	735	794	0.0	0.7	3.379	A
2	892	223	496	0.00	1606	0.556	887	953	0.0	1.2	4.978	A
3	610	152	971	0.00	1474	0.414	607	412	0.0	0.7	4.139	A

4	330	82	1276		1123	0.294	328	302	0.0	0.4	4.517	A
5	475	119	1035		1353	0.351	473	569	0.0	0.5	4.079	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	881	220	855		1707	0.516	880	950	0.7	1.1	4.345	A
2	1065	266	594	0.00	1550	0.687	1062	1140	1.2	2.1	7.315	A
3	728	182	1162	0.00	1358	0.536	726	493	0.7	1.1	5.682	A
4	394	98	1527		991	0.397	393	361	0.4	0.7	6.011	A
5	567	142	1239		1232	0.460	566	681	0.5	0.8	5.396	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1079	270	1043		1584	0.681	1075	1157	1.1	2.1	7.010	A
2	1305	326	726	0.00	1475	0.885	1287	1392	2.1	6.5	17.711	C
3	892	223	1411	0.00	1207	0.739	886	602	1.1	2.7	10.988	B
4	482	121	1857		816	0.591	479	440	0.7	1.4	10.592	B
5	695	174	1509		1071	0.649	691	828	0.8	1.8	9.373	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1079	270	1049		1581	0.683	1079	1166	2.1	2.1	7.170	A
2	1305	326	729	0.00	1473	0.886	1303	1399	6.5	7.1	20.508	C
3	892	223	1426	0.00	1198	0.744	891	605	2.7	2.8	11.695	B
4	482	121	1874		807	0.597	482	443	1.4	1.5	11.059	B
5	695	174	1520		1064	0.653	695	836	1.8	1.8	9.720	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	881	220	863		1701	0.518	885	964	2.1	1.1	4.434	A
2	1065	266	598	0.00	1548	0.688	1084	1150	7.1	2.3	8.077	A
3	728	182	1184	0.00	1345	0.541	735	499	2.8	1.2	5.961	A
4	394	98	1552		978	0.403	397	367	1.5	0.7	6.230	A
5	567	142	1256		1222	0.464	571	693	1.8	0.9	5.564	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	720		1794	0.411	739	801	1.1	0.7	3.416	A
2	892	223	500	0.00	1604	0.556	896	959	2.3	1.3	5.116	A
3	610	152	980	0.00	1469	0.415	612	415	1.2	0.7	4.210	A
4	330	82	1288		1117	0.295	331	304	0.7	0.4	4.583	A
5	475	119	1044		1348	0.352	476	574	0.9	0.5	4.137	A

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.69	0.55	1.00	1.40	1.45			N/A	N/A
2	1.23	0.56	1.13	1.51	1.76			N/A	N/A
3	0.70	0.55	1.00	1.40	1.45			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A
5	0.54	0.54	1.00	1.40	1.45			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.06	0.06	0.66	2.22	3.17			N/A	N/A
2	2.14	0.05	0.47	5.82	9.60			N/A	N/A
3	1.14	0.05	0.60	2.59	3.76			N/A	N/A
4	0.65	0.07	0.74	1.36	1.44			N/A	N/A
5	0.84	0.07	0.75	1.42	1.84			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.08	0.03	0.27	2.08	2.38			N/A	N/A
2	6.53	0.04	0.40	17.16	35.50			N/A	N/A
3	2.70	0.03	0.29	2.70	10.28			N/A	N/A
4	1.40	0.03	0.27	1.40	1.46			N/A	N/A

5	1.79	0.03	0.27	1.79	2.95			N/A	N/A
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### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.12	0.03	0.27	2.12	2.12			N/A	N/A
2	7.05	0.03	0.33	10.42	35.51			N/A	N/A
3	2.83	0.03	0.28	2.83	6.35			N/A	N/A
4	1.46	0.03	0.28	1.46	4.73			N/A	N/A
5	1.84	0.03	0.27	1.84	3.62			N/A	N/A

### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.09	0.10	0.99	1.77	2.20			N/A	N/A
2	2.27	0.04	0.44	6.21	10.69			N/A	N/A
3	1.20	0.06	0.82	2.53	3.54			N/A	N/A
4	0.68	0.07	0.75	1.38	1.46			N/A	N/A
5	0.88	0.08	0.85	1.33	1.74			N/A	N/A

### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.70	0.05	0.48	1.24	1.79			N/A	N/A
2	1.27	0.03	0.32	2.56	6.53			N/A	N/A
3	0.72	0.04	0.38	1.65	2.69			N/A	N/A
4	0.42	0.04	0.36	1.20	1.37			N/A	N/A
5	0.55	0.04	0.42	1.28	1.28			N/A	N/A

# 2037HG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	26.91	D

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-2	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1391	100.000
2		ONE HOUR	✓	1061	100.000
3		ONE HOUR	✓	696	100.000
4		ONE HOUR	✓	384	100.000
5		ONE HOUR	✓	675	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	4	505	486	323	73
	2	186	3	196	196	480
	3	376	161	0	32	127
	4	199	156	25	0	4
	5	80	450	136	8	1



## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.96	40.74	16.4	80.3	E	1276	1915
2	0.95	41.18	12.6	64.4	E	974	1460
3	0.63	7.93	1.7	2.4	A	639	958
4	0.43	6.45	0.8	3.3	A	352	529
5	0.60	7.19	1.5	1.9	A	619	929

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1047	262	705		1804	0.581	1042	633	0.0	1.4	4.690	A
2	799	200	791	0.00	1438	0.556	794	956	0.0	1.2	5.548	A
3	524	131	954	0.00	1485	0.353	522	631	0.0	0.5	3.731	A
4	289	72	1057		1240	0.233	288	419	0.0	0.3	3.777	A
5	508	127	832		1474	0.345	506	513	0.0	0.5	3.710	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1250	313	844		1714	0.730	1245	758	1.4	2.6	7.606	A

2	954	238	946	0.00	1350	0.707	949	1143	1.2	2.3	8.893	A
3	626	156	1140	0.00	1372	0.456	625	755	0.5	0.8	4.819	A
4	345	86	1264		1130	0.306	345	500	0.3	0.4	4.582	A
5	607	152	996		1377	0.441	606	613	0.5	0.8	4.663	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1532	383	1031		1592	0.962	1489	922	2.6	13.2	27.755	D
2	1168	292	1135	0.00	1242	0.940	1137	1385	2.3	10.0	28.549	D
3	766	192	1365	0.00	1235	0.621	763	907	0.8	1.6	7.582	A
4	423	106	1529		990	0.427	422	600	0.4	0.7	6.322	A
5	743	186	1213		1248	0.596	741	737	0.8	1.4	7.064	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1532	383	1035		1590	0.963	1519	928	13.2	16.4	40.743	E
2	1168	292	1155	0.00	1231	0.949	1158	1399	10.0	12.6	41.184	E
3	766	192	1391	0.00	1220	0.628	766	922	1.6	1.7	7.929	A
4	423	106	1546		981	0.431	423	611	0.7	0.8	6.451	A
5	743	186	1220		1243	0.598	743	749	1.4	1.5	7.194	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1250	313	849		1710	0.731	1305	769	16.4	2.8	10.035	B
2	954	238	985	0.00	1328	0.718	994	1169	12.6	2.7	11.979	B
3	626	156	1193	0.00	1339	0.467	629	785	1.7	0.9	5.090	A
4	345	86	1300		1111	0.311	346	523	0.8	0.5	4.715	A
5	607	152	1009		1369	0.443	609	637	1.5	0.8	4.754	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1047	262	709		1801	0.581	1053	638	2.8	1.4	4.847	A
2	799	200	799	0.00	1433	0.557	804	963	2.7	1.3	5.769	A
3	524	131	965	0.00	1478	0.355	525	638	0.9	0.6	3.784	A
4	289	72	1067		1234	0.234	290	423	0.5	0.3	3.816	A
5	508	127	838		1471	0.346	509	519	0.8	0.5	3.747	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.37	0.37	1.26	1.90	2.34			N/A	N/A
2	1.23	0.53	1.16	1.65	1.86			N/A	N/A
3	0.54	0.54	1.00	1.40	1.45			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A
5	0.52	0.52	1.00	1.40	1.45			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.62	0.04	0.44	7.23	12.68			N/A	N/A
2	2.33	0.05	0.47	6.40	10.57			N/A	N/A
3	0.83	0.07	0.78	1.30	1.75			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A
5	0.78	0.07	0.78	1.48	1.49			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	13.22	0.11	3.77	37.31	55.94			N/A	N/A
2	10.01	0.08	1.82	28.88	45.21			N/A	N/A
3	1.60	0.03	0.27	1.60	1.60			N/A	N/A
4	0.74	0.03	0.26	0.74	0.74			N/A	N/A
5	1.45	0.03	0.26	1.45	1.45			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	16.42	0.07	1.75	48.49	80.28			N/A	N/A
2	12.59	0.06	1.08	36.81	64.42			N/A	N/A
3	1.66	0.03	0.27	1.66	2.36			N/A	N/A
4	0.75	0.03	0.29	1.24	3.31			N/A	N/A
5	1.47	0.03	0.27	1.47	1.88			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.81	0.04	0.39	7.53	14.50			N/A	N/A
2	2.65	0.04	0.41	7.26	13.28			N/A	N/A
3	0.89	0.13	0.93	1.50	1.51			N/A	N/A
4	0.45	0.00	0.00	0.45	0.45			N/A	N/A
5	0.80	0.13	0.90	1.42	1.49			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.41	0.03	0.29	1.41	6.33			N/A	N/A
2	1.28	0.03	0.30	1.44	5.90			N/A	N/A
3	0.55	0.05	0.46	1.34	1.46			N/A	N/A
4	0.31	0.00	0.00	0.31	0.31			N/A	N/A
5	0.53	0.05	0.46	1.30	1.41			N/A	N/A

## 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.92	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	36	Arm 2

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	855	100.000
2		ONE HOUR	✓	855	100.000
3		ONE HOUR	✓	520	100.000
4		ONE HOUR	✓	273	100.000
5		ONE HOUR	✓	477	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	349	302	145	58
	2	285	2	121	122	325
	3	276	134	0	25	85
	4	140	102	23	0	8
	5	65	322	84	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.53	4.29	1.1	1.5	A	785	1177
2	0.63	6.44	1.7	2.2	A	785	1177
3	0.40	4.18	0.7	2.9	A	477	716
4	0.27	4.39	0.4	1.5	A	251	376
5	0.39	4.43	0.6	2.9	A	438	657

## Main Results for each time segment

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	505		1933	0.333	642	575	0.0	0.5	2.784	A
2	644	161	465	0.00	1624	0.396	641	682	0.0	0.7	3.655	A
3	391	98	708	0.00	1634	0.240	390	398	0.0	0.3	2.892	A
4	206	51	875		1336	0.154	205	224	0.0	0.2	3.181	A
5	359	90	722		1540	0.233	358	357	0.0	0.3	3.044	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	604		1869	0.411	768	689	0.5	0.7	3.268	A
2	769	192	556	0.00	1572	0.489	767	816	0.7	0.9	4.469	A
3	467	117	847	0.00	1549	0.302	467	476	0.3	0.4	3.324	A
4	245	61	1047		1245	0.197	245	268	0.2	0.2	3.600	A
5	429	107	865		1455	0.295	428	427	0.3	0.4	3.504	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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1	941	235	740		1781	0.529	940	843	0.7	1.1	4.269	A
2	941	235	680	0.00	1501	0.627	939	999	0.9	1.7	6.369	A
3	573	143	1037	0.00	1434	0.399	572	582	0.4	0.7	4.168	A
4	301	75	1281		1121	0.268	300	327	0.2	0.4	4.381	A
5	525	131	1058		1340	0.392	524	523	0.4	0.6	4.410	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	941	235	741		1780	0.529	941	844	1.1	1.1	4.290	A
2	941	235	682	0.00	1500	0.627	941	1001	1.7	1.7	6.437	A
3	573	143	1039	0.00	1433	0.400	573	584	0.7	0.7	4.184	A
4	301	75	1284		1120	0.268	301	328	0.4	0.4	4.395	A
5	525	131	1060		1338	0.392	525	524	0.6	0.6	4.426	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	769	192	606		1868	0.412	770	691	1.1	0.7	3.284	A
2	769	192	558	0.00	1571	0.489	771	819	1.7	1.0	4.520	A
3	467	117	851	0.00	1547	0.302	468	478	0.7	0.4	3.340	A
4	245	61	1051		1243	0.198	246	269	0.4	0.2	3.612	A
5	429	107	868		1453	0.295	430	429	0.6	0.4	3.522	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	644	161	507		1932	0.333	644	578	0.7	0.5	2.797	A
2	644	161	467	0.00	1623	0.397	645	685	1.0	0.7	3.685	A
3	391	98	712	0.00	1631	0.240	392	400	0.4	0.3	2.907	A
4	206	51	879		1334	0.154	206	225	0.2	0.2	3.191	A
5	359	90	726		1537	0.234	360	359	0.4	0.3	3.059	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.50	0.00	0.00	0.50	0.50			N/A	N/A
2	0.65	0.55	1.00	1.40	1.45			N/A	N/A
3	0.31	0.00	0.00	0.31	0.31			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A
5	0.30	0.00	0.00	0.30	0.30			N/A	N/A

### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.69	0.08	0.78	1.38	1.46			N/A	N/A
2	0.95	0.07	0.80	1.70	2.20			N/A	N/A
3	0.43	0.00	0.00	0.43	0.43			N/A	N/A
4	0.24	0.00	0.00	0.24	0.24			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.11	0.03	0.26	1.11	1.11			N/A	N/A
2	1.65	0.03	0.26	1.65	1.65			N/A	N/A
3	0.66	0.03	0.25	0.66	0.66			N/A	N/A
4	0.36	0.03	0.25	0.46	0.48			N/A	N/A
5	0.64	0.03	0.25	0.64	0.64			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.12	0.03	0.27	1.12	1.43			N/A	N/A
2	1.67	0.03	0.27	1.67	1.67			N/A	N/A
3	0.66	0.03	0.29	1.19	2.92			N/A	N/A
4	0.37	0.03	0.33	1.21	1.47			N/A	N/A
5	0.64	0.03	0.29	1.27	2.92			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.70	0.55	1.00	1.40	1.45			N/A	N/A
2	0.97	0.14	0.98	1.33	1.71			N/A	N/A
3	0.44	0.00	0.00	0.44	0.44			N/A	N/A
4	0.25	0.00	0.00	0.25	0.25			N/A	N/A
5	0.42	0.00	0.00	0.42	0.42			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
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1	0.50	0.05	0.48	1.29	1.40			N/A	N/A
2	0.66	0.06	0.61	1.18	1.18			N/A	N/A
3	0.32	0.00	0.00	0.32	0.32			N/A	N/A
4	0.18	0.00	0.00	0.18	0.18			N/A	N/A
5	0.31	0.00	0.00	0.31	0.31			N/A	N/A

## 2037HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 1 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	1.91	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	83	100.000
2		ONE HOUR	✓	84	100.000
3		ONE HOUR	✓	50	100.000
4		ONE HOUR	✓	27	100.000
5		ONE HOUR	✓	46	100.000

### Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1		
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4		
5		

## Origin-Destination Data

### Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	34	29	14	6
	2	28	0	12	12	32
	3	27	13	0	2	8
	4	14	10	2	0	1
	5	6	31	8	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To					
	1	2	3	4	5	
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.04	1.69	0.0	0.5	A	76	114
2	0.05	2.05	0.1	0.5	A	77	116
3	0.03	1.91	0.0	0.5	A	46	69

4	0.02	2.11	0.0	0.5	A	25	37
5	0.03	1.94	0.0	0.5	A	42	63

## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	62	16	49		2229	0.028	62	56	0.0	0.0	1.660	A
2	63	16	45	0.00	1863	0.034	63	66	0.0	0.0	2.000	A
3	38	9	70	0.00	1934	0.019	38	38	0.0	0.0	1.897	A
4	20	5	86		1753	0.012	20	22	0.0	0.0	2.076	A
5	35	9	71		1928	0.018	35	35	0.0	0.0	1.900	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	75	19	58		2223	0.034	75	67	0.0	0.0	1.674	A
2	76	19	54	0.00	1858	0.041	75	79	0.0	0.0	2.019	A
3	45	11	84	0.00	1934	0.023	45	46	0.0	0.0	1.904	A
4	24	6	102		1745	0.014	24	26	0.0	0.0	2.092	A
5	41	10	84		1919	0.022	41	42	0.0	0.0	1.915	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	91	23	72		2215	0.041	91	83	0.0	0.0	1.694	A
2	92	23	66	0.00	1851	0.050	92	97	0.0	0.1	2.047	A
3	55	14	102	0.00	1934	0.028	55	56	0.0	0.0	1.915	A
4	30	7	125		1732	0.017	30	32	0.0	0.0	2.113	A
5	51	13	103		1908	0.027	51	52	0.0	0.0	1.937	A

23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	91	23	72		2215	0.041	91	83	0.0	0.0	1.694	A
2	92	23	66	0.00	1851	0.050	92	97	0.1	0.1	2.047	A
3	55	14	102	0.00	1934	0.028	55	56	0.0	0.0	1.915	A
4	30	7	126		1732	0.017	30	32	0.0	0.0	2.114	A
5	51	13	103		1908	0.027	51	52	0.0	0.0	1.937	A

23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	75	19	58		2223	0.034	75	67	0.0	0.0	1.674	A
2	76	19	54	0.00	1857	0.041	76	79	0.1	0.0	2.020	A
3	45	11	84	0.00	1934	0.023	45	46	0.0	0.0	1.904	A
4	24	6	103		1745	0.014	24	26	0.0	0.0	2.094	A
5	41	10	85		1919	0.022	41	42	0.0	0.0	1.918	A

00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	62	16	49		2229	0.028	63	56	0.0	0.0	1.660	A
2	63	16	45	0.00	1862	0.034	63	66	0.0	0.0	2.000	A
3	38	9	70	0.00	1934	0.019	38	38	0.0	0.0	1.900	A
4	20	5	86		1753	0.012	20	22	0.0	0.0	2.078	A
5	35	9	71		1928	0.018	35	35	0.0	0.0	1.900	A

Queue Variation Results for each time segment

22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A

4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.03	0.25	0.45	0.48			N/A	N/A
2	0.04	0.03	0.25	0.45	0.48			N/A	N/A
3	0.02	0.02	0.25	0.45	0.48			N/A	N/A
4	0.01	0.01	0.25	0.45	0.48			N/A	N/A
5	0.02	0.02	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.26	0.46	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**23:45 - 00:00**

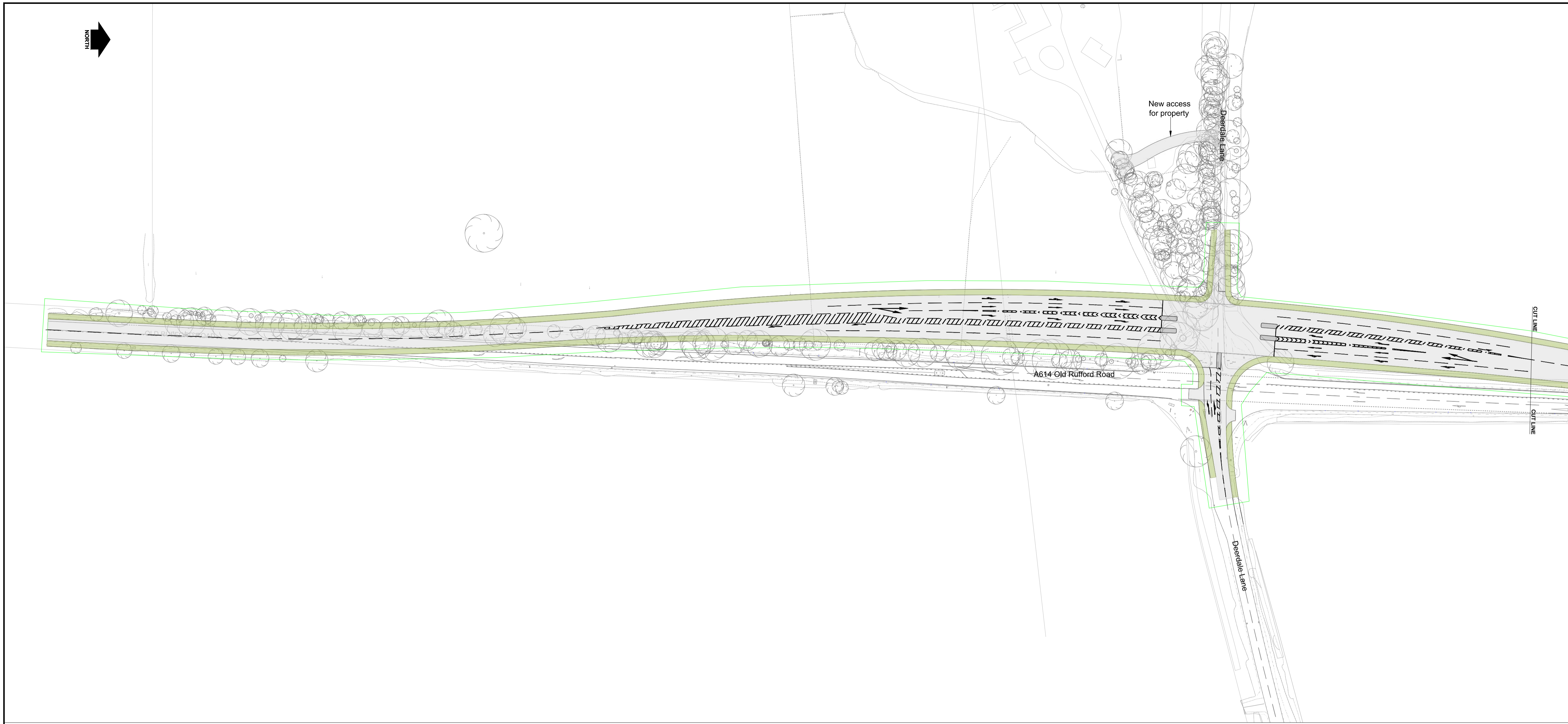
Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.01	0.00	0.00	0.01	0.01			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A

# Appendix T – Deerdale Scheme Drawing and PICADY/LINSIG Outputs





- NOTES**
1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
  2. Do not scale from this drawing.
  3. All measurements are given in metres unless otherwise stated.

- KEY**
- Proposed Carriageway Areas
  - Proposed Footways/Hardstanding Areas
  - Proposed Embankment/Verges

Rev.	Description	Drawn	Ch'kd	Auth	Date
Project <b>A614/A6097 CORRIDOR IMPROVEMENTS DEERDALE LANE JUNCTION</b>					
Status <b>FOR INFO</b>		Project No. <b>HW20949</b>			
Drawing Title <b>GENERAL ARRANGEMENT</b>					
Scale <b>1:1000 @A1</b>		Drawn <b>JD</b>	Date <b>23.10.20</b>		
Drawing No. <b>HW20949/GEN/D002/005</b>		Traced <b>JD</b>	Rev. <b>0</b>		

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Bilthorpe Depot, Bilthorpe Business Park, Bilthorpe,  
Nottinghamshire, NG22 8ST

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462  
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** J2 A614-deer existing\_V4.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\2-Deerdale

**Report generation date:** 04/12/2020 10:04:52

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2037, AM
- »2037, PM
- »2037, IP
- »2037, OP
- »2037+dependent, AM
- »2037+dependent, PM
- »2037+dependent, IP
- »2037+dependent, OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP
- »2037LG, AM
- »2037LG, PM
- »2037LG, IP
- »2037LG, OP
- »2023HG, AM
- »2023HG, PM
- »2023HG, IP
- »2023HG, OP
- »2037HG, AM
- »2037HG, PM
- »2037HG, IP
- »2037HG, OP

### Summary of junction performance

	AM							PM							IP							OP						
	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Network	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Network	Set ID	Queue	95% Q	Delay	RF	LOS	Junct	Junct	Network	



	ue (PCU)	ue (s)	ue (PCU)	ue (s)	ion Delay (s)	ion LOS	k Residual Capacity	ue (PCU)	ue (s)	ue (PCU)	ue (s)	ion Delay (s)	ion LOS	k Residual Capacity	ue (PCU)	ue (s)	ue (PCU)	ue (s)	ion Delay (s)	ion LOS	k Residual Capacity
<b>2023</b>																					
Stream B-CD	0.2	0.5	8.49	0.16	A			0.2	0.5	8.71	0.17	A			0.1	0.5	6.49	0.10	A		
Stream B-AD	0.4	0.2	2.45	0.28	C	11%	[Stream B-A D]	0.4	0.6	2.32	0.30	C	15%	[Stream B-A D]	0.2	0.5	1.00	0.16	B	64%	[Stream B-A D]
Stream A-BCD	0.0	0.5	6.73	0.01	A	1.22	A	0.0	0.5	6.71	0.00	A	1.25	A	0.0	0.5	5.79	0.00	A	1.03	A
Stream D-ABC	0.0	0.5	1.40	0.03	B			0.0	0.5	1.38	0.03	B			0.0	0.5	1.04	0.03	B		
Stream C-ABD	0.2	0.5	8.90	0.16	A			0.1	0.5	7.81	0.10	A			0.1	0.5	6.73	0.10	A		
<b>2037</b>																					
Stream B-CD	0.2	0.5	8.91	0.17	A			0.2	0.6	8.95	0.18	A			0.1	0.5	6.58	0.10	A		
Stream B-AD	0.4	0.6	2.52	0.31	D	8%	[Stream B-A D]	0.5	0.8	2.53	0.32	C	13%	[Stream B-A D]	0.2	0.6	1.35	0.17	B	59%	[Stream B-A D]
Stream A-BCD	0.0	0.5	6.85	0.01	A	1.32	A	0.0	0.5	6.77	0.00	A	1.29	A	0.0	0.5	5.84	0.00	A	1.04	A
Stream D-ABC	0.0	0.5	1.48	0.04	B			0.0	0.5	1.55	0.03	B			0.0	0.5	1.70	0.03	B		
Stream C-ABD	0.2	0.5	9.11	0.17	A			0.1	0.5	7.92	0.11	A			0.1	0.5	6.81	0.10	A		
<b>2037+dependent</b>																					
Stream B-CD	0.3	0.2	1.98	0.21	B	-5%	[Stream B-AD]	0.3	0.3	1.96	0.23	B	-1%	[Stream B-AD]	0.2	0.0	7.95	0.18	A	39%	[Stream B-AD]
Stream B-AD	0.9	0.0	4.73	0.47	E			0.9	0.4	3.81	0.48	E			0.2	0.5	1.49	0.15	B	1.35	A
<b>2037+dependent</b>																					
Stream B-CD	0.2	0.5	1.98	0.21	B			0.3	0.3	1.96	0.23	B			0.2	0.0	7.95	0.18	A	39%	[Stream B-AD]
Stream B-AD	0.9	0.0	4.73	0.47	E			0.9	0.4	3.81	0.48	E			0.2	0.5	1.49	0.15	B	1.35	A

Stre am A-BCD	0 . 0 7 0 0 . 5 4 1 0 . 1 0	A		A D]	0 0 8 0 . 5 . 0 9 0 1 . 1 0 0	A		A D]	0 0 6 0 . 5 . 2 4 0 0 . 0 0	A		A D]	0 . 0 0 0 ~ 1 . 0 0 0 0 . 0 0 0	A		
Stre am D-ABC	0 0 1 0 . 0 5 . 5 3 4	C			0 0 1 0 . 0 5 . 9 4 4	C			0 0 1 0 . 0 5 . 1 6 4	B			0 . 0 0 0 ~ 1 . 0 0 0 0 . 0 0 0	A		
Stre am C-ABD	0 1 1 0 . 2 . 1 8 0	B			0 0 9 0 . 1 5 . 0 1 2	A			0 0 8 0 . 2 6 . 4 3 7	A			0 0 4 0 . 5 . 9 3 1	A		

2023LG

Stre am B-CD	0 0 8 0 . 2 . 0 1 4	A			0 0 8 0 . 2 5 . 1 1 5 5	A			0 0 6 0 . 1 5 . 3 3 9	A			0 0 4 0 . 5 . 5 0 1	A		
Stre am B-AD	0 1 1 0 . 3 4 . 3 7 4	C		1 7 %	0 1 1 0 . 4 0 . 5 7 7	C		2 2 %	0 0 1 0 . 2 5 . 4 2 5	B		7 3 %	0 0 5 0 . 5 . 9 1	A		
Stre am A-BCD	D 1 3 0 0 6 0 . 0 5 . 5 7 1	A	1. 1 2	A [Stre am B-A D]	D 1 4 0 0 6 0 . 0 5 . 5 3 0	A	1. 1 3	A [Stre am B-A D]	D 1 5 0 0 5 0 . 0 5 . 7 1 0	A	0. 9 9	A [Stre am B-A D]	D 1 6 0 ~ 1 . 0 0 0 0	A	0. 5 8	A 9 0 0 %
Stre am D-ABC	0 0 1 0 . 0 5 . 0 3 3	B			0 0 1 0 . 0 5 . 2 6 3	B			0 0 9 0 . 0 5 . 9 3 3	A			0 ~ 1 . 0 0 0 0	A		
Stre am C-ABD	0 0 8 0 . 2 . 5 1 5	A			0 0 7 0 . 1 5 . 5 4 9	A			0 0 6 0 . 1 5 . 5 9 9	A			0 0 4 0 . 5 . 9 1 1	A		

2023LG

Stre am B-CD	0 0 7 0 . 2 . 9 1 4	A			0 0 7 0 . 2 5 . 9 1 5	A			0 0 6 0 . 1 5 . 2 8 9	A			0 0 4 0 . 5 . 5 0 1	A		
Stre am B-AD	0 1 1 0 . 3 4 . 7 8 4	C		1 9 %	0 1 1 0 . 3 4 . 6 5 5	C		2 5 %	0 0 1 0 . 2 5 . 2 4 4	B		7 6 %	0 0 5 0 . 5 . 9 1	A		
Stre am A-BCD	D 1 7 0 0 6 0 . 0 5 . 5 3 1	A	1. 1 0	A [Stre am B-A D]	D 1 8 0 0 6 0 . 0 5 . 4 6 0	A	1. 0 9	A [Stre am B-A D]	D 1 9 0 0 5 0 . 0 5 . 6 7 0	A	0. 9 7	A [Stre am B-A D]	D 2 0 0 ~ 1 . 0 0 0 0	A	0. 5 9	A 9 0 0 %
Stre am D-ABC	0 0 1 0 . 0 5 . 8 1 3	B			0 0 1 0 . 0 5 . 9 4 3	B			0 0 9 0 . 0 5 . 8 1 3	A			0 ~ 1 . 0 0 0 0	A		
Stre am C-ABD	0 0 8 0 . 2 . 5 4 2 1 5	A			0 0 7 0 . 1 5 . 4 5 9	A			0 0 6 0 . 1 5 . 5 4 9	A			0 0 4 0 . 5 . 9 0 1	A		

2023HG

Stre am B-CD	D 2 1 0 0 9 0 . 2 . 1 5 7	A	1. 3 8	A [Stre am B-AD]	D 2 2 0 1 9 0 . 2 . 0 6 9	A	1. 4 1	A [Stre am B-AD]	D 2 3 0 0 6 0 . 1 5 . 5 1 1	A	1. 0 6	A [Stre am B-AD]	D 2 4 0 0 4 0 . 5 . 2 1 1	A	0. 5 9	A 9 0 0 %
Stre am B-AD	0 1 2 0 . 5 8 . 8 7 3	D			0 2 2 0 . 5 3 . 3 5	C			0 0 1 0 . 2 8 . 6 0	B			0 0 5 0 . 5 . 6 2 1	A		

Stream A-BCD	0.0	0.5	6.92	0.01	A					A D]	0.0	0.5	6.90	0.00	A					A D]	0.0	0.5	5.88	0.00	A					B-A D]	0.0	~1	0.00	0.00	A																
Stream D-ABC	0.0	0.5	1.457	0.04	B						0.0	0.5	1.425	0.03	B						0.0	0.5	1.084	0.03	B						0.0	~1	0.00	0.00	A																
Stream C-ABD	0.2	0.7	9.29	0.17	A						0.1	0.5	8.011	0.11	A						0.1	0.5	6.86	0.10	A						0.0	0.5	4.92	0.01	A																
<b>2037HG</b>																																																			
Stream B-CD	0.7	2.1	2.881	0.42	D						0.9	3.6	3.499	0.50	D						0.1	0.5	7.56	0.13	A						0.0	0.5	4.59	0.01	A																
Stream B-AD	2.3	1.02	1.234	0.74	F					- 12 %	2.6	1.23	1.087	0.77	F						- 11 %	0.3	1.4	1.501	0.24	C					3 1 %	0.0	0.5	5.63	0.01	A															
Stream A-BCD	D 2 5	0.0	0.5	7.692	0.02	A				4.37	A	[S	D 2 6	0.0	0.5	7.000	0.00	A			5.04	A	[S	D 2 7	0.0	0.5	6.240	0.00	A			1.19	A	[S	D 2 8	0.0	~1	0.00	0.00	A					0.56	A					9 0 0 %
Stream D-ABC		0.1	0.52	2.607	0.07	D							0.1	0.5	2.33	0.06	C						[S	0.0	0.5	2.29	0.04	B						0.0	~1	0.00	0.00	A													
Stream C-ABD		0.3	1.146	1.122	0.22	B							0.2	0.5	9.42	0.14	A							0.1	0.5	7.45	0.12	A						0.0	0.5	4.95	0.01	A													

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

## File summary

### File Description

Title	A614/ A617 impts
Location	A614/ Mickledale Lane
Site number	J2
Date	22/11/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NCCADMIN\br18
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
----------------	-------------	---------------------	-----------------------	------------	---------------------	-------------------	---------------------

m	kph	PCU	PCU	perHour	s	-Min	perMin

The junction diagram reflects the last run of Junctions.

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓
D9	2037+dependent	AM	ONE HOUR	07:45	09:15	15	✓
D10	2037+dependent	PM	ONE HOUR	16:45	18:15	15	✓
D11	2037+dependent	IP	ONE HOUR	12:45	14:15	15	✓
D12	2037+dependent	OP	ONE HOUR	22:45	00:15	15	✓

D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

### Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

## 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.22	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	11	Stream B-AD

## Arms

### Arms

Arm	Name	Description	Arm type
A	A614N		Major
B	Deerdale Lane E		Minor
C	A614S		Major
D	Deerdale Lane W		Minor

## Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	11.00		✓	3.50	220.0	✓	20.00
C	11.00		✓	3.50	150.0	✓	25.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

## Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare		10.00	10.00	7.20	4.90	3.30		1.00	110	195
D	One lane	3.00								130	50

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
A-D	801	-	-	-	-	-	-	0.243	0.347	0.243	-	-	-
B-A	665	0.095	0.239	0.239	-	-	-	0.151	0.342	-	0.239	0.239	0.120
B-C	836	0.100	0.253	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	686	0.098	0.247	0.247	-	-	-	0.156	0.353	0.156	-	-	-
B-D, offside lane	665	0.095	0.239	0.239	-	-	-	0.151	0.342	0.151	-	-	-
C-B	754	0.229	0.229	0.327	-	-	-	-	-	-	-	-	-
D-A	655	-	-	-	-	-	-	0.199	-	0.079	-	-	-
D-B, nearside lane	545	0.124	0.124	0.280	-	-	-	0.196	0.196	0.078	-	-	-
D-B, offside lane	545	0.124	0.124	0.280	-	-	-	0.196	0.196	0.078	-	-	-
D-C	545	-	0.124	0.280	0.098	0.196	0.196	0.196	0.196	0.078	-	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1076	100.000
B		ONE HOUR	✓	127	100.000
C		ONE HOUR	✓	944	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

## Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	91	980	5
B	56	0	71	0
C	867	71	0	6
D	4	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.16	8.49	0.2	0.5	A	65	98
B-AD	0.28	22.45	0.4	1.2	C	51	77
A-BCD	0.01	6.73	0.0	0.5	A	5	7
A-B						84	125
A-C						899	1349
D-ABC	0.03	14.06	0.0	0.5	B	7	11
C-ABD	0.16	8.90	0.2	0.5	A	65	98
C-D						6	8
C-A						796	1193

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	53	13	622	0.086	53	0.0	0.1	6.320	A
B-AD	42	11	363	0.116	42	0.0	0.1	11.199	B
A-BCD	4	0.94	623	0.006	4	0.0	0.0	5.817	A
A-B	69	17			69				
A-C	738	184			738				
D-ABC	6	2	381	0.016	6	0.0	0.0	9.591	A
C-ABD	53	13	569	0.094	53	0.0	0.1	6.971	A
C-D	5	1			5				

C-A	653	163			653				
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### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	576	0.111	64	0.1	0.1	7.021	A
B-AD	50	13	304	0.166	50	0.1	0.2	14.183	B
A-BCD	4	1	588	0.008	4	0.0	0.0	6.170	A
A-B	82	20			82				
A-C	881	220			881				
D-ABC	7	2	334	0.022	7	0.0	0.0	10.998	B
C-ABD	64	16	533	0.120	64	0.1	0.1	7.674	A
C-D	5	1			5				
C-A	779	195			779				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	78	20	503	0.155	78	0.1	0.2	8.462	A
B-AD	62	15	222	0.278	61	0.2	0.4	22.270	C
A-BCD	6	1	540	0.010	5	0.0	0.0	6.734	A
A-B	100	25			100				
A-C	1079	270			1079				
D-ABC	9	2	265	0.033	9	0.0	0.0	14.051	B
C-ABD	78	20	483	0.162	78	0.1	0.2	8.886	A
C-D	7	2			7				
C-A	955	239			955				

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	78	20	502	0.156	78	0.2	0.2	8.491	A
B-AD	62	15	222	0.278	62	0.4	0.4	22.453	C
A-BCD	6	1	540	0.010	6	0.0	0.0	6.735	A
A-B	100	25			100				
A-C	1079	270			1079				
D-ABC	9	2	265	0.033	9	0.0	0.0	14.062	B
C-ABD	78	20	483	0.162	78	0.2	0.2	8.895	A
C-D	7	2			7				
C-A	955	239			955				

### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	575	0.111	64	0.2	0.1	7.048	A
B-AD	50	13	304	0.166	51	0.4	0.2	14.284	B
A-BCD	4	1	588	0.008	5	0.0	0.0	6.174	A
A-B	82	20			82				
A-C	881	220			881				
D-ABC	7	2	334	0.022	7	0.0	0.0	11.011	B
C-ABD	64	16	533	0.120	64	0.2	0.1	7.687	A
C-D	5	1			5				
C-A	779	195			779				



09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	53	13	622	0.086	54	0.1	0.1	6.339	A
B-AD	42	11	363	0.116	42	0.2	0.1	11.253	B
A-BCD	4	0.94	622	0.006	4	0.0	0.0	5.819	A
A-B	69	17			69				
A-C	738	184			738				
D-ABC	6	2	381	0.016	6	0.0	0.0	9.601	A
C-ABD	53	13	569	0.094	54	0.1	0.1	6.992	A
C-D	5	1			5				
C-A	653	163			653				

Queue Variation Results for each time segment

07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.37	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.19	0.03	0.26	0.46	0.49			N/A	N/A

08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.38	0.03	0.32	1.17	1.17			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.19	0.03	0.26	0.46	0.49			N/A	N/A

08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

## 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.25	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	15	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	956	100.000

B		ONE HOUR	✓	148	100.000
C		ONE HOUR	✓	963	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		A	B	C	D	
From	A	0	63	892	1	
	B	69	0	76	3	
	C	902	48	0	13	
	D	4	3	1	0	

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		A	B	C	D	
From	A	0	0	0	0	
	B	0	0	0	0	
	C	0	0	0	0	
	D	0	0	0	0	

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.17	8.71	0.2	0.5	A	71	107
B-AD	0.30	20.32	0.4	1.6	C	64	97
A-BCD	0.00	6.71	0.0	0.5	A	0.92	1
A-B						58	87
A-C						819	1228
D-ABC	0.03	13.18	0.0	0.5	B	7	11
C-ABD	0.10	7.81	0.1	0.5	A	44	66
C-D						12	18
C-A						828	1242

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	58	15	620	0.094	58	0.0	0.1	6.405	A

B-AD	53	13	388	0.137	52	0.0	0.2	10.719	B
A-BCD	0.75	0.19	621	0.001	0.75	0.0	0.0	5.804	A
A-B	47	12			47				
A-C	672	168			672				
D-ABC	6	2	390	0.015	6	0.0	0.0	9.375	A
C-ABD	36	9	590	0.061	36	0.0	0.1	6.497	A
C-D	10	2			10				
C-A	679	170			679				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	70	17	574	0.122	70	0.1	0.1	7.134	A
B-AD	63	16	332	0.190	63	0.2	0.2	13.370	B
A-BCD	0.90	0.22	586	0.002	0.90	0.0	0.0	6.153	A
A-B	57	14			57				
A-C	802	200			802				
D-ABC	7	2	346	0.021	7	0.0	0.0	10.618	B
C-ABD	43	11	558	0.077	43	0.1	0.1	6.995	A
C-D	12	3			12				
C-A	811	203			811				

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	86	21	500	0.172	86	0.1	0.2	8.683	A
B-AD	77	19	254	0.303	76	0.2	0.4	20.163	C
A-BCD	1	0.28	538	0.002	1	0.0	0.0	6.708	A
A-B	69	17			69				
A-C	982	246			982				
D-ABC	9	2	282	0.031	9	0.0	0.0	13.170	B
C-ABD	53	13	514	0.103	53	0.1	0.1	7.811	A
C-D	14	4			14				
C-A	993	248			993				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	86	21	499	0.172	86	0.2	0.2	8.715	A
B-AD	77	19	254	0.303	77	0.4	0.4	20.324	C
A-BCD	1	0.28	538	0.002	1	0.0	0.0	6.709	A
A-B	69	17			69				
A-C	982	246			982				
D-ABC	9	2	282	0.031	9	0.0	0.0	13.176	B
C-ABD	53	13	514	0.103	53	0.1	0.1	7.814	A
C-D	14	4			14				
C-A	993	248			993				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	70	17	573	0.122	70	0.2	0.1	7.161	A
B-AD	63	16	332	0.190	64	0.4	0.2	13.467	B
A-BCD	0.90	0.22	586	0.002	0.90	0.0	0.0	6.153	A

A-B	57	14			57				
A-C	802	200			802				
D-ABC	7	2	346	0.021	7	0.0	0.0	10.623	B
C-ABD	43	11	558	0.077	43	0.1	0.1	7.001	A
C-D	12	3			12				
C-A	811	203			811				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	58	15	619	0.095	59	0.1	0.1	6.428	A
B-AD	53	13	388	0.137	53	0.2	0.2	10.777	B
A-BCD	0.75	0.19	621	0.001	0.75	0.0	0.0	5.808	A
A-B	47	12			47				
A-C	672	168			672				
D-ABC	6	2	390	0.015	6	0.0	0.0	9.380	A
C-ABD	36	9	590	0.061	36	0.1	0.1	6.504	A
C-D	10	2			10				
C-A	679	170			679				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

#### 17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.23	0.00	0.00	0.23	0.23			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.08	0.03	0.26	0.47	0.50			N/A	N/A

#### 17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.42	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.03	0.26	0.47	0.49			N/A	N/A

#### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.03	0.26	0.47	0.50			N/A	N/A

B-AD	0.43	0.03	0.32	1.36	1.63			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.03	0.25	0.45	0.48			N/A	N/A

#### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.24	0.00	0.00	0.24	0.24			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

#### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

## 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.03	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	64	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	648	100.000
B		ONE HOUR	✓	113	100.000
C		ONE HOUR	✓	639	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	D
From A	0	57	589	2
From B	57	0	54	2
From C	585	51	0	3
From D	3	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	D
From A	0	0	0	0
From B	0	0	0	0
From C	0	0	0	0
From D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.10	6.49	0.1	0.5	A	51	76
B-AD	0.16	11.00	0.2	0.5	B	53	80
A-BCD	0.00	5.79	0.0	0.5	A	2	3
A-B						52	78
A-C						540	811
D-ABC	0.03	10.48	0.0	0.5	B	9	14
C-ABD	0.10	6.73	0.1	0.5	A	47	70
C-D						3	4
C-A						537	805

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	41	10	684	0.061	41	0.0	0.1	5.597	A
B-AD	44	11	481	0.091	43	0.0	0.1	8.207	A
A-BCD	2	0.38	680	0.002	1	0.0	0.0	5.306	A
A-B	43	11			43				
A-C	443	111			443				
D-ABC	8	2	426	0.018	7	0.0	0.0	8.594	A
C-ABD	38	10	643	0.060	38	0.0	0.1	5.952	A
C-D	2	0.56			2				
C-A	440	110			440				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	12	656	0.076	49	0.1	0.1	5.936	A
B-AD	52	13	443	0.117	52	0.1	0.1	9.191	A
A-BCD	2	0.45	656	0.003	2	0.0	0.0	5.499	A
A-B	51	13			51				
A-C	529	132			529				
D-ABC	9	2	396	0.023	9	0.0	0.0	9.289	A
C-ABD	46	11	621	0.074	46	0.1	0.1	6.259	A
C-D	3	0.67			3				
C-A	526	131			526				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	61	15	616	0.099	61	0.1	0.1	6.485	A
B-AD	64	16	391	0.163	63	0.1	0.2	10.987	B
A-BCD	2	0.55	624	0.004	2	0.0	0.0	5.790	A
A-B	63	16			63				
A-C	649	162			649				
D-ABC	11	3	355	0.031	11	0.0	0.0	10.472	B
C-ABD	56	14	591	0.095	56	0.1	0.1	6.730	A
C-D	3	0.83			3				
C-A	644	161			644				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	61	15	615	0.099	61	0.1	0.1	6.490	A
B-AD	64	16	391	0.163	64	0.2	0.2	11.002	B
A-BCD	2	0.55	624	0.004	2	0.0	0.0	5.790	A
A-B	63	16			63				
A-C	649	162			649				
D-ABC	11	3	355	0.031	11	0.0	0.0	10.476	B
C-ABD	56	14	591	0.095	56	0.1	0.1	6.730	A
C-D	3	0.83			3				
C-A	644	161			644				



13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	12	656	0.076	50	0.1	0.1	5.941	A
B-AD	52	13	443	0.117	52	0.2	0.1	9.209	A
A-BCD	2	0.45	656	0.003	2	0.0	0.0	5.502	A
A-B	51	13			51				
A-C	529	132			529				
D-ABC	9	2	396	0.023	9	0.0	0.0	9.293	A
C-ABD	46	11	621	0.074	46	0.1	0.1	6.263	A
C-D	3	0.67			3				
C-A	526	131			526				

14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	41	10	683	0.061	42	0.1	0.1	5.610	A
B-AD	44	11	481	0.091	44	0.1	0.1	8.228	A
A-BCD	2	0.38	680	0.002	2	0.0	0.0	5.307	A
A-B	43	11			43				
A-C	443	111			443				
D-ABC	8	2	426	0.018	8	0.0	0.0	8.601	A
C-ABD	38	10	643	0.060	38	0.1	0.1	5.958	A
C-D	2	0.56			2				
C-A	440	110			440				

Queue Variation Results for each time segment

12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.06	0.00	0.00	0.06	0.06			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.08	0.03	0.26	0.46	0.48			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.19	0.03	0.26	0.46	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A

C-ABD	0.10	0.03	0.26	0.47	0.49			N/A	N/A
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### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.19	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.03	0.25	0.45	0.48			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

## 2023, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand



## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	800	0.005	4	0.0	0.0	4.523	A
B-AD	5	1	665	0.007	4	0.0	0.0	5.451	A
A-BCD	0	0	1578	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	44	11			44				
D-ABC	0	0	555	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.867	A
C-D	0	0			0				
C-A	43	11			43				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	797	0.006	4	0.0	0.0	4.541	A
B-AD	5	1	661	0.008	5	0.0	0.0	5.489	A
A-BCD	0	0	1573	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	52	13			52				
D-ABC	0	0	552	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	4	0.0	0.0	4.886	A
C-D	0	0			0				
C-A	51	13			51				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	794	0.007	5	0.0	0.0	4.567	A
B-AD	7	2	656	0.010	7	0.0	0.0	5.543	A
A-BCD	0	0	1567	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	64	16			64				
D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	738	0.007	5	0.0	0.0	4.912	A
C-D	0	0			0				
C-A	63	16			63				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	794	0.007	6	0.0	0.0	4.567	A
B-AD	7	2	656	0.010	7	0.0	0.0	5.543	A
A-BCD	0	0	1567	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	64	16			64				

D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	738	0.007	6	0.0	0.0	4.912	A
C-D	0	0			0				
C-A	63	16			63				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	797	0.006	5	0.0	0.0	4.542	A
B-AD	5	1	661	0.008	5	0.0	0.0	5.489	A
A-BCD	0	0	1573	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	52	13			52				
D-ABC	0	0	552	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	5	0.0	0.0	4.888	A
C-D	0	0			0				
C-A	51	13			51				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	799	0.005	4	0.0	0.0	4.523	A
B-AD	5	1	665	0.007	5	0.0	0.0	5.451	A
A-BCD	0	0	1578	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	44	11			44				
D-ABC	0	0	555	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.869	A
C-D	0	0			0				
C-A	43	11			43				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.32	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1113	100.000
B		ONE HOUR	✓	131	100.000
C		ONE HOUR	✓	977	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	92	1016	5
	B	58	0	73	0
	C	898	73	0	6
	D	4	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.17	8.91	0.2	0.5	A	67	100
B-AD	0.31	25.25	0.4	1.6	D	53	80

A-BCD	0.01	6.85	0.0	0.5	A	5	7
A-B						84	127
A-C						932	1398
D-ABC	0.04	14.89	0.0	0.5	B	7	11
C-ABD	0.17	9.16	0.2	0.5	A	67	100
C-D						6	8
C-A						824	1236

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	55	14	614	0.090	55	0.0	0.1	6.432	A
B-AD	44	11	352	0.124	43	0.0	0.1	11.629	B
A-BCD	4	0.94	616	0.006	4	0.0	0.0	5.876	A
A-B	69	17			69				
A-C	765	191			765				
D-ABC	6	2	373	0.016	6	0.0	0.0	9.808	A
C-ABD	55	14	562	0.098	55	0.0	0.1	7.083	A
C-D	5	1			5				
C-A	676	169			676				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	66	16	565	0.116	65	0.1	0.1	7.198	A
B-AD	52	13	291	0.179	52	0.1	0.2	15.030	C
A-BCD	4	1	580	0.008	4	0.0	0.0	6.249	A
A-B	83	21			83				
A-C	913	228			913				
D-ABC	7	2	324	0.022	7	0.0	0.0	11.362	B
C-ABD	66	16	525	0.125	65	0.1	0.1	7.830	A
C-D	5	1			5				
C-A	807	202			807				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	80	20	486	0.165	80	0.1	0.2	8.870	A
B-AD	64	16	206	0.310	63	0.2	0.4	24.967	C
A-BCD	6	1	531	0.010	5	0.0	0.0	6.850	A
A-B	101	25			101				
A-C	1119	280			1119				
D-ABC	9	2	251	0.035	9	0.0	0.0	14.875	B
C-ABD	80	20	474	0.170	80	0.1	0.2	9.145	A
C-D	7	2			7				
C-A	989	247			989				

### 08:30 - 08:45



Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	80	20	484	0.166	80	0.2	0.2	8.911	A
B-AD	64	16	206	0.310	64	0.4	0.4	25.248	D
A-BCD	6	1	531	0.010	6	0.0	0.0	6.851	A
A-B	101	25			101				
A-C	1119	280			1119				
D-ABC	9	2	251	0.035	9	0.0	0.0	14.893	B
C-ABD	80	20	474	0.170	80	0.2	0.2	9.156	A
C-D	7	2			7				
C-A	989	247			989				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	66	16	564	0.116	66	0.2	0.1	7.232	A
B-AD	52	13	291	0.179	53	0.4	0.2	15.163	C
A-BCD	4	1	580	0.008	5	0.0	0.0	6.251	A
A-B	83	21			83				
A-C	913	228			913				
D-ABC	7	2	324	0.022	7	0.0	0.0	11.375	B
C-ABD	66	16	525	0.125	66	0.2	0.1	7.845	A
C-D	5	1			5				
C-A	807	202			807				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	55	14	613	0.090	55	0.1	0.1	6.453	A
B-AD	44	11	352	0.124	44	0.2	0.1	11.693	B
A-BCD	4	0.94	616	0.006	4	0.0	0.0	5.880	A
A-B	69	17			69				
A-C	765	191			765				
D-ABC	6	2	373	0.016	6	0.0	0.0	9.818	A
C-ABD	55	14	562	0.098	55	0.1	0.1	7.098	A
C-D	5	1			5				
C-A	676	169			676				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

B-AD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

#### 08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.43	0.03	0.26	0.47	0.58			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.04	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.20	0.03	0.26	0.46	0.49			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.44	0.03	0.33	1.38	1.63			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.20	0.03	0.26	0.47	0.50			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.22	0.00	0.00	0.22	0.22			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.14	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

## 2037, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.29	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	13	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	977	100.000
B		ONE HOUR	✓	150	100.000
C		ONE HOUR	✓	982	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	65	911	1
	B	70	0	77	3
	C	920	49	0	13
	D	4	3	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.18	8.95	0.2	0.6	A	72	109
B-AD	0.32	21.53	0.5	1.8	C	65	98
A-BCD	0.00	6.77	0.0	0.5	A	0.92	1
A-B						60	89
A-C						836	1254
D-ABC	0.03	13.55	0.0	0.5	B	7	11
C-ABD	0.11	7.92	0.1	0.5	A	45	67
C-D						12	18
C-A						844	1266

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	59	15	615	0.096	59	0.0	0.1	6.465	A
B-AD	54	13	382	0.141	53	0.0	0.2	10.936	B
A-BCD	0.75	0.19	617	0.001	0.75	0.0	0.0	5.838	A
A-B	49	12			49				
A-C	686	171			686				
D-ABC	6	2	385	0.016	6	0.0	0.0	9.486	A
C-ABD	37	9	586	0.063	37	0.0	0.1	6.549	A
C-D	10	2			10				
C-A	693	173			693				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	71	18	568	0.125	71	0.1	0.1	7.232	A
B-AD	64	16	325	0.197	64	0.2	0.2	13.779	B
A-BCD	0.90	0.22	582	0.002	0.90	0.0	0.0	6.198	A
A-B	58	15			58				
A-C	819	205			819				
D-ABC	7	2	341	0.021	7	0.0	0.0	10.797	B
C-ABD	44	11	553	0.080	44	0.1	0.1	7.067	A
C-D	12	3			12				
C-A	827	207			827				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	87	22	490	0.177	87	0.1	0.2	8.910	A
B-AD	78	20	245	0.319	77	0.2	0.5	21.327	C
A-BCD	1	0.28	532	0.002	1	0.0	0.0	6.774	A
A-B	72	18			72				
A-C	1003	251			1003				
D-ABC	9	2	275	0.032	9	0.0	0.0	13.541	B

C-ABD	54	13	508	0.106	54	0.1	0.1	7.921	A
C-D	14	4			14				
C-A	1013	253			1013				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	87	22	489	0.178	87	0.2	0.2	8.948	A
B-AD	78	20	245	0.319	78	0.5	0.5	21.525	C
A-BCD	1	0.28	532	0.002	1	0.0	0.0	6.775	A
A-B	72	18			72				
A-C	1003	251			1003				
D-ABC	9	2	275	0.032	9	0.0	0.0	13.546	B
C-ABD	54	13	508	0.106	54	0.1	0.1	7.924	A
C-D	14	4			14				
C-A	1013	253			1013				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	71	18	567	0.125	71	0.2	0.1	7.264	A
B-AD	64	16	325	0.197	65	0.5	0.3	13.891	B
A-BCD	0.90	0.22	582	0.002	0.90	0.0	0.0	6.198	A
A-B	58	15			58				
A-C	819	205			819				
D-ABC	7	2	341	0.021	7	0.0	0.0	10.803	B
C-ABD	44	11	553	0.080	44	0.1	0.1	7.070	A
C-D	12	3			12				
C-A	827	207			827				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	59	15	614	0.096	59	0.1	0.1	6.487	A
B-AD	54	13	382	0.141	54	0.3	0.2	10.997	B
A-BCD	0.75	0.19	617	0.001	0.75	0.0	0.0	5.841	A
A-B	49	12			49				
A-C	686	171			686				
D-ABC	6	2	385	0.016	6	0.0	0.0	9.491	A
C-ABD	37	9	586	0.063	37	0.1	0.1	6.559	A
C-D	10	2			10				
C-A	693	173			693				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.24	0.00	0.00	0.24	0.24			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.09	0.03	0.26	0.46	0.49			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.45	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.12	0.03	0.26	0.47	0.49			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.03	0.27	0.48	0.65			N/A	N/A
B-AD	0.46	0.03	0.32	1.41	1.81			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.12	0.03	0.25	0.45	0.48			N/A	N/A

17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.25	0.00	0.00	0.25	0.25			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.17	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

# 2037, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.

Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.04	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	59	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	669	100.000
B		ONE HOUR	✓	115	100.000
C		ONE HOUR	✓	659	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	58	609	2
	B	58	0	55	2
	C	603	52	0	4
	D	3	2	5	0

## Vehicle Mix

## Heavy Vehicle Percentages

	To			
	A	B	C	D
From A	0	0	0	0
From B	0	0	0	0
From C	0	0	0	0
From D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.10	6.58	0.1	0.5	A	52	77
B-AD	0.17	11.35	0.2	0.6	B	54	81
A-BCD	0.00	5.84	0.0	0.5	A	2	3
A-B						53	80
A-C						559	838
D-ABC	0.03	10.70	0.0	0.5	B	9	14
C-ABD	0.10	6.81	0.1	0.5	A	48	72
C-D						4	6
C-A						553	830

### Main Results for each time segment

#### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	42	11	680	0.062	42	0.0	0.1	5.642	A
B-AD	44	11	475	0.093	44	0.0	0.1	8.338	A
A-BCD	2	0.38	676	0.002	1	0.0	0.0	5.335	A
A-B	44	11			44				
A-C	458	115			458				
D-ABC	8	2	422	0.018	7	0.0	0.0	8.692	A
C-ABD	39	10	639	0.061	39	0.0	0.1	5.996	A
C-D	3	0.75			3				
C-A	454	113			454				

#### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	13	651	0.078	50	0.1	0.1	5.997	A
B-AD	53	13	436	0.121	53	0.1	0.1	9.388	A
A-BCD	2	0.45	652	0.003	2	0.0	0.0	5.537	A
A-B	52	13			52				
A-C	547	137			547				
D-ABC	9	2	391	0.023	9	0.0	0.0	9.427	A



C-ABD	47	12	617	0.076	47	0.1	0.1	6.316	A
C-D	4	0.90			4				
C-A	542	136			542				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	609	0.102	62	0.1	0.1	6.579	A
B-AD	65	16	382	0.170	65	0.1	0.2	11.333	B
A-BCD	2	0.55	618	0.004	2	0.0	0.0	5.841	A
A-B	64	16			64				
A-C	671	168			671				
D-ABC	11	3	348	0.032	11	0.0	0.0	10.693	B
C-ABD	57	14	586	0.098	57	0.1	0.1	6.809	A
C-D	4	1			4				
C-A	664	166			664				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	608	0.102	62	0.1	0.1	6.585	A
B-AD	65	16	382	0.170	65	0.2	0.2	11.350	B
A-BCD	2	0.55	618	0.004	2	0.0	0.0	5.841	A
A-B	64	16			64				
A-C	671	168			671				
D-ABC	11	3	348	0.032	11	0.0	0.0	10.697	B
C-ABD	57	14	586	0.098	57	0.1	0.1	6.812	A
C-D	4	1			4				
C-A	664	166			664				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	13	650	0.078	51	0.1	0.1	6.005	A
B-AD	53	13	436	0.121	53	0.2	0.1	9.406	A
A-BCD	2	0.45	652	0.003	2	0.0	0.0	5.537	A
A-B	52	13			52				
A-C	547	137			547				
D-ABC	9	2	391	0.023	9	0.0	0.0	9.433	A
C-ABD	47	12	617	0.076	47	0.1	0.1	6.318	A
C-D	4	0.90			4				
C-A	542	136			542				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	42	11	679	0.062	42	0.1	0.1	5.652	A
B-AD	44	11	475	0.093	44	0.1	0.1	8.360	A
A-BCD	2	0.38	676	0.002	2	0.0	0.0	5.336	A
A-B	44	11			44				
A-C	458	115			458				
D-ABC	8	2	421	0.018	8	0.0	0.0	8.699	A
C-ABD	39	10	639	0.061	39	0.1	0.1	6.002	A
C-D	3	0.75			3				

C-A	454	113			454				
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### Queue Variation Results for each time segment

#### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

#### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.08	0.03	0.26	0.47	0.49			N/A	N/A

#### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.20	0.03	0.26	0.46	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.03	0.26	0.47	0.49			N/A	N/A

#### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.20	0.03	0.26	0.48	0.62			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.03	0.25	0.45	0.48			N/A	N/A

#### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

#### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

## 2037, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.57	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	66	100.000
B		ONE HOUR	✓	11	100.000
C		ONE HOUR	✓	64	100.000
D		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	6	60	0
B	6	0	5	0
C	59	5	0	0
D	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.57	0.0	0.5	A	5	7
B-AD	0.01	5.55	0.0	0.5	A	6	8
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						6	8
A-C						55	83
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	4.92	0.0	0.5	A	5	7
C-D						0	0
C-A						54	81

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	799	0.005	4	0.0	0.0	4.525	A
B-AD	5	1	664	0.007	4	0.0	0.0	5.456	A
A-BCD	0	0	1577	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	45	11			45				
D-ABC	0	0	554	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.869	A
C-D	0	0			0				

C-A	44	11			44				
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23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	797	0.006	4	0.0	0.0	4.544	A
B-AD	5	1	660	0.008	5	0.0	0.0	5.495	A
A-BCD	0	0	1572	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	54	13			54				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	4	0.0	0.0	4.889	A
C-D	0	0			0				
C-A	53	13			53				

23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	793	0.007	5	0.0	0.0	4.570	A
B-AD	7	2	655	0.010	7	0.0	0.0	5.551	A
A-BCD	0	0	1566	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	66	17			66				
D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	738	0.007	5	0.0	0.0	4.916	A
C-D	0	0			0				
C-A	65	16			65				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	793	0.007	6	0.0	0.0	4.570	A
B-AD	7	2	655	0.010	7	0.0	0.0	5.550	A
A-BCD	0	0	1566	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	66	17			66				
D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	738	0.007	6	0.0	0.0	4.916	A
C-D	0	0			0				
C-A	65	16			65				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	797	0.006	5	0.0	0.0	4.546	A
B-AD	5	1	660	0.008	5	0.0	0.0	5.495	A
A-BCD	0	0	1572	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	54	13			54				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	5	0.0	0.0	4.889	A
C-D	0	0			0				
C-A	53	13			53				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	799	0.005	4	0.0	0.0	4.527	A
B-AD	5	1	664	0.007	5	0.0	0.0	5.458	A
A-BCD	0	0	1577	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	45	11			45				
D-ABC	0	0	554	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.869	A
C-D	0	0			0				
C-A	44	11			44				

Queue Variation Results for each time segment

22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037+dependent, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.94	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-5	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2037+dependent	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1280	100.000
B		ONE HOUR	✓	137	100.000
C		ONE HOUR	✓	1083	100.000

D		ONE HOUR	✓	8	100.000
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## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	104	1170	6
B	63	0	74	0
C	1003	74	0	6
D	4	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	5	15	2
B	2	0	2	0
C	15	5	0	2
D	2	0	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.21	11.98	0.3	1.2	B	68	102
B-AD	0.47	47.39	0.9	4.0	E	58	87
A-BCD	0.01	7.41	0.0	0.5	A	6	8
A-B						95	143
A-C						1074	1610
D-ABC	0.04	19.53	0.0	0.5	C	7	11
C-ABD	0.19	10.80	0.2	1.1	B	68	102
C-D						6	8
C-A						920	1381

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	577	0.097	55	0.0	0.1	7.034	A
B-AD	47	12	313	0.152	47	0.0	0.2	13.776	B
A-BCD	5	1	597	0.008	4	0.0	0.0	6.197	A



A-B	78	20			78				
A-C	881	220			881				
D-ABC	6	2	343	0.018	6	0.0	0.0	10.888	B
C-ABD	56	14	534	0.104	55	0.0	0.1	7.895	A
C-D	5	1			5				
C-A	755	189			755				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	518	0.129	66	0.1	0.1	8.136	A
B-AD	57	14	243	0.233	56	0.2	0.3	19.590	C
A-BCD	5	1	557	0.010	5	0.0	0.0	6.653	A
A-B	93	23			93				
A-C	1052	263			1052				
D-ABC	7	2	286	0.025	7	0.0	0.0	13.178	B
C-ABD	67	17	491	0.136	66	0.1	0.2	8.905	A
C-D	5	1			5				
C-A	902	225			902				

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	394	0.207	81	0.1	0.3	11.717	B
B-AD	69	17	146	0.474	67	0.3	0.8	45.277	E
A-BCD	7	2	502	0.013	7	0.0	0.0	7.404	A
A-B	115	29			115				
A-C	1288	322			1288				
D-ABC	9	2	197	0.045	9	0.0	0.0	19.463	C
C-ABD	81	20	431	0.189	81	0.2	0.2	10.783	B
C-D	7	2			7				
C-A	1104	276			1104				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	388	0.210	81	0.3	0.3	11.977	B
B-AD	69	17	146	0.474	69	0.8	0.9	47.392	E
A-BCD	7	2	502	0.013	7	0.0	0.0	7.405	A
A-B	115	29			115				
A-C	1288	322			1288				
D-ABC	9	2	197	0.045	9	0.0	0.0	19.525	C
C-ABD	81	20	431	0.189	81	0.2	0.2	10.802	B
C-D	7	2			7				
C-A	1104	276			1104				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	514	0.129	67	0.3	0.2	8.225	A
B-AD	57	14	243	0.233	59	0.9	0.3	20.117	C
A-BCD	5	1	557	0.010	5	0.0	0.0	6.656	A
A-B	93	23			93				
A-C	1052	263			1052				

D-ABC	7	2	285	0.025	7	0.0	0.0	13.212	B
C-ABD	67	17	491	0.136	67	0.2	0.2	8.927	A
C-D	5	1			5				
C-A	902	225			902				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	575	0.097	56	0.2	0.1	7.071	A
B-AD	47	12	313	0.152	48	0.3	0.2	13.901	B
A-BCD	5	1	597	0.008	5	0.0	0.0	6.200	A
A-B	78	20			78				
A-C	881	220			881				
D-ABC	6	2	343	0.018	6	0.0	0.0	10.906	B
C-ABD	56	14	533	0.104	56	0.2	0.1	7.918	A
C-D	5	1			5				
C-A	755	189			755				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.30	0.00	0.00	0.30	0.30			N/A	N/A
A-BCD	0.01	0.01	0.26	0.46	0.49			N/A	N/A
D-ABC	0.03	0.03	0.26	0.46	0.49			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

#### 08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.26	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.84	0.03	0.28	0.84	2.89			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.05	0.03	0.26	0.47	0.49			N/A	N/A
C-ABD	0.24	0.03	0.27	0.49	0.51			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.27	0.03	0.30	0.81	1.18			N/A	N/A
B-AD	0.88	0.04	0.35	2.03	4.04			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

D-ABC	0.05	0.00	0.00	0.05	0.05			N/A	N/A
C-ABD	0.24	0.03	0.29	0.62	1.10			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.32	0.03	0.30	0.87	1.20			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.19	0.03	0.27	0.49	0.67			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

## 2037+dependent, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.92	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-1	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037+dependent	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1110	100.000
B		ONE HOUR	✓	161	100.000
C		ONE HOUR	✓	1137	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	71	1038	1
	B	79	0	79	3
	C	1073	50	0	14
	D	5	3	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.23	11.96	0.3	1.3	B	74	111
B-AD	0.48	38.15	0.9	4.4	E	73	110
A-BCD	0.00	8.09	0.0	0.5	A	0.92	1
A-B						65	98
A-C						952	1429
D-ABC	0.04	16.94	0.0	0.5	C	8	12
C-ABD	0.12	9.01	0.1	0.5	A	46	69
C-D						13	19
C-A						985	1477

### Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	61	15	581	0.105	60	0.0	0.1	7.041	A
B-AD	60	15	341	0.177	60	0.0	0.2	13.001	B
A-BCD	0.75	0.19	589	0.001	0.75	0.0	0.0	6.731	A
A-B	53	13			53				
A-C	781	195			781				
D-ABC	7	2	362	0.019	7	0.0	0.0	10.380	B
C-ABD	38	9	563	0.067	37	0.0	0.1	7.186	A
C-D	11	3			11				
C-A	808	202			808				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	73	18	522	0.139	73	0.1	0.2	8.160	A
B-AD	72	18	275	0.261	71	0.2	0.4	17.944	C
A-BCD	0.90	0.22	548	0.002	0.90	0.0	0.0	7.240	A
A-B	64	16			64				
A-C	933	233			933				
D-ABC	8	2	309	0.026	8	0.0	0.0	12.256	B
C-ABD	45	11	526	0.085	45	0.1	0.1	7.856	A
C-D	13	3			13				
C-A	965	241			965				

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	89	22	401	0.223	89	0.2	0.3	11.753	B
B-AD	88	22	184	0.478	86	0.4	0.9	36.721	E
A-BCD	1	0.28	491	0.002	1	0.0	0.0	8.084	A
A-B	78	20			78				
A-C	1143	286			1143				
D-ABC	10	2	228	0.043	10	0.0	0.0	16.918	C
C-ABD	55	14	475	0.116	55	0.1	0.1	9.001	A
C-D	15	4			15				
C-A	1181	295			1181				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	89	22	396	0.226	89	0.3	0.3	11.960	B
B-AD	88	22	184	0.478	88	0.9	0.9	38.154	E
A-BCD	1	0.28	491	0.002	1	0.0	0.0	8.085	A
A-B	78	20			78				
A-C	1143	286			1143				
D-ABC	10	2	228	0.043	10	0.0	0.0	16.940	C
C-ABD	55	14	475	0.116	55	0.1	0.1	9.006	A
C-D	15	4			15				
C-A	1181	295			1181				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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B-CD	73	18	520	0.140	73	0.3	0.2	8.231	A
B-AD	72	18	275	0.262	74	0.9	0.4	18.428	C
A-BCD	0.90	0.22	548	0.002	0.90	0.0	0.0	7.242	A
A-B	64	16			64				
A-C	933	233			933				
D-ABC	8	2	309	0.026	8	0.0	0.0	12.270	B
C-ABD	45	11	526	0.085	45	0.1	0.1	7.863	A
C-D	13	3			13				
C-A	965	241			965				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	61	15	580	0.105	61	0.2	0.1	7.070	A
B-AD	60	15	341	0.177	61	0.4	0.2	13.144	B
A-BCD	0.75	0.19	589	0.001	0.75	0.0	0.0	6.733	A
A-B	53	13			53				
A-C	781	195			781				
D-ABC	7	2	362	0.019	7	0.0	0.0	10.391	B
C-ABD	38	9	563	0.067	38	0.1	0.1	7.194	A
C-D	11	3			11				
C-A	808	202			808				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.22	0.00	0.00	0.22	0.22			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

#### 17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
B-AD	0.35	0.00	0.00	0.35	0.35			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.03	0.03	0.26	0.46	0.49			N/A	N/A
C-ABD	0.10	0.03	0.26	0.47	0.50			N/A	N/A

#### 17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.29	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.87	0.03	0.28	0.87	2.56			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.05	0.03	0.26	0.47	0.49			N/A	N/A
C-ABD	0.14	0.03	0.27	0.49	0.52			N/A	N/A

#### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.29	0.03	0.31	0.99	1.28			N/A	N/A
B-AD	0.90	0.03	0.33	1.98	4.39			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.05	0.00	0.00	0.05	0.05			N/A	N/A
C-ABD	0.14	0.03	0.26	0.47	0.50			N/A	N/A

#### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
B-AD	0.37	0.03	0.33	1.07	1.30			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

#### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.22	0.03	0.28	0.50	0.94			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

## 2037+dependent, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.35	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	39	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037+dependent	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	750	100.000
B		ONE HOUR	✓	141	100.000
C		ONE HOUR	✓	796	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	47	702	1
	B	40	0	98	3
	C	698	87	0	11
	D	2	2	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	0
	B	10	0	10	0
	C	10	10	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.18	7.95	0.2	1.0	A	91	137
B-AD	0.15	14.97	0.2	0.5	B	38	57
A-BCD	0.00	6.24	0.0	0.5	A	0.92	1
A-B						43	65
A-C						644	966
D-ABC	0.04	13.16	0.0	0.5	B	9	14
C-ABD	0.17	8.43	0.2	0.6	A	80	120
C-D						10	15
C-A						640	961



## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	688	0.109	74	0.0	0.1	6.443	A
B-AD	31	8	415	0.075	31	0.0	0.1	10.272	B
A-BCD	0.75	0.19	648	0.001	0.75	0.0	0.0	5.558	A
A-B	35	9			35				
A-C	529	132			529				
D-ABC	8	2	376	0.020	7	0.0	0.0	9.770	A
C-ABD	65	16	625	0.105	65	0.0	0.1	7.064	A
C-D	8	2			8				
C-A	525	131			525				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	655	0.137	89	0.1	0.2	6.990	A
B-AD	37	9	371	0.100	37	0.1	0.1	11.826	B
A-BCD	0.90	0.22	619	0.001	0.90	0.0	0.0	5.827	A
A-B	42	11			42				
A-C	631	158			631				
D-ABC	9	2	338	0.027	9	0.0	0.0	10.945	B
C-ABD	78	20	600	0.130	78	0.1	0.2	7.584	A
C-D	10	2			10				
C-A	627	157			627				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	607	0.181	110	0.2	0.2	7.942	A
B-AD	45	11	309	0.147	45	0.1	0.2	14.934	B
A-BCD	1	0.28	578	0.002	1	0.0	0.0	6.242	A
A-B	52	13			52				
A-C	773	193			773				
D-ABC	11	3	285	0.039	11	0.0	0.0	13.155	B
C-ABD	96	24	565	0.169	96	0.2	0.2	8.424	A
C-D	12	3			12				
C-A	769	192			769				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	607	0.181	110	0.2	0.2	7.954	A
B-AD	45	11	309	0.147	45	0.2	0.2	14.967	B
A-BCD	1	0.28	578	0.002	1	0.0	0.0	6.243	A
A-B	52	13			52				
A-C	773	193			773				
D-ABC	11	3	285	0.039	11	0.0	0.0	13.161	B
C-ABD	96	24	565	0.169	96	0.2	0.2	8.432	A
C-D	12	3			12				
C-A	769	192			769				

13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	654	0.137	90	0.2	0.2	7.004	A
B-AD	37	9	370	0.100	37	0.2	0.1	11.862	B
A-BCD	0.90	0.22	618	0.001	0.90	0.0	0.0	5.830	A
A-B	42	11			42				
A-C	631	158			631				
D-ABC	9	2	338	0.027	9	0.0	0.0	10.956	B
C-ABD	78	20	600	0.130	78	0.2	0.2	7.594	A
C-D	10	2			10				
C-A	627	157			627				

14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	687	0.109	75	0.2	0.1	6.463	A
B-AD	31	8	415	0.075	31	0.1	0.1	10.304	B
A-BCD	0.75	0.19	648	0.001	0.75	0.0	0.0	5.562	A
A-B	35	9			35				
A-C	529	132			529				
D-ABC	8	2	376	0.020	8	0.0	0.0	9.784	A
C-ABD	65	16	625	0.105	66	0.2	0.1	7.079	A
C-D	8	2			8				
C-A	525	131			525				

Queue Variation Results for each time segment

12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.19	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.25	0.45	0.48			N/A	N/A

C-ABD	0.22	0.03	0.28	0.51	0.54			N/A	N/A
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### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.03	0.30	0.54	0.95			N/A	N/A
B-AD	0.19	0.03	0.28	0.50	0.53			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.22	0.03	0.29	0.52	0.60			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

## 2037+dependent, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.52	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details



## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	798	0.005	4	0.0	0.0	4.533	A
B-AD	5	1	662	0.007	4	0.0	0.0	5.476	A
A-BCD	0	0	1594	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	51	13			51				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	742	0.005	4	0.0	0.0	4.878	A
C-D	0	0			0				
C-A	50	13			50				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	795	0.006	4	0.0	0.0	4.554	A
B-AD	5	1	657	0.008	5	0.0	0.0	5.520	A
A-BCD	0	0	1588	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	61	15			61				
D-ABC	0	0	549	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	739	0.006	4	0.0	0.0	4.900	A
C-D	0	0			0				
C-A	60	15			60				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	791	0.007	5	0.0	0.0	4.582	A
B-AD	7	2	652	0.010	7	0.0	0.0	5.581	A
A-BCD	0	0	1581	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	75	19			75				
D-ABC	0	0	545	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	736	0.007	5	0.0	0.0	4.929	A
C-D	0	0			0				
C-A	74	18			74				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	791	0.007	6	0.0	0.0	4.583	A
B-AD	7	2	652	0.010	7	0.0	0.0	5.581	A
A-BCD	0	0	1581	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	75	19			75				

D-ABC	0	0	545	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	736	0.007	6	0.0	0.0	4.929	A
C-D	0	0			0				
C-A	74	18			74				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	795	0.006	5	0.0	0.0	4.556	A
B-AD	5	1	658	0.008	5	0.0	0.0	5.520	A
A-BCD	0	0	1588	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	61	15			61				
D-ABC	0	0	549	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	739	0.006	5	0.0	0.0	4.900	A
C-D	0	0			0				
C-A	60	15			60				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	798	0.005	4	0.0	0.0	4.534	A
B-AD	5	1	662	0.007	5	0.0	0.0	5.476	A
A-BCD	0	0	1594	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	51	13			51				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	742	0.005	4	0.0	0.0	4.880	A
C-D	0	0			0				
C-A	50	13			50				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.12	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	17	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1021	100.000
B		ONE HOUR	✓	121	100.000
C		ONE HOUR	✓	895	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	86	930	5
	B	54	0	67	0
	C	822	67	0	6
	D	4	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.14	8.01	0.2	0.5	A	61	92
B-AD	0.24	19.37	0.3	1.4	C	50	74



A-BCD	0.01	6.57	0.0	0.5	A	5	7
A-B						79	118
A-C						853	1280
D-ABC	0.03	13.03	0.0	0.5	B	7	11
C-ABD	0.15	8.51	0.2	0.5	A	61	92
C-D						6	8
C-A						754	1131

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	13	633	0.080	50	0.0	0.1	6.177	A
B-AD	41	10	379	0.107	40	0.0	0.1	10.620	B
A-BCD	4	0.94	632	0.006	4	0.0	0.0	5.731	A
A-B	65	16			65				
A-C	700	175			700				
D-ABC	6	2	393	0.015	6	0.0	0.0	9.295	A
C-ABD	50	13	578	0.087	50	0.0	0.1	6.812	A
C-D	5	1			5				
C-A	619	155			619				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	60	15	590	0.102	60	0.1	0.1	6.794	A
B-AD	49	12	323	0.150	48	0.1	0.2	13.107	B
A-BCD	4	1	599	0.008	4	0.0	0.0	6.055	A
A-B	77	19			77				
A-C	836	209			836				
D-ABC	7	2	350	0.021	7	0.0	0.0	10.515	B
C-ABD	60	15	544	0.111	60	0.1	0.1	7.438	A
C-D	5	1			5				
C-A	739	185			739				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	524	0.141	74	0.1	0.2	7.988	A
B-AD	59	15	245	0.242	59	0.2	0.3	19.266	C
A-BCD	6	1	554	0.010	5	0.0	0.0	6.567	A
A-B	95	24			95				
A-C	1024	256			1024				
D-ABC	9	2	285	0.031	9	0.0	0.0	13.023	B
C-ABD	74	18	497	0.149	74	0.1	0.2	8.505	A
C-D	7	2			7				
C-A	905	226			905				

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	523	0.141	74	0.2	0.2	8.007	A
B-AD	59	15	245	0.242	59	0.3	0.3	19.372	C
A-BCD	6	1	554	0.010	6	0.0	0.0	6.568	A
A-B	95	24			95				
A-C	1024	256			1024				
D-ABC	9	2	285	0.031	9	0.0	0.0	13.032	B
C-ABD	74	18	497	0.149	74	0.2	0.2	8.511	A
C-D	7	2			7				
C-A	905	226			905				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	60	15	589	0.102	60	0.2	0.1	6.816	A
B-AD	49	12	323	0.150	49	0.3	0.2	13.176	B
A-BCD	4	1	599	0.008	5	0.0	0.0	6.056	A
A-B	77	19			77				
A-C	836	209			836				
D-ABC	7	2	349	0.021	7	0.0	0.0	10.525	B
C-ABD	60	15	544	0.111	60	0.2	0.1	7.449	A
C-D	5	1			5				
C-A	739	185			739				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	13	632	0.080	51	0.1	0.1	6.194	A
B-AD	41	10	379	0.107	41	0.2	0.1	10.663	B
A-BCD	4	0.94	632	0.006	4	0.0	0.0	5.733	A
A-B	65	16			65				
A-C	700	175			700				
D-ABC	6	2	393	0.015	6	0.0	0.0	9.305	A
C-ABD	50	13	578	0.087	51	0.1	0.1	6.824	A
C-D	5	1			5				
C-A	619	155			619				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

B-AD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.31	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.03	0.26	0.46	0.49			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.32	0.03	0.31	1.10	1.38			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.03	0.25	0.45	0.48			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

## 2023LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.13	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	22	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	902	100.000
B		ONE HOUR	✓	140	100.000
C		ONE HOUR	✓	908	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	60	841	1
	B	66	0	71	3
	C	851	45	0	12
	D	4	3	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.15	8.15	0.2	0.5	A	67	100
B-AD	0.27	17.57	0.4	1.0	C	62	93
A-BCD	0.00	6.53	0.0	0.5	A	0.92	1
A-B						55	83
A-C						772	1158
D-ABC	0.03	12.26	0.0	0.5	B	7	11
C-ABD	0.09	7.54	0.1	0.5	A	41	62
C-D						11	17
C-A						781	1171

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	55	14	630	0.087	54	0.0	0.1	6.246	A
B-AD	51	13	405	0.125	50	0.0	0.1	10.141	B
A-BCD	0.75	0.19	631	0.001	0.75	0.0	0.0	5.710	A
A-B	45	11			45				
A-C	633	158			633				
D-ABC	6	2	402	0.015	6	0.0	0.0	9.081	A
C-ABD	34	8	599	0.057	34	0.0	0.1	6.365	A
C-D	9	2			9				
C-A	641	160			641				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	65	16	588	0.111	65	0.1	0.1	6.880	A
B-AD	60	15	352	0.172	60	0.1	0.2	12.332	B
A-BCD	0.90	0.22	598	0.002	0.90	0.0	0.0	6.026	A
A-B	54	13			54				
A-C	756	189			756				
D-ABC	7	2	362	0.020	7	0.0	0.0	10.155	B
C-ABD	40	10	569	0.071	40	0.1	0.1	6.812	A
C-D	11	3			11				
C-A	765	191			765				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	80	20	523	0.154	80	0.1	0.2	8.129	A
B-AD	74	18	279	0.265	73	0.2	0.4	17.474	C
A-BCD	1	0.28	553	0.002	1	0.0	0.0	6.525	A
A-B	66	17			66				
A-C	926	231			926				
D-ABC	9	2	302	0.029	9	0.0	0.0	12.255	B

C-ABD	50	12	527	0.094	49	0.1	0.1	7.534	A
C-D	13	3			13				
C-A	937	234			937				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	80	20	522	0.154	80	0.2	0.2	8.150	A
B-AD	74	18	279	0.265	74	0.4	0.4	17.567	C
A-BCD	1	0.28	553	0.002	1	0.0	0.0	6.526	A
A-B	66	17			66				
A-C	926	231			926				
D-ABC	9	2	302	0.029	9	0.0	0.0	12.259	B
C-ABD	50	12	527	0.094	50	0.1	0.1	7.537	A
C-D	13	3			13				
C-A	937	234			937				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	65	16	588	0.111	66	0.2	0.1	6.900	A
B-AD	60	15	352	0.172	61	0.4	0.2	12.398	B
A-BCD	0.90	0.22	598	0.002	0.90	0.0	0.0	6.029	A
A-B	54	13			54				
A-C	756	189			756				
D-ABC	7	2	362	0.020	7	0.0	0.0	10.161	B
C-ABD	40	10	569	0.071	41	0.1	0.1	6.818	A
C-D	11	3			11				
C-A	765	191			765				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	55	14	630	0.087	55	0.1	0.1	6.264	A
B-AD	51	13	405	0.125	51	0.2	0.1	10.187	B
A-BCD	0.75	0.19	631	0.001	0.75	0.0	0.0	5.713	A
A-B	45	11			45				
A-C	633	158			633				
D-ABC	6	2	402	0.015	6	0.0	0.0	9.085	A
C-ABD	34	8	599	0.057	34	0.1	0.1	6.374	A
C-D	9	2			9				
C-A	641	160			641				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.08	0.03	0.25	0.46	0.48			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.35	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.03	0.26	0.47	0.49			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.36	0.03	0.32	1.02	1.02			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.03	0.25	0.45	0.48			N/A	N/A

17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

# 2023LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.

Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.99	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	73	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	615	100.000
B		ONE HOUR	✓	107	100.000
C		ONE HOUR	✓	606	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	54	559	2
	B	54	0	51	2
	C	555	48	0	3
	D	3	2	4	0

## Vehicle Mix



## Heavy Vehicle Percentages

	To			
	A	B	C	D
From A	0	0	0	0
From B	0	0	0	0
From C	0	0	0	0
From D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.09	6.33	0.1	0.5	A	48	72
B-AD	0.15	10.42	0.2	0.5	B	50	76
A-BCD	0.00	5.71	0.0	0.5	A	2	3
A-B						50	74
A-C						513	769
D-ABC	0.03	9.93	0.0	0.5	A	8	12
C-ABD	0.09	6.59	0.1	0.5	A	44	66
C-D						3	4
C-A						509	764

### Main Results for each time segment

#### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	39	10	691	0.057	39	0.0	0.1	5.523	A
B-AD	41	10	492	0.084	41	0.0	0.1	7.983	A
A-BCD	2	0.38	686	0.002	1	0.0	0.0	5.258	A
A-B	41	10			41				
A-C	421	105			421				
D-ABC	7	2	439	0.015	7	0.0	0.0	8.319	A
C-ABD	36	9	648	0.056	36	0.0	0.1	5.877	A
C-D	2	0.56			2				
C-A	418	104			418				

#### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	47	12	664	0.071	47	0.1	0.1	5.829	A
B-AD	49	12	456	0.108	49	0.1	0.1	8.857	A
A-BCD	2	0.45	664	0.003	2	0.0	0.0	5.437	A
A-B	49	12			49				
A-C	503	126			503				
D-ABC	8	2	412	0.020	8	0.0	0.0	8.922	A

C-ABD	43	11	628	0.069	43	0.1	0.1	6.157	A
C-D	3	0.67			3				
C-A	499	125			499				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	57	14	627	0.092	57	0.1	0.1	6.324	A
B-AD	60	15	406	0.149	60	0.1	0.2	10.412	B
A-BCD	2	0.55	633	0.003	2	0.0	0.0	5.705	A
A-B	59	15			59				
A-C	615	154			615				
D-ABC	10	2	372	0.027	10	0.0	0.0	9.929	A
C-ABD	53	13	599	0.088	53	0.1	0.1	6.587	A
C-D	3	0.83			3				
C-A	611	153			611				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	57	14	626	0.092	57	0.1	0.1	6.326	A
B-AD	60	15	406	0.149	60	0.2	0.2	10.424	B
A-BCD	2	0.55	633	0.003	2	0.0	0.0	5.706	A
A-B	59	15			59				
A-C	615	154			615				
D-ABC	10	2	372	0.027	10	0.0	0.0	9.930	A
C-ABD	53	13	599	0.088	53	0.1	0.1	6.587	A
C-D	3	0.83			3				
C-A	611	153			611				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	47	12	664	0.071	47	0.1	0.1	5.836	A
B-AD	49	12	456	0.108	50	0.2	0.1	8.872	A
A-BCD	2	0.45	664	0.003	2	0.0	0.0	5.437	A
A-B	49	12			49				
A-C	503	126			503				
D-ABC	8	2	411	0.020	8	0.0	0.0	8.926	A
C-ABD	43	11	628	0.069	43	0.1	0.1	6.159	A
C-D	3	0.67			3				
C-A	499	125			499				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	39	10	690	0.057	39	0.1	0.1	5.529	A
B-AD	41	10	492	0.084	41	0.1	0.1	8.000	A
A-BCD	2	0.38	686	0.002	2	0.0	0.0	5.260	A
A-B	41	10			41				
A-C	421	105			421				
D-ABC	7	2	439	0.015	7	0.0	0.0	8.323	A
C-ABD	36	9	648	0.056	36	0.1	0.1	5.883	A
C-D	2	0.56			2				

C-A	418	104			418				
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### Queue Variation Results for each time segment

#### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.06	0.00	0.00	0.06	0.06			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

#### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.07	0.03	0.25	0.45	0.48			N/A	N/A

#### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.17	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.03	0.26	0.47	0.49			N/A	N/A

#### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.17	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

#### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

#### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

B-CD	0.06	0.00	0.00	0.06	0.06			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

## 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.58	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	60	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	59	100.000
D		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	A	B	C	D
A	0	5	55	0
B	5	0	5	0
C	54	5	0	0
D	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	D
A	0	0	0	0
B	0	0	0	0
C	0	0	0	0
D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.50	0.0	0.5	A	5	7
B-AD	0.01	5.59	0.0	0.5	A	5	7
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						5	7
A-C						50	76
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	4.91	0.0	0.5	A	5	7
C-D						0	0
C-A						50	74

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	811	0.005	4	0.0	0.0	4.461	A
B-AD	4	0.94	658	0.006	4	0.0	0.0	5.505	A
A-BCD	0	0	1579	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	41	10			41				
D-ABC	0	0	556	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	744	0.005	4	0.0	0.0	4.862	A
C-D	0	0			0				

C-A	41	10			41				
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23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	808	0.006	4	0.0	0.0	4.479	A
B-AD	4	1	654	0.007	4	0.0	0.0	5.541	A
A-BCD	0	0	1575	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	49	12			49				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	742	0.006	4	0.0	0.0	4.880	A
C-D	0	0			0				
C-A	49	12			49				

23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	805	0.007	5	0.0	0.0	4.502	A
B-AD	6	1	649	0.008	5	0.0	0.0	5.591	A
A-BCD	0	0	1569	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	61	15			61				
D-ABC	0	0	549	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	739	0.007	5	0.0	0.0	4.906	A
C-D	0	0			0				
C-A	59	15			59				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	805	0.007	6	0.0	0.0	4.502	A
B-AD	6	1	649	0.008	6	0.0	0.0	5.591	A
A-BCD	0	0	1569	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	61	15			61				
D-ABC	0	0	549	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	739	0.007	6	0.0	0.0	4.906	A
C-D	0	0			0				
C-A	59	15			59				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	808	0.006	4	0.0	0.0	4.481	A
B-AD	4	1	654	0.007	5	0.0	0.0	5.543	A
A-BCD	0	0	1574	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	49	12			49				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	742	0.006	5	0.0	0.0	4.881	A
C-D	0	0			0				
C-A	49	12			49				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	810	0.005	4	0.0	0.0	4.462	A
B-AD	4	0.94	658	0.006	4	0.0	0.0	5.507	A
A-BCD	0	0	1579	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	41	10			41				
D-ABC	0	0	556	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	744	0.005	4	0.0	0.0	4.864	A
C-D	0	0			0				
C-A	41	10			41				

Queue Variation Results for each time segment

22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.10	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	19	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1007	100.000



B		ONE HOUR	✓	120	100.000
C		ONE HOUR	✓	883	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	84	918	5
	B	54	0	66	0
	C	811	66	0	6
	D	4	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.14	7.92	0.2	0.5	A	61	91
B-AD	0.24	18.78	0.3	1.4	C	50	74
A-BCD	0.01	6.53	0.0	0.5	A	5	7
A-B						77	116
A-C						842	1264
D-ABC	0.03	12.81	0.0	0.5	B	7	11
C-ABD	0.15	8.42	0.2	0.5	A	61	91
C-D						6	8
C-A						744	1116

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	12	635	0.078	49	0.0	0.1	6.149	A

B-AD	41	10	383	0.106	40	0.0	0.1	10.491	B
A-BCD	4	0.94	634	0.006	4	0.0	0.0	5.710	A
A-B	63	16			63				
A-C	691	173			691				
D-ABC	6	2	396	0.015	6	0.0	0.0	9.227	A
C-ABD	50	12	581	0.086	49	0.0	0.1	6.772	A
C-D	5	1			5				
C-A	611	153			611				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	59	15	592	0.100	59	0.1	0.1	6.749	A
B-AD	49	12	328	0.148	48	0.1	0.2	12.867	B
A-BCD	4	1	602	0.007	4	0.0	0.0	6.028	A
A-B	76	19			76				
A-C	825	206			825				
D-ABC	7	2	353	0.020	7	0.0	0.0	10.406	B
C-ABD	59	15	547	0.109	59	0.1	0.1	7.380	A
C-D	5	1			5				
C-A	729	182			729				

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	73	18	528	0.138	72	0.1	0.2	7.897	A
B-AD	59	15	251	0.237	59	0.2	0.3	18.674	C
A-BCD	6	1	557	0.010	5	0.0	0.0	6.528	A
A-B	92	23			92				
A-C	1011	253			1011				
D-ABC	9	2	290	0.030	9	0.0	0.0	12.802	B
C-ABD	73	18	500	0.145	72	0.1	0.2	8.413	A
C-D	7	2			7				
C-A	893	223			893				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	73	18	527	0.138	73	0.2	0.2	7.915	A
B-AD	59	15	251	0.237	59	0.3	0.3	18.777	C
A-BCD	6	1	557	0.010	6	0.0	0.0	6.528	A
A-B	92	23			92				
A-C	1011	253			1011				
D-ABC	9	2	290	0.030	9	0.0	0.0	12.810	B
C-ABD	73	18	500	0.145	73	0.2	0.2	8.419	A
C-D	7	2			7				
C-A	893	223			893				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	59	15	592	0.100	60	0.2	0.1	6.770	A
B-AD	49	12	328	0.148	49	0.3	0.2	12.939	B
A-BCD	4	1	602	0.007	5	0.0	0.0	6.029	A

A-B	76	19			76				
A-C	825	206			825				
D-ABC	7	2	353	0.020	7	0.0	0.0	10.416	B
C-ABD	59	15	547	0.109	60	0.2	0.1	7.391	A
C-D	5	1			5				
C-A	729	182			729				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	50	12	634	0.078	50	0.1	0.1	6.163	A
B-AD	41	10	383	0.106	41	0.2	0.1	10.533	B
A-BCD	4	0.94	634	0.006	4	0.0	0.0	5.712	A
A-B	63	16			63				
A-C	691	173			691				
D-ABC	6	2	396	0.015	6	0.0	0.0	9.235	A
C-ABD	50	12	581	0.086	50	0.1	0.1	6.785	A
C-D	5	1			5				
C-A	611	153			611				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.30	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.03	0.26	0.46	0.49			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.03	0.25	0.45	0.48			N/A	N/A

B-AD	0.31	0.03	0.31	1.07	1.35			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.03	0.25	0.45	0.48			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

## 2037LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.09	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	25	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	883	100.000
B		ONE HOUR	✓	136	100.000
C		ONE HOUR	✓	886	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	D
From A	0	60	822	1
From B	64	0	69	3
From C	830	44	0	12
From D	4	3	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	D
From A	0	0	0	0
From B	0	0	0	0
From C	0	0	0	0
From D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.15	7.95	0.2	0.5	A	65	97
B-AD	0.25	16.65	0.3	1.4	C	60	90
A-BCD	0.00	6.46	0.0	0.5	A	0.92	1
A-B						55	83
A-C						754	1131
D-ABC	0.03	11.94	0.0	0.5	B	7	11
C-ABD	0.09	7.45	0.1	0.5	A	40	61
C-D						11	17
C-A						762	1142

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	53	13	635	0.084	53	0.0	0.1	6.181	A
B-AD	49	12	411	0.120	49	0.0	0.1	9.930	A
A-BCD	0.75	0.19	635	0.001	0.75	0.0	0.0	5.673	A
A-B	45	11			45				
A-C	619	155			619				
D-ABC	6	2	407	0.015	6	0.0	0.0	8.971	A
C-ABD	33	8	602	0.055	33	0.0	0.1	6.320	A
C-D	9	2			9				
C-A	625	156			625				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	594	0.107	63	0.1	0.1	6.780	A
B-AD	59	15	359	0.163	58	0.1	0.2	11.948	B
A-BCD	0.90	0.22	603	0.001	0.90	0.0	0.0	5.977	A
A-B	54	13			54				
A-C	739	185			739				
D-ABC	7	2	368	0.020	7	0.0	0.0	9.986	A
C-ABD	40	10	573	0.069	39	0.1	0.1	6.751	A
C-D	11	3			11				
C-A	746	187			746				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	78	20	532	0.147	78	0.1	0.2	7.931	A
B-AD	72	18	288	0.249	71	0.2	0.3	16.573	C
A-BCD	1	0.28	559	0.002	1	0.0	0.0	6.455	A
A-B	66	17			66				
A-C	905	226			905				
D-ABC	9	2	310	0.028	9	0.0	0.0	11.937	B
C-ABD	48	12	532	0.091	48	0.1	0.1	7.442	A
C-D	13	3			13				
C-A	914	228			914				

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	78	20	531	0.147	78	0.2	0.2	7.948	A
B-AD	72	18	288	0.249	72	0.3	0.3	16.649	C
A-BCD	1	0.28	559	0.002	1	0.0	0.0	6.456	A
A-B	66	17			66				
A-C	905	226			905				
D-ABC	9	2	310	0.028	9	0.0	0.0	11.941	B
C-ABD	48	12	532	0.091	48	0.1	0.1	7.445	A
C-D	13	3			13				
C-A	914	228			914				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	593	0.107	64	0.2	0.1	6.800	A
B-AD	59	15	359	0.163	59	0.3	0.2	12.011	B
A-BCD	0.90	0.22	603	0.001	0.90	0.0	0.0	5.980	A
A-B	54	13			54				
A-C	739	185			739				
D-ABC	7	2	368	0.020	7	0.0	0.0	9.992	A
C-ABD	40	10	573	0.069	40	0.1	0.1	6.756	A
C-D	11	3			11				
C-A	746	187			746				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	53	13	634	0.084	53	0.1	0.1	6.201	A
B-AD	49	12	411	0.120	49	0.2	0.1	9.969	A
A-BCD	0.75	0.19	635	0.001	0.75	0.0	0.0	5.674	A
A-B	45	11			45				
A-C	619	155			619				
D-ABC	6	2	407	0.015	6	0.0	0.0	8.976	A
C-ABD	33	8	602	0.055	33	0.1	0.1	6.326	A
C-D	9	2			9				
C-A	625	156			625				

**Queue Variation Results for each time segment**

**16:45 - 17:00**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

**17:00 - 17:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.07	0.03	0.25	0.45	0.48			N/A	N/A

**17:15 - 17:30**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.32	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A

C-ABD	0.10	0.03	0.26	0.47	0.49			N/A	N/A
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#### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.33	0.03	0.32	1.13	1.42			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.03	0.25	0.45	0.48			N/A	N/A

#### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

#### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

## 2037LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.97	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	76	Stream B-AD

## Traffic Demand



## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	604	100.000
B		ONE HOUR	✓	105	100.000
C		ONE HOUR	✓	594	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	53	550	1
	B	53	0	50	2
	C	544	47	0	3
	D	3	2	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.09	6.28	0.1	0.5	A	47	70
B-AD	0.14	10.24	0.2	0.5	B	49	74
A-BCD	0.00	5.67	0.0	0.5	A	0.92	1
A-B						49	73
A-C						505	757
D-ABC	0.03	9.81	0.0	0.5	A	8	12
C-ABD	0.09	6.54	0.1	0.5	A	43	65
C-D						3	4
C-A						499	749

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	38	10	693	0.056	38	0.0	0.1	5.499	A
B-AD	41	10	495	0.082	40	0.0	0.1	7.911	A
A-BCD	0.75	0.19	688	0.001	0.75	0.0	0.0	5.234	A
A-B	40	10			40				
A-C	414	104			414				
D-ABC	7	2	442	0.015	7	0.0	0.0	8.265	A
C-ABD	35	9	650	0.054	35	0.0	0.1	5.851	A
C-D	2	0.56			2				
C-A	410	102			410				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	46	11	667	0.069	46	0.1	0.1	5.796	A
B-AD	48	12	460	0.105	48	0.1	0.1	8.750	A
A-BCD	0.90	0.22	667	0.001	0.90	0.0	0.0	5.407	A
A-B	48	12			48				
A-C	494	124			494				
D-ABC	8	2	415	0.020	8	0.0	0.0	8.847	A
C-ABD	42	11	630	0.067	42	0.1	0.1	6.123	A
C-D	3	0.67			3				
C-A	489	122			489				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	630	0.089	56	0.1	0.1	6.274	A
B-AD	59	15	411	0.144	59	0.1	0.2	10.232	B
A-BCD	1	0.28	636	0.002	1	0.0	0.0	5.666	A
A-B	58	15			58				
A-C	606	151			606				
D-ABC	10	2	377	0.026	10	0.0	0.0	9.813	A
C-ABD	52	13	602	0.086	52	0.1	0.1	6.540	A
C-D	3	0.83			3				
C-A	599	150			599				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	630	0.089	56	0.1	0.1	6.276	A

B-AD	59	15	411	0.144	59	0.2	0.2	10.241	B
A-BCD	1	0.28	636	0.002	1	0.0	0.0	5.666	A
A-B	58	15			58				
A-C	606	151			606				
D-ABC	10	2	377	0.026	10	0.0	0.0	9.814	A
C-ABD	52	13	602	0.086	52	0.1	0.1	6.540	A
C-D	3	0.83			3				
C-A	599	150			599				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	46	11	667	0.069	46	0.1	0.1	5.803	A
B-AD	48	12	460	0.105	49	0.2	0.1	8.763	A
A-BCD	0.90	0.22	666	0.001	0.90	0.0	0.0	5.410	A
A-B	48	12			48				
A-C	494	124			494				
D-ABC	8	2	415	0.020	8	0.0	0.0	8.850	A
C-ABD	42	11	630	0.067	42	0.1	0.1	6.125	A
C-D	3	0.67			3				
C-A	489	122			489				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	38	10	692	0.056	39	0.1	0.1	5.507	A
B-AD	41	10	495	0.082	41	0.1	0.1	7.927	A
A-BCD	0.75	0.19	688	0.001	0.75	0.0	0.0	5.235	A
A-B	40	10			40				
A-C	414	104			414				
D-ABC	7	2	442	0.015	7	0.0	0.0	8.270	A
C-ABD	35	9	650	0.054	35	0.1	0.1	5.857	A
C-D	2	0.56			2				
C-A	410	102			410				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.06	0.00	0.00	0.06	0.06			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.07	0.03	0.25	0.45	0.48			N/A	N/A

### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.17	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.09	0.03	0.26	0.47	0.49			N/A	N/A

### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.17	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.06	0.00	0.00	0.06	0.06			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.06	0.00	0.00	0.06	0.06			N/A	N/A

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	59	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	58	100.000
D		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	5	54	0
	B	5	0	5	0
	C	53	5	0	0
	D	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.50	0.0	0.5	A	5	7
B-AD	0.01	5.59	0.0	0.5	A	5	7
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						5	7
A-C						50	74
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	4.90	0.0	0.5	A	5	7
C-D						0	0
C-A						49	73

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	811	0.005	4	0.0	0.0	4.460	A
B-AD	4	0.94	658	0.006	4	0.0	0.0	5.503	A
A-BCD	0	0	1579	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	41	10			41				
D-ABC	0	0	556	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	744	0.005	4	0.0	0.0	4.861	A
C-D	0	0			0				
C-A	40	10			40				

#### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	808	0.006	4	0.0	0.0	4.477	A
B-AD	4	1	654	0.007	4	0.0	0.0	5.538	A

A-BCD	0	0	1575	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	49	12			49				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	742	0.006	4	0.0	0.0	4.879	A
C-D	0	0			0				
C-A	48	12			48				

23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	805	0.007	5	0.0	0.0	4.501	A
B-AD	6	1	650	0.008	5	0.0	0.0	5.587	A
A-BCD	0	0	1569	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	59	15			59				
D-ABC	0	0	550	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	739	0.007	5	0.0	0.0	4.904	A
C-D	0	0			0				
C-A	58	15			58				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	6	1	805	0.007	6	0.0	0.0	4.501	A
B-AD	6	1	650	0.008	6	0.0	0.0	5.587	A
A-BCD	0	0	1569	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	59	15			59				
D-ABC	0	0	550	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	739	0.007	6	0.0	0.0	4.904	A
C-D	0	0			0				
C-A	58	15			58				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	1	808	0.006	4	0.0	0.0	4.478	A
B-AD	4	1	654	0.007	5	0.0	0.0	5.538	A
A-BCD	0	0	1575	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	49	12			49				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	742	0.006	5	0.0	0.0	4.881	A
C-D	0	0			0				
C-A	48	12			48				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	4	0.94	811	0.005	4	0.0	0.0	4.461	A
B-AD	4	0.94	658	0.006	4	0.0	0.0	5.502	A
A-BCD	0	0	1579	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	41	10			41				
D-ABC	0	0	556	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	744	0.005	4	0.0	0.0	4.863	A
C-D	0	0			0				
C-A	40	10			40				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

### 23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A



D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2023HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.38	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	6	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
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D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓
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Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1131	100.000
B		ONE HOUR	✓	134	100.000
C		ONE HOUR	✓	992	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	95	1030	6
	B	59	0	75	0
	C	912	74	0	6
	D	5	0	4	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.17	9.15	0.2	0.5	A	69	103
B-AD	0.33	26.87	0.5	1.8	D	54	81
A-BCD	0.01	6.92	0.0	0.5	A	6	8
A-B						87	131
A-C						945	1418
D-ABC	0.04	14.57	0.0	0.5	B	8	12
C-ABD	0.17	9.29	0.2	0.7	A	68	102
C-D						6	8
C-A						837	1255

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	611	0.092	56	0.0	0.1	6.486	A
B-AD	44	11	347	0.128	44	0.0	0.1	11.856	B
A-BCD	5	1	614	0.007	4	0.0	0.0	5.910	A
A-B	72	18			72				
A-C	775	194			775				
D-ABC	7	2	381	0.018	7	0.0	0.0	9.612	A
C-ABD	56	14	559	0.100	55	0.0	0.1	7.138	A
C-D	5	1			5				
C-A	687	172			687				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	561	0.120	67	0.1	0.1	7.288	A
B-AD	53	13	285	0.186	53	0.1	0.2	15.482	C
A-BCD	5	1	577	0.009	5	0.0	0.0	6.296	A
A-B	85	21			85				
A-C	926	231			926				
D-ABC	8	2	332	0.024	8	0.0	0.0	11.114	B
C-ABD	67	17	521	0.128	66	0.1	0.1	7.911	A
C-D	5	1			5				
C-A	820	205			820				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	83	21	478	0.173	82	0.1	0.2	9.099	A
B-AD	65	16	199	0.327	64	0.2	0.5	26.521	D
A-BCD	7	2	527	0.013	7	0.0	0.0	6.919	A
A-B	105	26			105				
A-C	1134	284			1134				
D-ABC	10	2	257	0.039	10	0.0	0.0	14.554	B
C-ABD	81	20	469	0.174	81	0.1	0.2	9.281	A
C-D	7	2			7				
C-A	1004	251			1004				

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	83	21	476	0.173	83	0.2	0.2	9.149	A
B-AD	65	16	199	0.327	65	0.5	0.5	26.868	D
A-BCD	7	2	527	0.013	7	0.0	0.0	6.920	A
A-B	105	26			105				
A-C	1134	284			1134				
D-ABC	10	2	257	0.039	10	0.0	0.0	14.573	B
C-ABD	81	20	469	0.174	81	0.2	0.2	9.292	A
C-D	7	2			7				
C-A	1004	251			1004				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	560	0.121	68	0.2	0.1	7.322	A
B-AD	53	13	285	0.186	54	0.5	0.2	15.641	C
A-BCD	5	1	577	0.009	5	0.0	0.0	6.298	A
A-B	85	21			85				
A-C	926	231			926				
D-ABC	8	2	332	0.024	8	0.0	0.0	11.129	B
C-ABD	67	17	521	0.128	67	0.2	0.1	7.924	A
C-D	5	1			5				
C-A	820	205			820				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	56	14	610	0.093	57	0.1	0.1	6.511	A
B-AD	44	11	347	0.128	45	0.2	0.1	11.928	B
A-BCD	5	1	613	0.007	5	0.0	0.0	5.914	A
A-B	72	18			72				
A-C	775	194			775				
D-ABC	7	2	381	0.018	7	0.0	0.0	9.622	A
C-ABD	56	14	559	0.100	56	0.1	0.1	7.156	A
C-D	5	1			5				
C-A	687	172			687				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A

C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
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**08:00 - 08:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.22	0.00	0.00	0.22	0.22			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

**08:15 - 08:30**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.47	0.03	0.26	0.48	0.77			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.04	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.21	0.03	0.26	0.46	0.49			N/A	N/A

**08:30 - 08:45**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.48	0.03	0.33	1.44	1.81			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.21	0.03	0.27	0.48	0.68			N/A	N/A

**08:45 - 09:00**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.23	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

**09:00 - 09:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.15	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

# 2023HG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.41	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	9	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1009	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	1017	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	66	942	1
	B	73	0	80	3
	C	953	50	0	14
	D	4	3	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.19	9.46	0.2	1.0	A	75	113
B-AD	0.35	24.10	0.5	2.3	C	68	102
A-BCD	0.00	6.90	0.0	0.5	A	0.92	1
A-B						61	91
A-C						864	1297
D-ABC	0.03	14.25	0.0	0.5	B	7	11
C-ABD	0.11	8.09	0.1	0.5	A	46	69
C-D						13	19
C-A						874	1312

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	608	0.101	61	0.0	0.1	6.581	A
B-AD	56	14	372	0.150	55	0.0	0.2	11.346	B
A-BCD	0.75	0.19	611	0.001	0.75	0.0	0.0	5.900	A
A-B	50	12			50				
A-C	709	177			709				
D-ABC	6	2	378	0.016	6	0.0	0.0	9.687	A
C-ABD	38	9	581	0.065	37	0.0	0.1	6.625	A
C-D	11	3			11				
C-A	717	179			717				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	558	0.132	73	0.1	0.2	7.427	A

B-AD	67	17	313	0.213	66	0.2	0.3	14.579	B
A-BCD	0.90	0.22	574	0.002	0.90	0.0	0.0	6.281	A
A-B	59	15			59				
A-C	847	212			847				
D-ABC	7	2	331	0.022	7	0.0	0.0	11.126	B
C-ABD	45	11	547	0.082	45	0.1	0.1	7.172	A
C-D	13	3			13				
C-A	857	214			857				

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	23	472	0.191	90	0.2	0.2	9.409	A
B-AD	81	20	231	0.353	80	0.3	0.5	23.798	C
A-BCD	1	0.28	523	0.002	1	0.0	0.0	6.897	A
A-B	73	18			73				
A-C	1037	259			1037				
D-ABC	9	2	261	0.034	9	0.0	0.0	14.242	B
C-ABD	55	14	500	0.110	55	0.1	0.1	8.082	A
C-D	15	4			15				
C-A	1049	262			1049				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	23	471	0.192	90	0.2	0.2	9.464	A
B-AD	81	20	231	0.353	81	0.5	0.5	24.100	C
A-BCD	1	0.28	523	0.002	1	0.0	0.0	6.898	A
A-B	73	18			73				
A-C	1037	259			1037				
D-ABC	9	2	261	0.034	9	0.0	0.0	14.254	B
C-ABD	55	14	500	0.110	55	0.1	0.1	8.087	A
C-D	15	4			15				
C-A	1049	262			1049				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	556	0.132	74	0.2	0.2	7.468	A
B-AD	67	17	313	0.213	68	0.5	0.3	14.736	B
A-BCD	0.90	0.22	574	0.002	0.90	0.0	0.0	6.282	A
A-B	59	15			59				
A-C	847	212			847				
D-ABC	7	2	331	0.022	7	0.0	0.0	11.135	B
C-ABD	45	11	547	0.082	45	0.1	0.1	7.176	A
C-D	13	3			13				
C-A	857	214			857				



18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	607	0.101	62	0.2	0.1	6.610	A
B-AD	56	14	372	0.150	56	0.3	0.2	11.423	B
A-BCD	0.75	0.19	611	0.001	0.75	0.0	0.0	5.901	A
A-B	50	12			50				
A-C	709	177			709				
D-ABC	6	2	377	0.016	6	0.0	0.0	9.695	A
C-ABD	38	9	581	0.065	38	0.1	0.1	6.635	A
C-D	11	3			11				
C-A	717	179			717				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.27	0.00	0.00	0.27	0.27			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.09	0.03	0.25	0.45	0.48			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.23	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.53	0.03	0.26	0.53	0.58			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.12	0.03	0.26	0.47	0.49			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.03	0.28	0.51	1.01			N/A	N/A
B-AD	0.53	0.03	0.32	1.07	2.28			N/A	N/A

A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.12	0.03	0.25	0.45	0.48			N/A	N/A

#### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.28	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

#### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.18	0.03	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

## 2023HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.06	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	56	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	680	100.000
B		ONE HOUR	✓	118	100.000
C		ONE HOUR	✓	672	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	59	619	2
	B	59	0	57	2
	C	615	53	0	4
	D	3	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.11	6.65	0.1	0.5	A	53	80
B-AD	0.18	11.60	0.2	0.8	B	55	82
A-BCD	0.00	5.88	0.0	0.5	A	2	3
A-B						54	81
A-C						568	852
D-ABC	0.03	10.84	0.0	0.5	B	9	14
C-ABD	0.10	6.86	0.1	0.5	A	49	73

C-D						4	6
C-A						564	847

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	44	11	678	0.064	43	0.0	0.1	5.668	A
B-AD	45	11	471	0.096	45	0.0	0.1	8.434	A
A-BCD	2	0.38	674	0.002	1	0.0	0.0	5.355	A
A-B	44	11			44				
A-C	466	117			466				
D-ABC	8	2	419	0.018	7	0.0	0.0	8.755	A
C-ABD	40	10	637	0.063	40	0.0	0.1	6.022	A
C-D	3	0.75			3				
C-A	463	116			463				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	52	13	649	0.081	52	0.1	0.1	6.035	A
B-AD	54	13	431	0.125	54	0.1	0.1	9.524	A
A-BCD	2	0.45	649	0.003	2	0.0	0.0	5.562	A
A-B	53	13			53				
A-C	556	139			556				
D-ABC	9	2	387	0.023	9	0.0	0.0	9.518	A
C-ABD	48	12	614	0.078	48	0.1	0.1	6.351	A
C-D	4	0.90			4				
C-A	553	138			553				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	606	0.106	64	0.1	0.1	6.643	A
B-AD	66	16	376	0.175	66	0.1	0.2	11.579	B
A-BCD	2	0.55	615	0.004	2	0.0	0.0	5.875	A
A-B	65	16			65				
A-C	682	170			682				
D-ABC	11	3	343	0.032	11	0.0	0.0	10.840	B
C-ABD	58	15	583	0.100	58	0.1	0.1	6.859	A
C-D	4	1			4				
C-A	677	169			677				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	64	16	605	0.106	64	0.1	0.1	6.649	A
B-AD	66	16	376	0.175	66	0.2	0.2	11.599	B
A-BCD	2	0.55	615	0.004	2	0.0	0.0	5.876	A
A-B	65	16			65				
A-C	682	170			682				
D-ABC	11	3	343	0.032	11	0.0	0.0	10.844	B
C-ABD	58	15	583	0.100	58	0.1	0.1	6.862	A
C-D	4	1			4				
C-A	677	169			677				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	52	13	648	0.081	52	0.1	0.1	6.042	A
B-AD	54	13	431	0.125	54	0.2	0.1	9.547	A
A-BCD	2	0.45	649	0.003	2	0.0	0.0	5.565	A
A-B	53	13			53				
A-C	556	139			556				
D-ABC	9	2	387	0.023	9	0.0	0.0	9.522	A
C-ABD	48	12	614	0.078	48	0.1	0.1	6.356	A
C-D	4	0.90			4				
C-A	553	138			553				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	44	11	678	0.065	44	0.1	0.1	5.680	A
B-AD	45	11	471	0.096	45	0.1	0.1	8.454	A
A-BCD	2	0.38	674	0.002	2	0.0	0.0	5.358	A
A-B	44	11			44				
A-C	466	117			466				
D-ABC	8	2	418	0.018	8	0.0	0.0	8.761	A
C-ABD	40	10	637	0.063	40	0.1	0.1	6.031	A
C-D	3	0.75			3				
C-A	463	116			463				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A

C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
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13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.02	0.02	0.25	0.45	0.48			N/A	N/A
C-ABD	0.08	0.03	0.26	0.47	0.50			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.03	0.26	0.47	0.49			N/A	N/A
B-AD	0.21	0.03	0.26	0.46	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.11	0.03	0.26	0.47	0.49			N/A	N/A

13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.21	0.03	0.27	0.49	0.81			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.03	0.25	0.45	0.48			N/A	N/A

13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.07	0.00	0.00	0.07	0.07			N/A	N/A

# 2023HG, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	67	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	65	100.000
D		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	6	61	0
	B	6	0	6	0
	C	60	5	0	0
	D	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.52	0.0	0.5	A	6	8
B-AD	0.01	5.62	0.0	0.5	A	6	8
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						6	8
A-C						56	84
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	4.92	0.0	0.5	A	5	7
C-D						0	0
C-A						55	83

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	809	0.006	4	0.0	0.0	4.474	A
B-AD	5	1	656	0.007	4	0.0	0.0	5.527	A
A-BCD	0	0	1577	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	46	11			46				
D-ABC	0	0	554	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.870	A
C-D	0	0			0				
C-A	45	11			45				

#### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	806	0.007	5	0.0	0.0	4.493	A



B-AD	5	1	652	0.008	5	0.0	0.0	5.568	A
A-BCD	0	0	1572	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	55	14			55				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	4	0.0	0.0	4.890	A
C-D	0	0			0				
C-A	54	13			54				

23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	803	0.008	7	0.0	0.0	4.520	A
B-AD	7	2	647	0.010	7	0.0	0.0	5.624	A
A-BCD	0	0	1565	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	67	17			67				
D-ABC	0	0	547	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	737	0.007	5	0.0	0.0	4.917	A
C-D	0	0			0				
C-A	66	17			66				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	803	0.008	7	0.0	0.0	4.520	A
B-AD	7	2	647	0.010	7	0.0	0.0	5.624	A
A-BCD	0	0	1565	0.000	0	0.0	0.0	0.000	A
A-B	7	2			7				
A-C	67	17			67				
D-ABC	0	0	547	0.000	0	0.0	0.0	0.000	A
C-ABD	6	1	737	0.007	6	0.0	0.0	4.917	A
C-D	0	0			0				
C-A	66	17			66				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	806	0.007	5	0.0	0.0	4.495	A
B-AD	5	1	652	0.008	5	0.0	0.0	5.570	A
A-BCD	0	0	1572	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	55	14			55				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	4	1	741	0.006	5	0.0	0.0	4.890	A
C-D	0	0			0				
C-A	54	13			54				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	809	0.006	5	0.0	0.0	4.474	A
B-AD	5	1	656	0.007	5	0.0	0.0	5.529	A
A-BCD	0	0	1577	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	46	11			46				
D-ABC	0	0	554	0.000	0	0.0	0.0	0.000	A
C-ABD	4	0.94	743	0.005	4	0.0	0.0	4.872	A
C-D	0	0			0				
C-A	45	11			45				

Queue Variation Results for each time segment

22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		4.37	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-12	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1387	100.000
B		ONE HOUR	✓	149	100.000
C		ONE HOUR	✓	1179	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	113	1267	7
	B	67	0	82	0
	C	1090	82	0	7
	D	5	0	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.42	28.81	0.7	2.1	D	75	113
B-AD	0.74	123.64	2.3	10.2	F	61	92
A-BCD	0.02	7.69	0.0	0.5	A	6	10
A-B						104	156
A-C						1163	1744
D-ABC	0.07	26.22	0.1	0.5	D	9	14
C-ABD	0.22	11.46	0.3	1.3	B	75	113

C-D						6	10
C-A						1000	1500

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	555	0.111	61	0.0	0.1	7.283	A
B-AD	50	13	281	0.180	50	0.0	0.2	15.504	C
A-BCD	5	1	579	0.009	5	0.0	0.0	6.276	A
A-B	85	21			85				
A-C	954	238			954				
D-ABC	8	2	318	0.024	7	0.0	0.0	11.585	B
C-ABD	62	15	515	0.120	61	0.0	0.1	7.920	A
C-D	5	1			5				
C-A	821	205			821				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	484	0.152	74	0.1	0.2	8.760	A
B-AD	60	15	206	0.293	59	0.2	0.4	24.529	C
A-BCD	6	2	535	0.012	6	0.0	0.0	6.801	A
A-B	102	25			102				
A-C	1139	285			1139				
D-ABC	9	2	253	0.036	9	0.0	0.0	14.740	B
C-ABD	74	18	469	0.157	74	0.1	0.2	9.108	A
C-D	6	2			6				
C-A	980	245			980				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	23	253	0.357	89	0.2	0.5	21.795	C
B-AD	74	18	100	0.740	67	0.4	2.0	98.490	F
A-BCD	8	2	476	0.016	8	0.0	0.0	7.689	A
A-B	124	31			124				
A-C	1395	349			1395				
D-ABC	11	3	150	0.074	11	0.0	0.1	25.925	D
C-ABD	90	23	404	0.223	90	0.2	0.3	11.436	B
C-D	8	2			8				
C-A	1200	300			1200				

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	23	214	0.422	90	0.5	0.7	28.811	D
B-AD	74	18	99	0.742	72	2.0	2.3	123.644	F
A-BCD	8	2	476	0.016	8	0.0	0.0	7.691	A
A-B	124	31			124				
A-C	1395	349			1395				
D-ABC	11	3	148	0.074	11	0.1	0.1	26.222	D
C-ABD	90	23	404	0.223	90	0.3	0.3	11.463	B
C-D	8	2			8				
C-A	1200	300			1200				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	74	18	471	0.156	76	0.7	0.2	9.150	A
B-AD	60	15	206	0.292	68	2.3	0.4	27.221	D
A-BCD	6	2	535	0.012	6	0.0	0.0	6.807	A
A-B	102	25			102				
A-C	1139	285			1139				
D-ABC	9	2	252	0.036	9	0.1	0.0	14.859	B
C-ABD	74	18	469	0.157	74	0.3	0.2	9.137	A
C-D	6	2			6				
C-A	980	245			980				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	62	15	553	0.112	62	0.2	0.1	7.337	A
B-AD	50	13	281	0.179	51	0.4	0.2	15.722	C
A-BCD	5	1	578	0.009	5	0.0	0.0	6.279	A
A-B	85	21			85				
A-C	954	238			954				
D-ABC	8	2	318	0.024	8	0.0	0.0	11.614	B
C-ABD	62	15	515	0.120	62	0.2	0.1	7.949	A
C-D	5	1			5				
C-A	821	205			821				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
B-AD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A

C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
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**08:00 - 08:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
B-AD	0.40	0.03	0.32	1.06	1.28			N/A	N/A
A-BCD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
D-ABC	0.04	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.18	0.00	0.00	0.18	0.18			N/A	N/A

**08:15 - 08:30**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.54	0.03	0.26	0.54	0.55			N/A	N/A
B-AD	1.97	0.04	0.44	5.35	9.00			N/A	N/A
A-BCD	0.02	0.00	0.00	0.02	0.02			N/A	N/A
D-ABC	0.08	0.03	0.26	0.47	0.50			N/A	N/A
C-ABD	0.28	0.03	0.26	0.46	0.49			N/A	N/A

**08:30 - 08:45**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.70	0.04	0.42	1.46	2.10			N/A	N/A
B-AD	2.29	0.05	0.48	6.27	10.21			N/A	N/A
A-BCD	0.02	0.00	0.00	0.02	0.02			N/A	N/A
D-ABC	0.08	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.29	0.03	0.31	1.00	1.29			N/A	N/A

**08:45 - 09:00**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
B-AD	0.43	0.03	0.32	1.36	1.65			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.19	0.00	0.00	0.19	0.19			N/A	N/A

**09:00 - 09:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.22	0.03	0.28	0.50	1.33			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

# 2037HG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		5.04	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-11	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1233	100.000
B		ONE HOUR	✓	180	100.000
C		ONE HOUR	✓	1262	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	78	1154	1
	B	87	0	89	4
	C	1191	56	0	15
	D	5	3	1	0



## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.50	34.99	0.9	3.6	D	84	127
B-AD	0.77	108.75	2.6	12.3	F	81	121
A-BCD	0.00	7.90	0.0	0.5	A	0.92	1
A-B						72	107
A-C						1059	1588
D-ABC	0.06	22.33	0.1	0.5	C	8	12
C-ABD	0.14	9.42	0.2	0.5	A	51	77
C-D						14	21
C-A						1093	1639

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	69	17	548	0.126	68	0.0	0.1	7.500	A
B-AD	67	17	304	0.219	66	0.0	0.3	15.043	C
A-BCD	0.75	0.19	566	0.001	0.75	0.0	0.0	6.372	A
A-B	59	15			59				
A-C	869	217			869				
D-ABC	7	2	333	0.020	7	0.0	0.0	11.039	B
C-ABD	42	11	542	0.078	42	0.0	0.1	7.193	A
C-D	11	3			11				
C-A	897	224			897				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	82	21	470	0.175	82	0.1	0.2	9.265	A

B-AD	79	20	231	0.344	78	0.3	0.5	23.526	C
A-BCD	0.90	0.22	520	0.002	0.90	0.0	0.0	6.935	A
A-B	70	18			70				
A-C	1037	259			1037				
D-ABC	8	2	271	0.030	8	0.0	0.0	13.698	B
C-ABD	50	13	501	0.101	50	0.1	0.1	7.989	A
C-D	13	3			13				
C-A	1071	268			1071				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	102	25	236	0.431	100	0.2	0.7	25.968	D
B-AD	96	24	126	0.763	89	0.5	2.3	85.682	F
A-BCD	1	0.28	457	0.002	1	0.0	0.0	7.900	A
A-B	86	21			86				
A-C	1271	318			1271				
D-ABC	10	2	172	0.058	10	0.0	0.1	22.231	C
C-ABD	62	15	444	0.139	61	0.1	0.2	9.411	A
C-D	17	4			17				
C-A	1311	328			1311				

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	102	25	203	0.503	101	0.7	0.9	34.992	D
B-AD	96	24	125	0.769	95	2.3	2.6	108.750	F
A-BCD	1	0.28	457	0.002	1	0.0	0.0	7.901	A
A-B	86	21			86				
A-C	1271	318			1271				
D-ABC	10	2	171	0.058	10	0.1	0.1	22.335	C
C-ABD	62	15	444	0.139	62	0.2	0.2	9.421	A
C-D	17	4			17				
C-A	1311	328			1311				

### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	82	21	457	0.180	85	0.9	0.2	9.759	A
B-AD	79	20	230	0.345	88	2.6	0.5	26.603	D
A-BCD	0.90	0.22	520	0.002	0.90	0.0	0.0	6.940	A
A-B	70	18			70				
A-C	1037	259			1037				
D-ABC	8	2	270	0.030	8	0.1	0.0	13.739	B
C-ABD	50	13	501	0.101	51	0.2	0.1	8.000	A
C-D	13	3			13				
C-A	1071	268			1071				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	69	17	546	0.126	69	0.2	0.1	7.558	A
B-AD	67	17	304	0.220	68	0.5	0.3	15.329	C
A-BCD	0.75	0.19	565	0.001	0.75	0.0	0.0	6.374	A
A-B	59	15			59				
A-C	869	217			869				
D-ABC	7	2	333	0.020	7	0.0	0.0	11.053	B
C-ABD	42	11	542	0.078	42	0.1	0.1	7.205	A
C-D	11	3			11				
C-A	897	224			897				

Queue Variation Results for each time segment

16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.28	0.00	0.00	0.28	0.28			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
B-AD	0.51	0.05	0.45	1.28	1.39			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.72	0.03	0.27	0.72	1.27			N/A	N/A
B-AD	2.26	0.05	0.47	6.18	10.22			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.06	0.03	0.26	0.46	0.49			N/A	N/A
C-ABD	0.16	0.03	0.26	0.47	0.49			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.95	0.04	0.42	2.24	3.57			N/A	N/A
B-AD	2.65	0.05	0.47	7.35	12.31			N/A	N/A

A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.06	0.00	0.00	0.06	0.06			N/A	N/A
C-ABD	0.16	0.03	0.25	0.45	0.48			N/A	N/A

#### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.55	0.03	0.34	1.15	2.17			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

#### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.29	0.03	0.28	0.73	1.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.09	0.00	0.00	0.09	0.09			N/A	N/A

## 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.19	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	31	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	822	100.000
B		ONE HOUR	✓	134	100.000
C		ONE HOUR	✓	804	100.000
D		ONE HOUR	✓	11	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	69	751	2
	B	69	0	62	3
	C	742	58	0	4
	D	4	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.13	7.56	0.1	0.5	A	59	88
B-AD	0.24	15.01	0.3	1.4	C	64	97
A-BCD	0.00	6.24	0.0	0.5	A	2	3
A-B						63	95
A-C						689	1034
D-ABC	0.04	12.29	0.0	0.5	B	10	15
C-ABD	0.12	7.45	0.1	0.5	A	53	80

C-D						4	6
C-A						681	1021

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	48	12	642	0.075	48	0.0	0.1	6.053	A
B-AD	53	13	432	0.123	52	0.0	0.1	9.475	A
A-BCD	2	0.38	649	0.002	1	0.0	0.0	5.558	A
A-B	52	13			52				
A-C	565	141			565				
D-ABC	8	2	397	0.021	8	0.0	0.0	9.256	A
C-ABD	44	11	613	0.071	43	0.0	0.1	6.321	A
C-D	3	0.75			3				
C-A	559	140			559				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	57	14	604	0.095	57	0.1	0.1	6.579	A
B-AD	63	16	384	0.165	63	0.1	0.2	11.213	B
A-BCD	2	0.45	620	0.003	2	0.0	0.0	5.826	A
A-B	62	16			62				
A-C	675	169			675				
D-ABC	10	2	359	0.028	10	0.0	0.0	10.307	B
C-ABD	52	13	585	0.089	52	0.1	0.1	6.753	A
C-D	4	0.90			4				
C-A	667	167			667				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	70	18	547	0.129	70	0.1	0.1	7.552	A
B-AD	77	19	317	0.244	77	0.2	0.3	14.953	B
A-BCD	2	0.55	579	0.004	2	0.0	0.0	6.241	A
A-B	76	19			76				
A-C	827	207			827				
D-ABC	12	3	305	0.040	12	0.0	0.0	12.282	B
C-ABD	64	16	547	0.117	64	0.1	0.1	7.445	A
C-D	4	1			4				
C-A	817	204			817				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	70	18	546	0.129	70	0.1	0.1	7.563	A
B-AD	77	19	317	0.244	77	0.3	0.3	15.008	C
A-BCD	2	0.55	579	0.004	2	0.0	0.0	6.241	A
A-B	76	19			76				
A-C	827	207			827				
D-ABC	12	3	305	0.040	12	0.0	0.0	12.287	B
C-ABD	64	16	547	0.117	64	0.1	0.1	7.448	A
C-D	4	1			4				
C-A	817	204			817				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	57	14	604	0.095	57	0.1	0.1	6.591	A
B-AD	63	16	384	0.165	64	0.3	0.2	11.259	B
A-BCD	2	0.45	620	0.003	2	0.0	0.0	5.826	A
A-B	62	16			62				
A-C	675	169			675				
D-ABC	10	2	359	0.028	10	0.0	0.0	10.315	B
C-ABD	52	13	585	0.089	52	0.1	0.1	6.759	A
C-D	4	0.90			4				
C-A	667	167			667				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	48	12	641	0.075	48	0.1	0.1	6.066	A
B-AD	53	13	432	0.123	53	0.2	0.1	9.514	A
A-BCD	2	0.38	649	0.002	2	0.0	0.0	5.559	A
A-B	52	13			52				
A-C	565	141			565				
D-ABC	8	2	397	0.021	8	0.0	0.0	9.267	A
C-ABD	44	11	613	0.071	44	0.1	0.1	6.330	A
C-D	3	0.75			3				
C-A	559	140			559				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A

C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
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13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
B-AD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
A-BCD	0.00	0.00	0.25	0.45	0.48			N/A	N/A
D-ABC	0.03	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.10	0.03	0.25	0.45	0.48			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.32	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.25	0.45	0.48			N/A	N/A
C-ABD	0.13	0.03	0.26	0.47	0.49			N/A	N/A

13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.03	0.25	0.45	0.48			N/A	N/A
B-AD	0.32	0.03	0.31	1.11	1.40			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.13	0.03	0.25	0.45	0.48			N/A	N/A

13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
B-AD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.08	0.00	0.00	0.08	0.08			N/A	N/A



# 2037HG, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.56	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	80	100.000
B		ONE HOUR	✓	13	100.000
C		ONE HOUR	✓	79	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	7	73	0
	B	7	0	6	0
	C	73	6	0	0
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.59	0.0	0.5	A	6	8
B-AD	0.01	5.63	0.0	0.5	A	6	10
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						6	10
A-C						67	100
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	4.95	0.0	0.5	A	6	8
C-D						0	0
C-A						67	100

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	798	0.006	4	0.0	0.0	4.536	A
B-AD	5	1	659	0.008	5	0.0	0.0	5.510	A
A-BCD	0	0	1571	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	55	14			55				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	5	1	741	0.006	4	0.0	0.0	4.890	A
C-D	0	0			0				
C-A	55	14			55				

#### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	795	0.007	5	0.0	0.0	4.559	A

B-AD	6	2	654	0.010	6	0.0	0.0	5.558	A
A-BCD	0	0	1566	0.000	0	0.0	0.0	0.000	A
A-B	6	2			6				
A-C	66	16			66				
D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	5	1	738	0.007	5	0.0	0.0	4.914	A
C-D	0	0			0				
C-A	66	16			66				

23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	791	0.008	7	0.0	0.0	4.590	A
B-AD	8	2	647	0.012	8	0.0	0.0	5.626	A
A-BCD	0	0	1558	0.000	0	0.0	0.0	0.000	A
A-B	8	2			8				
A-C	80	20			80				
D-ABC	0	0	543	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	734	0.009	7	0.0	0.0	4.947	A
C-D	0	0			0				
C-A	80	20			80				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	791	0.008	7	0.0	0.0	4.591	A
B-AD	8	2	647	0.012	8	0.0	0.0	5.626	A
A-BCD	0	0	1558	0.000	0	0.0	0.0	0.000	A
A-B	8	2			8				
A-C	80	20			80				
D-ABC	0	0	543	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	734	0.009	7	0.0	0.0	4.947	A
C-D	0	0			0				
C-A	80	20			80				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	795	0.007	5	0.0	0.0	4.561	A
B-AD	6	2	654	0.010	6	0.0	0.0	5.558	A
A-BCD	0	0	1566	0.000	0	0.0	0.0	0.000	A
A-B	6	2			6				
A-C	66	16			66				
D-ABC	0	0	548	0.000	0	0.0	0.0	0.000	A
C-ABD	5	1	738	0.007	5	0.0	0.0	4.914	A
C-D	0	0			0				
C-A	66	16			66				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	5	1	798	0.006	5	0.0	0.0	4.537	A
B-AD	5	1	659	0.008	5	0.0	0.0	5.509	A
A-BCD	0	0	1571	0.000	0	0.0	0.0	0.000	A
A-B	5	1			5				
A-C	55	14			55				
D-ABC	0	0	551	0.000	0	0.0	0.0	0.000	A
C-ABD	5	1	741	0.006	5	0.0	0.0	4.890	A
C-D	0	0			0				
C-A	55	14			55				

Queue Variation Results for each time segment

22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

**23:45 - 00:00**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

**00:00 - 00:15**

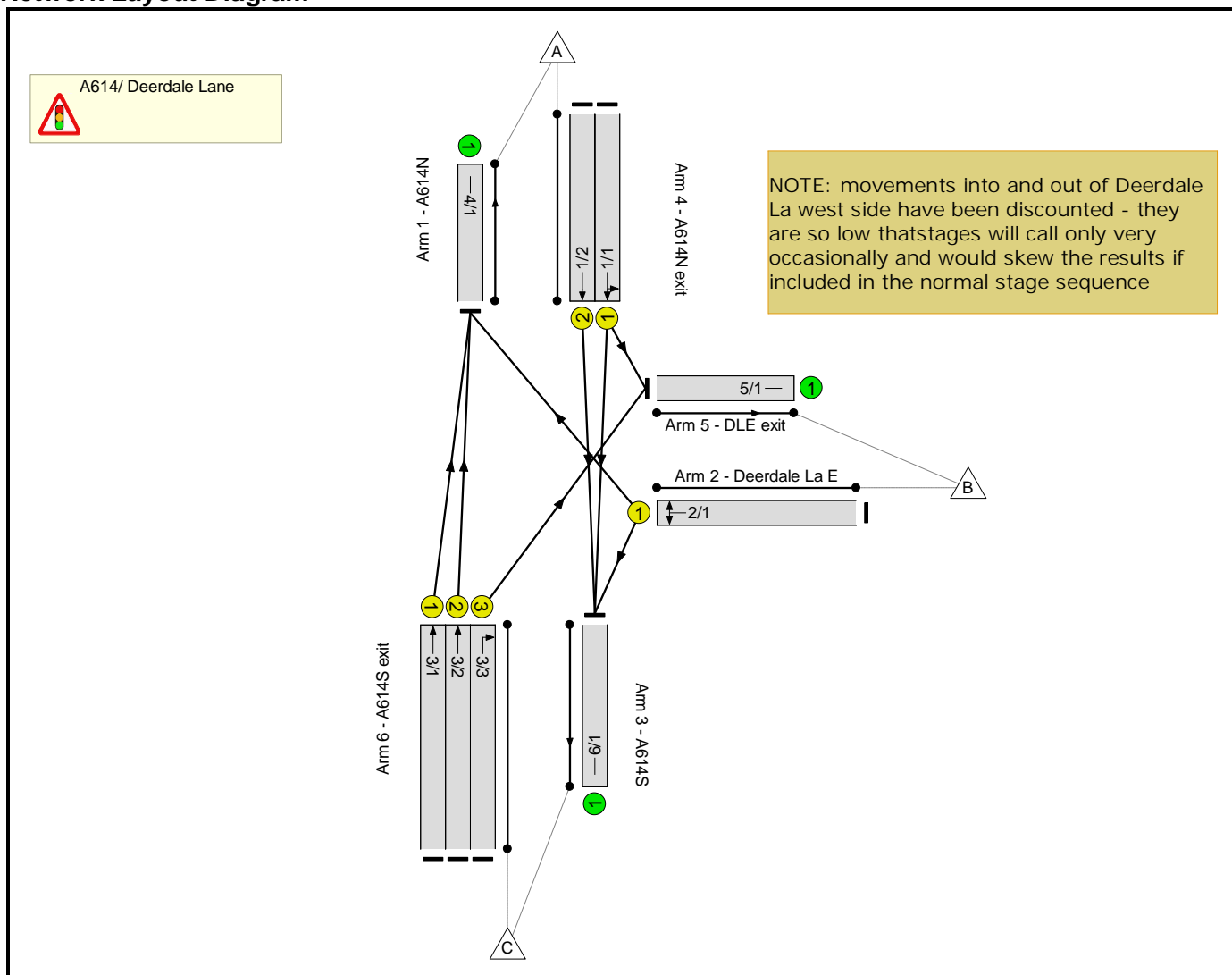
Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

Full Input Data And Results  
**Full Input Data And Results**

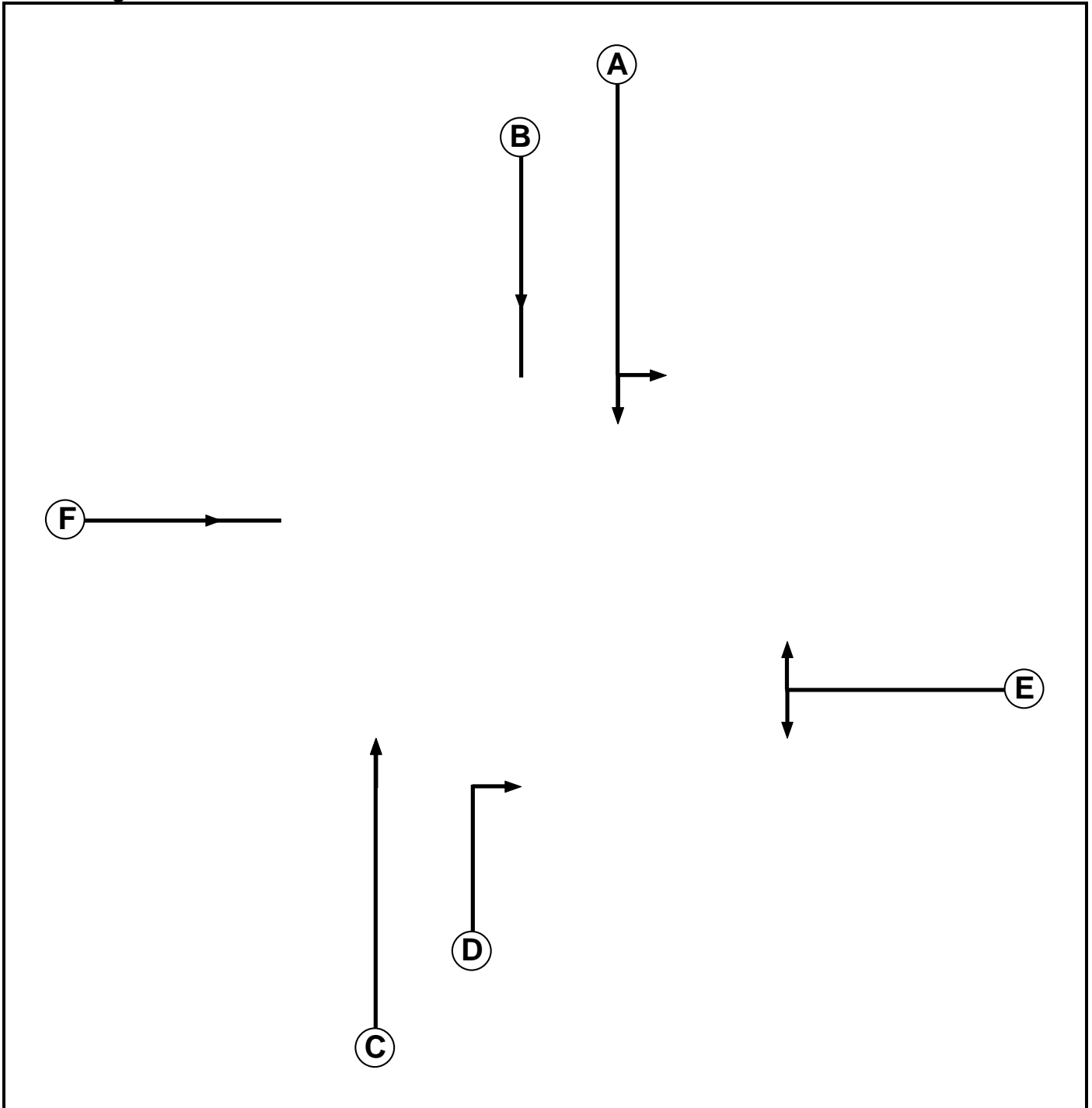
**User and Project Details**

<b>Project:</b>	<b>A614/ A617 tests</b>
<b>Title:</b>	<b>A614/ Deerdale Lane - minor moves removed 2 lane</b>
<b>Location:</b>	
<b>Client:</b>	NCC
<b>Additional detail:</b>	
<b>File name:</b>	A614-Deerdale 2 lane aheads minor moves removed_V4.lsg3x
<b>Author:</b>	rr
<b>Company:</b>	via
<b>Address:</b>	tbh

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7

## Full Input Data And Results

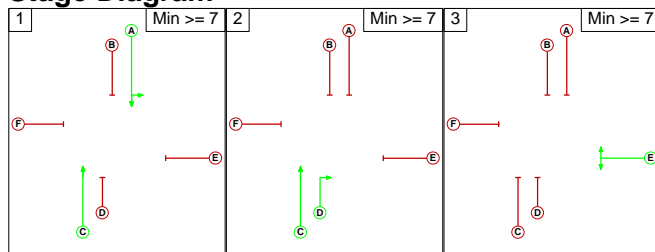
### Phase Intergrens Matrix

		Starting Phase					
		A	B	C	D	E	F
Terminating Phase	A	-	-	7	7	7	
	B	-		7	5	7	7
	C	-	7		-	7	7
	D	7	5	-		7	7
	E	8	8	8	8		8
	F	8	8	8	8	8	

### Phases in Stage

Stage No.	Phases in Stage
1	A C
2	C D
3	E

### Stage Diagram



### Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

### Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		7	7
	2	7		7
	3	8	8	



Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: A614/ Deerdale Lane**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: A614/ Deerdale Lane												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A614N)	U	A	2	3	60.0	User	1900	-	-	-	-	-
1/2 (A614N)	U	A	2	3	60.0	User	1900	-	-	-	-	-
2/1 (Deerdale La E)	U	E	2	3	60.0	User	1800	-	-	-	-	-
3/1 (A614S)	U	C	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A614S)	U	C	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A614S)	U	D	2	3	60.0	User	1800	-	-	-	-	-
4/1 (A614N exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (DLE exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A614S exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

## Full Input Data And Results

### Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'am2023'	08:00	09:00	01:00	
2: 'pm2023'	17:00	18:00	01:00	
3: 'ip2023'	13:00	14:00	01:00	
4: 'op2023'	23:00	00:00	01:00	
5: 'am2037'	08:00	09:00	01:00	
6: 'pm2037'	17:00	18:00	01:00	
7: 'ip2037'	13:00	14:00	01:00	
8: 'op2037'	23:00	00:00	01:00	
9: 'am2037 final'	08:00	09:00	01:00	
10: 'pm2037 final'	17:00	18:00	01:00	
11: 'ip2037 final'	13:00	14:00	01:00	
12: 'op2037 final'	23:00	00:00	01:00	
13: 'am2023LG'	08:00	09:00	01:00	
14: 'pm2023LG'	17:00	18:00	01:00	
15: 'ip2023LG'	13:00	14:00	01:00	
16: 'op2023LG'	23:00	00:00	01:00	
17: 'am2037LG'	08:00	09:00	01:00	
18: 'pm2037LG'	17:00	18:00	01:00	
19: 'ip2037LG'	13:00	14:00	01:00	
20: 'op2037LG'	23:00	00:00	01:00	
21: 'am2023HG'	08:00	09:00	01:00	
22: 'pm2023HG'	17:00	18:00	01:00	
23: 'ip2023HG'	13:00	14:00	01:00	
24: 'op2023HG'	23:00	00:00	01:00	
25: 'am2037HG'	08:00	09:00	01:00	
26: 'pm2037HG'	17:00	18:00	01:00	
27: 'ip2037HG'	13:00	14:00	01:00	
28: 'op2037HG'	23:00	00:00	01:00	

## Full Input Data And Results

**Scenario 1: 'am2023'** (FG1: 'am2023', Plan 1: 'normal')

### Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	91	980	1071
	B	56	0	71	127
	C	873	71	0	944
	Tot.	929	162	1051	2142

### Traffic Lane Flows

Lane	Scenario 1: am2023
Junctin: A614/ Deerdale Lane	
1/1	535
1/2	536
2/1	127
3/1	437
3/2	436
3/3	71
4/1	929
5/1	162
6/1	1051

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 2: 'pm2023'** (FG2: 'pm2023', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	63	892	955
	B	69	0	79	148
	C	915	48	0	963
	Tot.	984	111	971	2066

**Traffic Lane Flows**

Lane	Scenario 2: pm2023
<b>Junction: A614/ Deerdale Lane</b>	
1/1	478
1/2	477
2/1	148
3/1	458
3/2	457
3/3	48
4/1	984
5/1	111
6/1	971

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 3: 'ip2023'** (FG3: 'ip2023', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	57	589	646
	B	57	0	56	113
	C	588	51	0	639
	Tot.	645	108	645	1398

**Traffic Lane Flows**

Lane	Scenario 3: ip2023
<b>Junction: A614/ Deerdale Lane</b>	
1/1	323
1/2	323
2/1	113
3/1	294
3/2	294
3/3	51
4/1	645
5/1	108
6/1	645

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 4: 'op2023'** (FG4: 'op2023', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	6	58	64
	B	6	0	5	11
	C	57	5	0	62
	Tot.	63	11	63	137

**Traffic Lane Flows**

Lane	Scenario 4: op2023
<b>Junction: A614/ Deerdale Lane</b>	
1/1	31
1/2	33
2/1	11
3/1	29
3/2	28
3/3	5
4/1	63
5/1	11
6/1	63

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 5: 'am2037'** (FG5: 'am2037', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	92	1016	1108
	B	58	0	73	131
	C	904	73	0	977
	Tot.	962	165	1089	2216

**Traffic Lane Flows**

Lane	Scenario 5: am2037
<b>Junction: A614/ Deerdale Lane</b>	
1/1	554
1/2	554
2/1	131
3/1	452
3/2	452
3/3	73
4/1	962
5/1	165
6/1	1089



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 6: 'pm2037'** (FG6: 'pm2037', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	65	911	976
	B	70	0	80	150
	C	933	49	0	982
	Tot.	1003	114	991	2108

**Traffic Lane Flows**

Lane	Scenario 6: pm2037
<b>Junction: A614/ Deerdale Lane</b>	
1/1	488
1/2	488
2/1	150
3/1	467
3/2	466
3/3	49
4/1	1003
5/1	114
6/1	991

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 7: 'ip2037'** (FG7: 'ip2037', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	58	609	667
	B	58	0	57	115
	C	607	52	0	659
	Tot.	665	110	666	1441

**Traffic Lane Flows**

Lane	Scenario 7: ip2037
<b>Junction: A614/ Deerdale Lane</b>	
1/1	334
1/2	333
2/1	115
3/1	304
3/2	303
3/3	52
4/1	665
5/1	110
6/1	666

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 8: 'op2037'** (FG8: 'op2037', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	6	60	66
	B	6	0	5	11
	C	59	5	0	64
	Tot.	65	11	65	141

**Traffic Lane Flows**

Lane	Scenario 8: op2037
<b>Junction: A614/ Deerdale Lane</b>	
1/1	32
1/2	34
2/1	11
3/1	30
3/2	29
3/3	5
4/1	65
5/1	11
6/1	65

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 9: 'am2037 final'** (FG9: 'am2037 final', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	104	1170	1274
	B	63	0	74	137
	C	1009	74	0	1083
	Tot.	1072	178	1244	2494

**Traffic Lane Flows**

Lane	Scenario 9: am2037 final
<b>Junction: A614/ Deerdale Lane</b>	
1/1	637
1/2	637
2/1	137
3/1	505
3/2	504
3/3	74
4/1	1072
5/1	178
6/1	1244

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 10: 'pm2037 final'** (FG10: 'pm2037 final', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	71	1038	1109
	B	79	0	82	161
	C	1087	50	0	1137
	Tot.	1166	121	1120	2407

**Traffic Lane Flows**

Lane	Scenario 10: pm2037 final
<b>Junction: A614/ Deerdale Lane</b>	
1/1	554
1/2	555
2/1	161
3/1	544
3/2	543
3/3	50
4/1	1166
5/1	121
6/1	1120

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 11: 'ip2037 final'** (FG11: 'ip2037 final', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	64	692	756
	B	64	0	58	122
	C	687	53	0	740
	Tot.	751	117	750	1618

**Traffic Lane Flows**

Lane	Scenario 11: ip2037 final
<b>Junction: A614/ Deerdale Lane</b>	
1/1	378
1/2	378
2/1	122
3/1	344
3/2	343
3/3	53
4/1	751
5/1	117
6/1	750

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 12: 'op2037 final'** (FG12: 'op2037 final', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	6	68	74
	B	6	0	5	11
	C	67	5	0	72
	Tot.	73	11	73	157

**Traffic Lane Flows**

Lane	Scenario 12: op2037 final
<b>Junction: A614/ Deerdale Lane</b>	
1/1	36
1/2	38
2/1	11
3/1	34
3/2	33
3/3	5
4/1	73
5/1	11
6/1	73

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 13: 'am2023LG'** (FG13: 'am2023LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	86	930	1016
	B	54	0	67	121
	C	828	67	0	895
	Tot.	882	153	997	2032

**Traffic Lane Flows**

Lane	Scenario 13: am2023LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	508
1/2	508
2/1	121
3/1	414
3/2	414
3/3	67
4/1	882
5/1	153
6/1	997



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 14: 'pm2023LG'** (FG14: 'pm2023LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	60	841	901
	B	66	0	74	140
	C	863	45	0	908
	Tot.	929	105	915	1949

**Traffic Lane Flows**

Lane	Scenario 14: pm2023LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	451
1/2	450
2/1	140
3/1	432
3/2	431
3/3	45
4/1	929
5/1	105
6/1	915

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 15: 'ip2023LG'** (FG15: 'ip2023LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	54	559	613
	B	54	0	53	107
	C	558	48	0	606
	Tot.	612	102	612	1326

**Traffic Lane Flows**

Lane	Scenario 15: ip2023LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	306
1/2	307
2/1	107
3/1	279
3/2	279
3/3	48
4/1	612
5/1	102
6/1	612

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 16: 'op2023LG'** (FG16: 'op2023LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	5	55	60
	B	5	0	5	10
	C	54	5	0	59
	Tot.	59	10	60	129

**Traffic Lane Flows**

Lane	Scenario 16: op2023LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	29
1/2	31
2/1	10
3/1	27
3/2	27
3/3	5
4/1	59
5/1	10
6/1	60

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 17: 'am2037LG'** (FG17: 'am2037LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	84	918	1002
	B	54	0	66	120
	C	817	66	0	883
	Tot.	871	150	984	2005

**Traffic Lane Flows**

Lane	Scenario 17: am2037LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	501
1/2	501
2/1	120
3/1	409
3/2	408
3/3	66
4/1	871
5/1	150
6/1	984

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 18: 'pm2037LG'** (FG18: 'pm2037LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	60	822	882
	B	64	0	72	136
	C	842	44	0	886
	Tot.	906	104	894	1904

**Traffic Lane Flows**

Lane	Scenario 18: pm2037LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	441
1/2	441
2/1	136
3/1	421
3/2	421
3/3	44
4/1	906
5/1	104
6/1	894

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 19: 'ip2037LG'** (FG19: 'ip2037LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	53	550	603
	B	53	0	52	105
	C	547	47	0	594
	Tot.	600	100	602	1302

**Traffic Lane Flows**

Lane	Scenario 19: ip2037LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	302
1/2	301
2/1	105
3/1	274
3/2	273
3/3	47
4/1	600
5/1	100
6/1	602

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 20: 'op2037LG'** (FG20: 'op2037LG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	5	54	59
	B	5	0	5	10
	C	53	5	0	58
	Tot.	58	10	59	127

**Traffic Lane Flows**

Lane	Scenario 20: op2037LG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	29
1/2	30
2/1	10
3/1	27
3/2	26
3/3	5
4/1	58
5/1	10
6/1	59

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 21: 'am2023HG'** (FG21: 'am2023HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	95	1030	1125
	B	59	0	75	134
	C	918	74	0	992
	Tot.	977	169	1105	2251

**Traffic Lane Flows**

Lane	Scenario 21: am2023HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	562
1/2	563
2/1	134
3/1	459
3/2	459
3/3	74
4/1	977
5/1	169
6/1	1105



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 22: 'pm2023HG'** (FG22: 'pm2023HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	66	942	1008
	B	73	0	83	156
	C	967	50	0	1017
	Tot.	1040	116	1025	2181

**Traffic Lane Flows**

Lane	Scenario 22: pm2023HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	504
1/2	504
2/1	156
3/1	484
3/2	483
3/3	50
4/1	1040
5/1	116
6/1	1025

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 23: 'ip2023HG'** (FG23: 'ip2023HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	59	619	678
	B	59	0	59	118
	C	619	53	0	672
	Tot.	678	112	678	1468

**Traffic Lane Flows**

Lane	Scenario 23: ip2023HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	339
1/2	339
2/1	118
3/1	310
3/2	309
3/3	53
4/1	678
5/1	112
6/1	678

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 24: 'op2023HG'** (FG24: 'op2023HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	6	61	67
	B	6	0	6	12
	C	60	5	0	65
	Tot.	66	11	67	144

**Traffic Lane Flows**

Lane	Scenario 24: op2023HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	33
1/2	34
2/1	12
3/1	30
3/2	30
3/3	5
4/1	66
5/1	11
6/1	67

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 25: 'am2037HG'** (FG25: 'am2037HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	113	1267	1380
	B	67	0	82	149
	C	1097	82	0	1179
	Tot.	1164	195	1349	2708

**Traffic Lane Flows**

Lane	Scenario 25: am2037HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	690
1/2	690
2/1	149
3/1	549
3/2	548
3/3	82
4/1	1164
5/1	195
6/1	1349

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 26: 'pm2037HG'** (FG26: 'pm2037HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	78	1154	1232
	B	87	0	93	180
	C	1206	56	0	1262
	Tot.	1293	134	1247	2674

**Traffic Lane Flows**

Lane	Scenario 26: pm2037HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	616
1/2	616
2/1	180
3/1	603
3/2	603
3/3	56
4/1	1293
5/1	134
6/1	1247

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 27: 'ip2037HG'** (FG27: 'ip2037HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	69	751	820
	B	69	0	65	134
	C	746	58	0	804
	Tot.	815	127	816	1758

**Traffic Lane Flows**

Lane	Scenario 27: ip2037HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	410
1/2	410
2/1	134
3/1	373
3/2	373
3/3	58
4/1	815
5/1	127
6/1	816

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 28: 'op2037HG'** (FG28: 'op2037HG', Plan 1: 'normal')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	7	73	80
	B	7	0	5	12
	C	73	6	0	79
	Tot.	80	13	78	171

**Traffic Lane Flows**

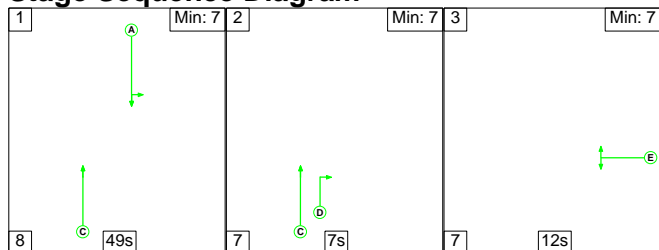
Lane	Scenario 28: op2037HG
<b>Junction: A614/ Deerdale Lane</b>	
1/1	39
1/2	41
2/1	12
3/1	37
3/2	36
3/3	6
4/1	80
5/1	13
6/1	78

### Lane Saturation Flows

Junction: A614/ Deerdale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Deerdale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (DLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

### Scenario 1: 'am2023' (FG1: 'am2023', Plan 1: 'normal')

#### Stage Sequence Diagram

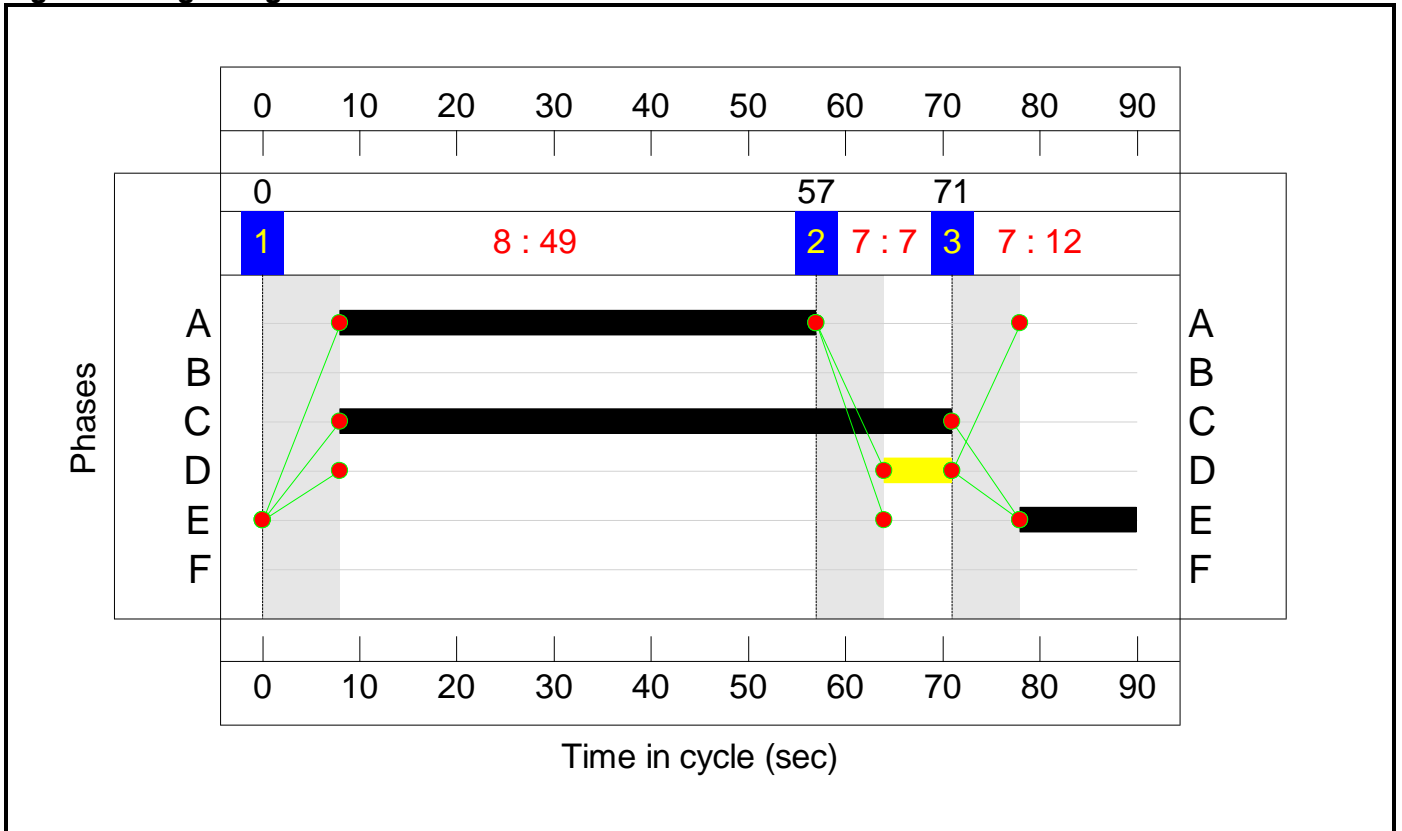


#### Stage Timings

Stage	1	2	3
Duration	49	7	12
Change Point	0	57	71



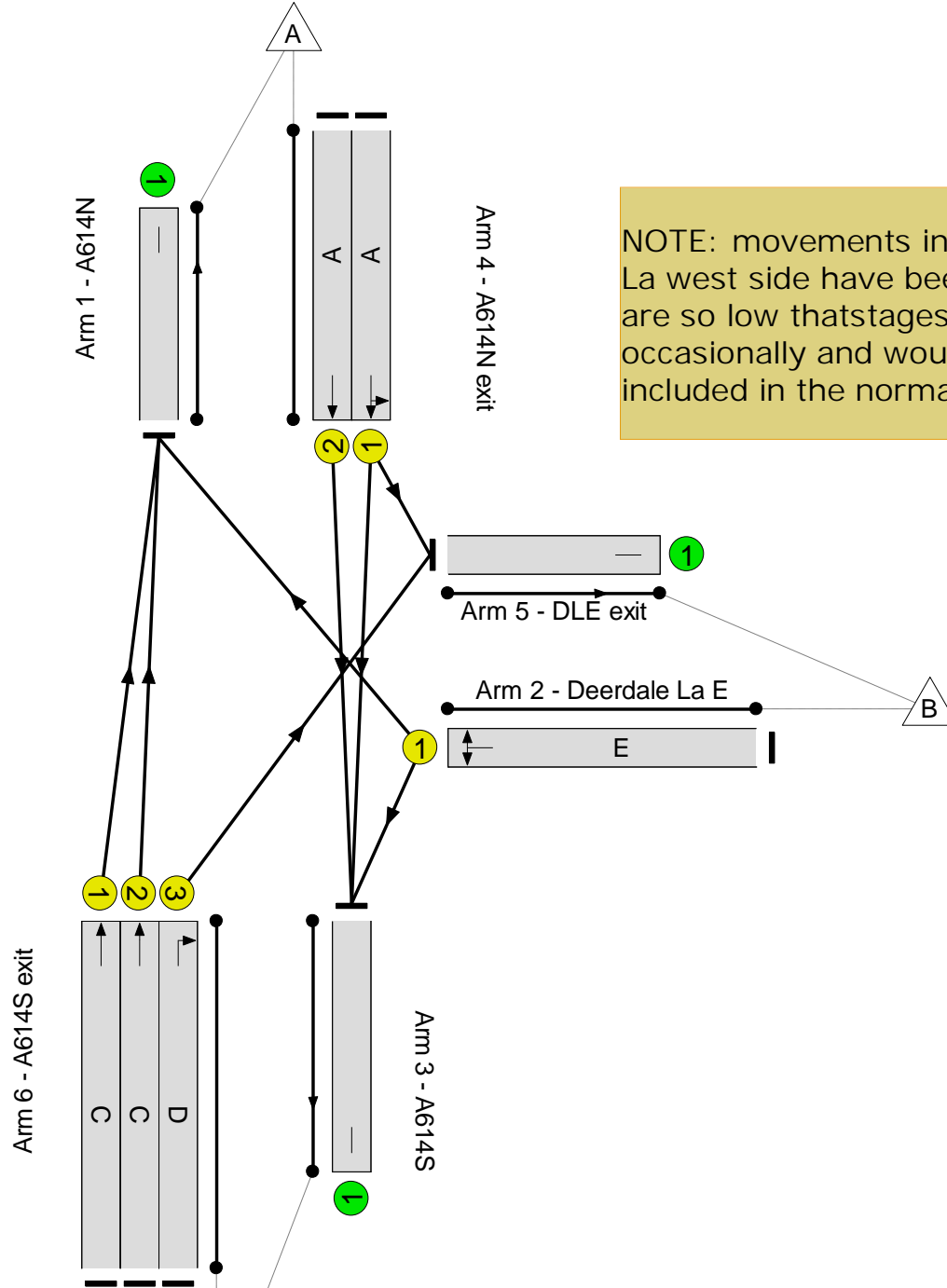

### Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 77.2 %  
Total Traffic Delay: 9.3 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>50.8%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>50.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	49	-	535	1900	1056	50.7%
1/2	A614N Ahead	U	N/A	N/A	A		1	49	-	536	1900	1056	50.8%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	12	-	127	1800	260	48.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	63	-	437	1900	1351	32.3%
3/2	A614S Ahead	U	N/A	N/A	C		1	63	-	436	1900	1351	32.3%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	71	1800	160	44.4%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	929	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	162	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1051	Inf	Inf	0.0%

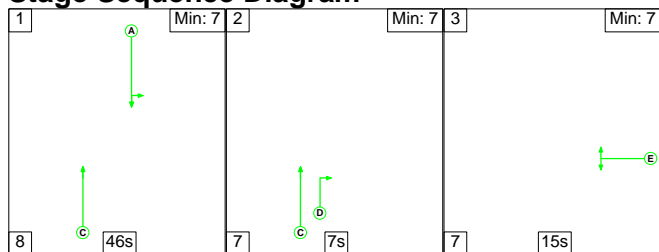
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.9	2.4	0.0	9.3	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.9	2.4	0.0	9.3	-	-	-	-
1/1	535	535	-	-	-	1.8	0.5	-	2.4	15.8	8.2	0.5	8.7
1/2	536	536	-	-	-	1.8	0.5	-	2.4	15.8	8.2	0.5	8.7
2/1	127	127	-	-	-	1.3	0.5	-	1.7	48.9	2.9	0.5	3.4
3/1	437	437	-	-	-	0.6	0.2	-	0.8	6.8	4.0	0.2	4.2
3/2	436	436	-	-	-	0.6	0.2	-	0.8	6.8	4.0	0.2	4.2
3/3	71	71	-	-	-	0.8	0.4	-	1.2	59.0	1.7	0.4	2.1
4/1	929	929	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	162	162	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1051	1051	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		77.2	Total Delay for Signalled Lanes (pcuHr):		9.26	Cycle Time (s): 90				
			PRC Over All Lanes (%):		77.2	Total Delay Over All Lanes(pcuHr):		9.26					

Full Input Data And Results

Scenario 2: 'pm2023' (FG2: 'pm2023', Plan 1: 'normal')

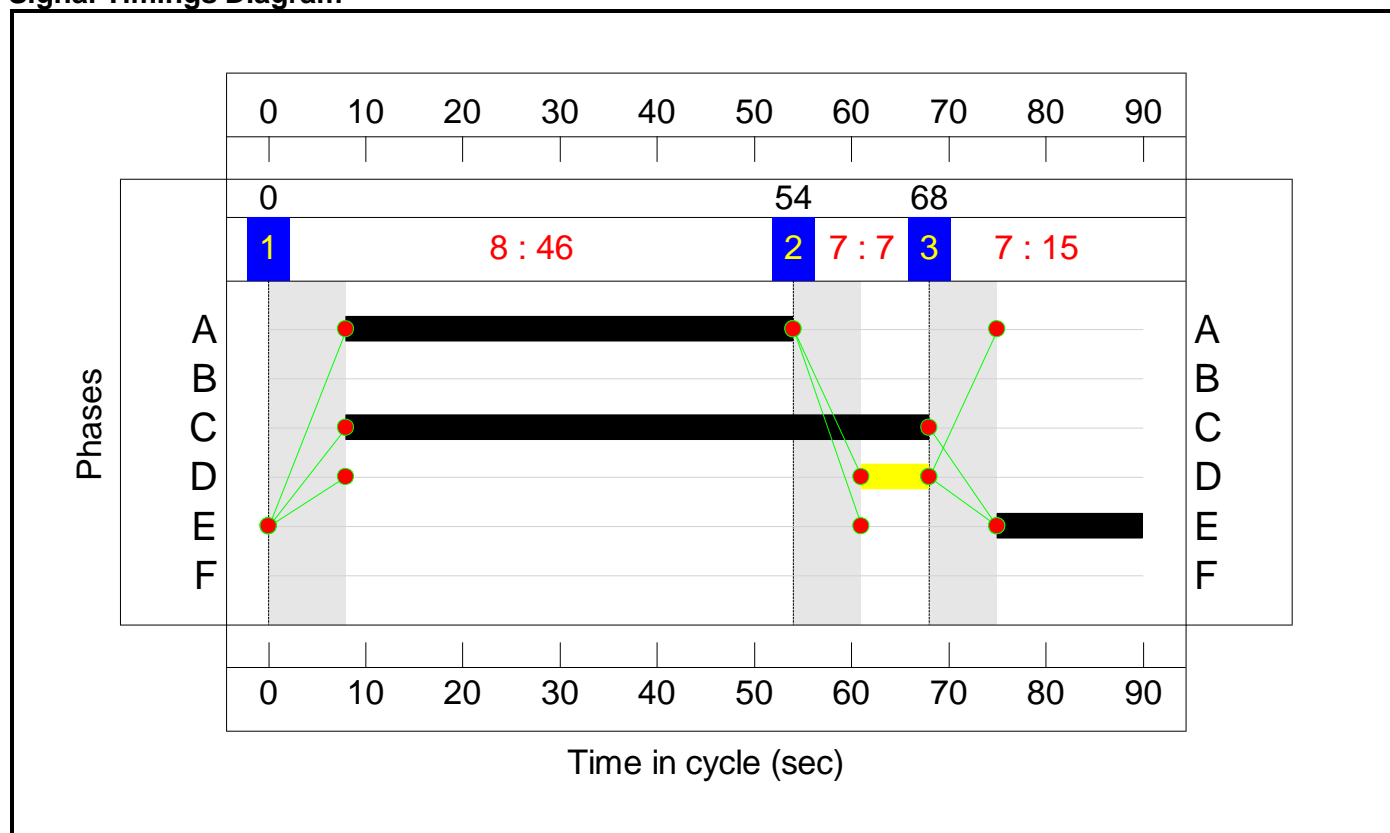
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

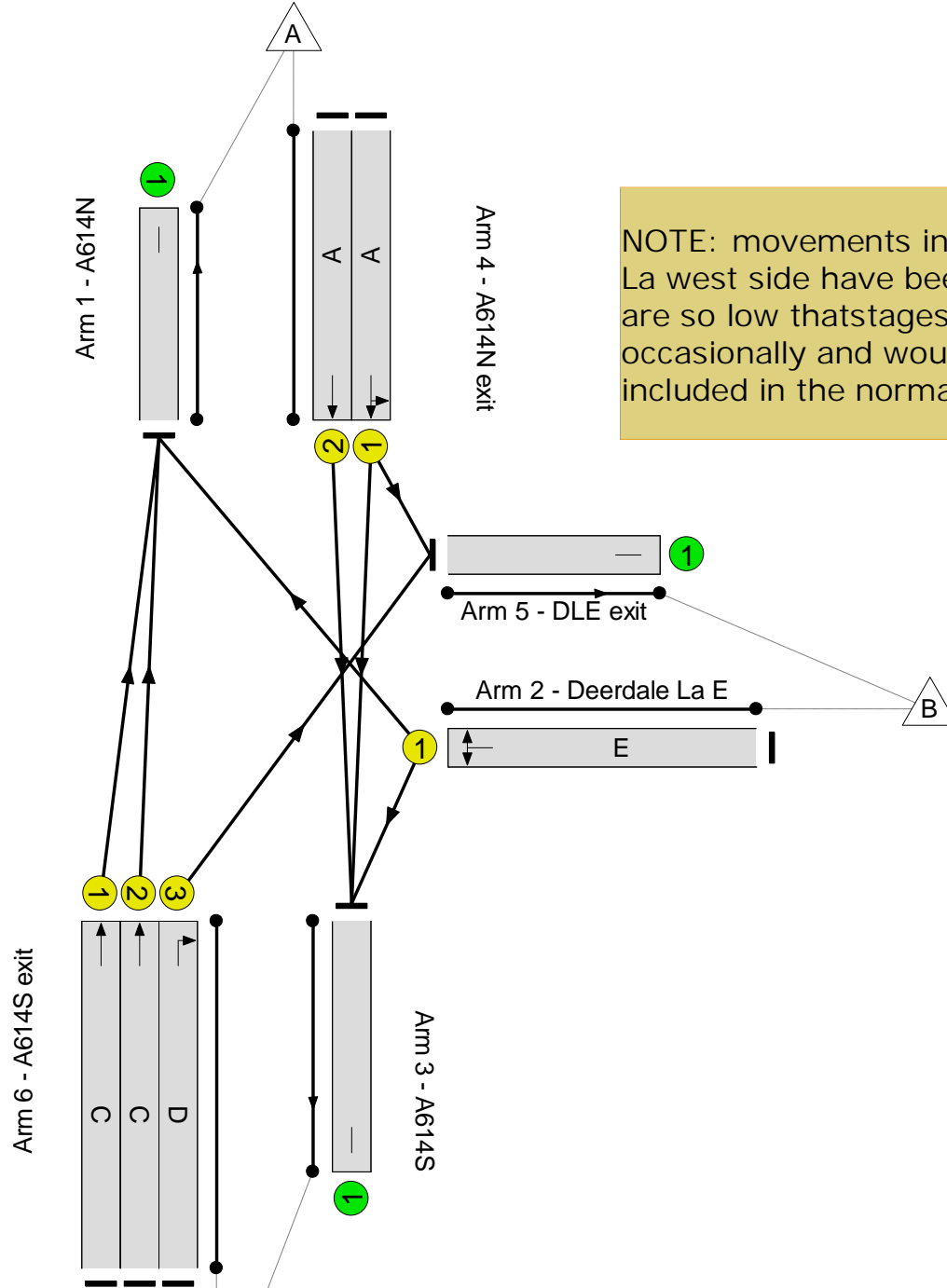

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 86.8 %  
Total Traffic Delay: 9.2 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>48.2%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>48.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	478	1900	992	48.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	477	1900	992	48.1%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	148	1800	320	46.3%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	458	1900	1288	35.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	457	1900	1288	35.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	48	1800	160	30.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	984	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	111	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	971	Inf	Inf	0.0%

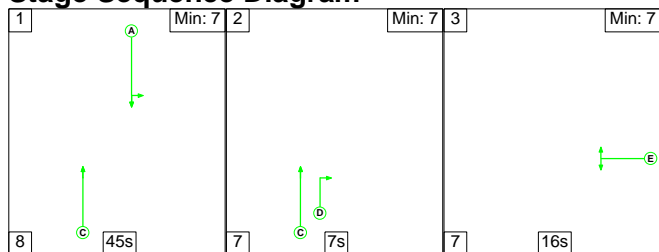
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	7.1	2.1	0.0	9.2	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	7.1	2.1	0.0	9.2	-	-	-	-
1/1	478	478	-	-	-	1.8	0.5	-	2.3	17.2	7.6	0.5	8.0
1/2	477	477	-	-	-	1.8	0.5	-	2.3	17.2	7.6	0.5	8.0
2/1	148	148	-	-	-	1.4	0.4	-	1.8	43.6	3.3	0.4	3.7
3/1	458	458	-	-	-	0.8	0.3	-	1.1	8.3	4.8	0.3	5.1
3/2	457	457	-	-	-	0.8	0.3	-	1.1	8.3	4.8	0.3	5.1
3/3	48	48	-	-	-	0.5	0.2	-	0.7	54.4	1.1	0.2	1.3
4/1	984	984	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	111	111	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	971	971	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		86.8	Total Delay for Signalled Lanes (pcuHr):		9.20	Cycle Time (s): 90				
			PRC Over All Lanes (%):		86.8	Total Delay Over All Lanes(pcuHr):		9.20					

Full Input Data And Results

Scenario 3: 'ip2023' (FG3: 'ip2023', Plan 1: 'normal')

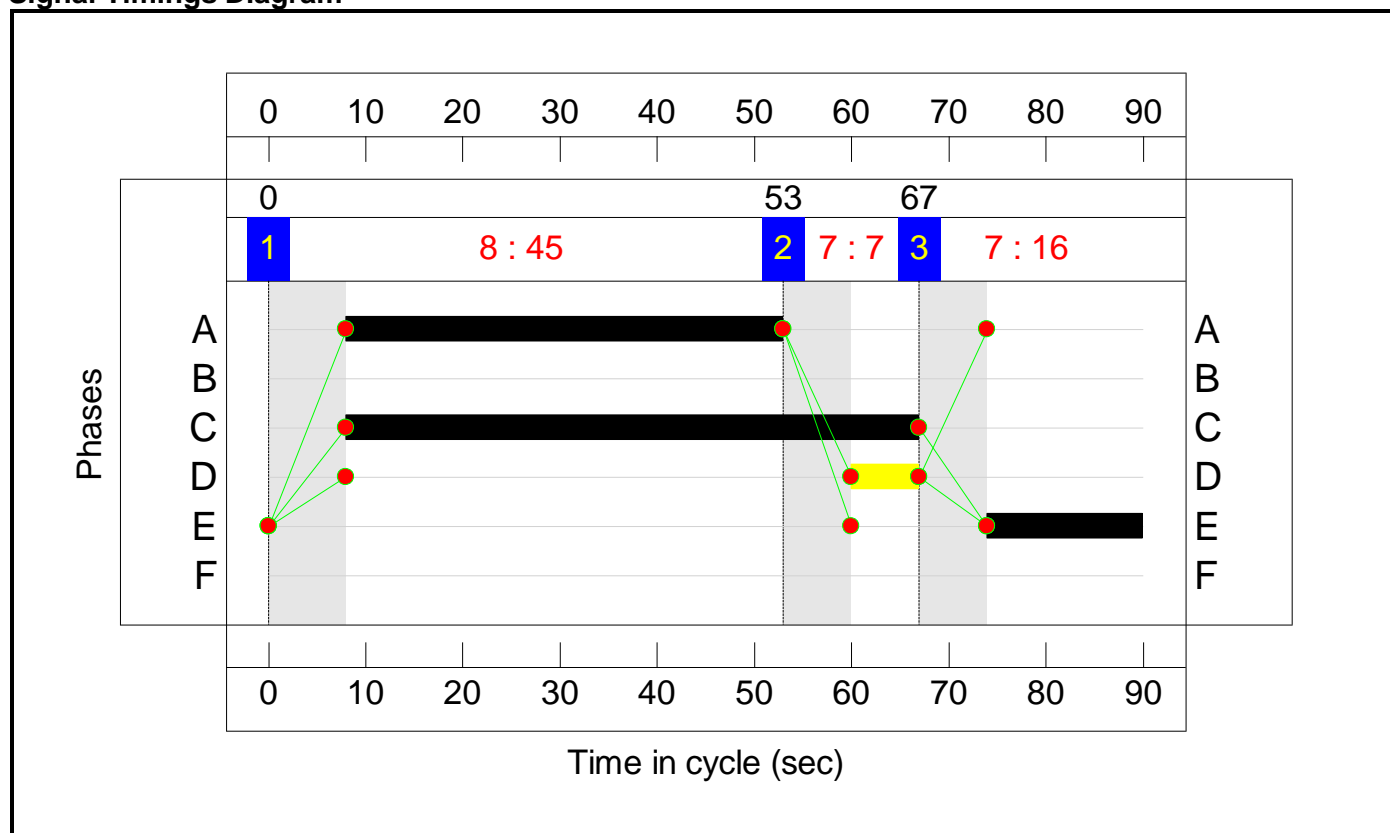
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

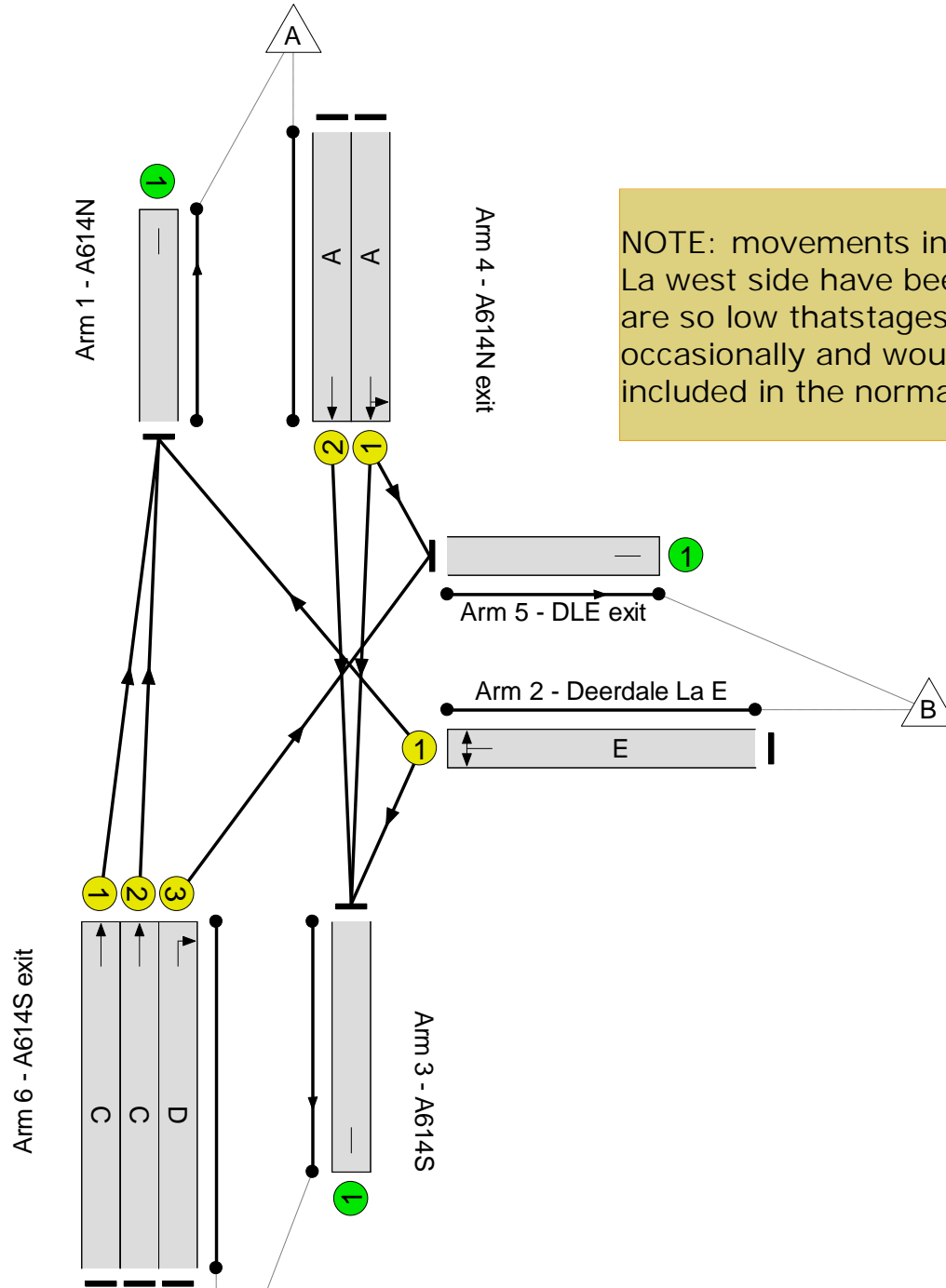
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 170.6 %  
Total Traffic Delay: 6.1 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	33.3%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	33.3%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	323	1900	971	33.3%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	323	1900	971	33.3%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	113	1800	340	33.2%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	294	1900	1267	23.2%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	294	1900	1267	23.2%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	51	1800	160	31.9%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	645	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	108	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	645	Inf	Inf	0.0%

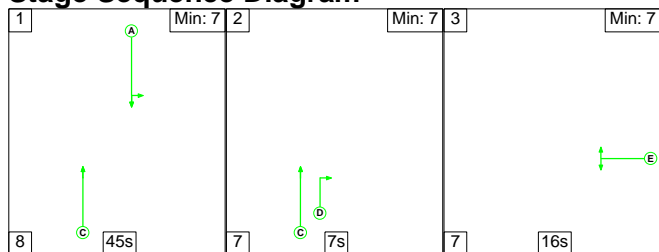
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	4.8	1.3	0.0	6.1	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	4.8	1.3	0.0	6.1	-	-	-	-
1/1	323	323	-	-	-	1.2	0.2	-	1.4	15.7	4.8	0.2	5.0
1/2	323	323	-	-	-	1.2	0.2	-	1.4	15.7	4.8	0.2	5.0
2/1	113	113	-	-	-	1.0	0.2	-	1.2	39.5	2.4	0.2	2.7
3/1	294	294	-	-	-	0.5	0.2	-	0.6	7.8	2.9	0.2	3.0
3/2	294	294	-	-	-	0.5	0.2	-	0.6	7.8	2.9	0.2	3.0
3/3	51	51	-	-	-	0.5	0.2	-	0.8	54.9	1.2	0.2	1.4
4/1	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	108	108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	645	645	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		170.6	Total Delay for Signalled Lanes (pcuHr):		6.11	Cycle Time (s): 90				
			PRC Over All Lanes (%):		170.6	Total Delay Over All Lanes(pcuHr):		6.11					

Full Input Data And Results

Scenario 4: 'op2023' (FG4: 'op2023', Plan 1: 'normal')

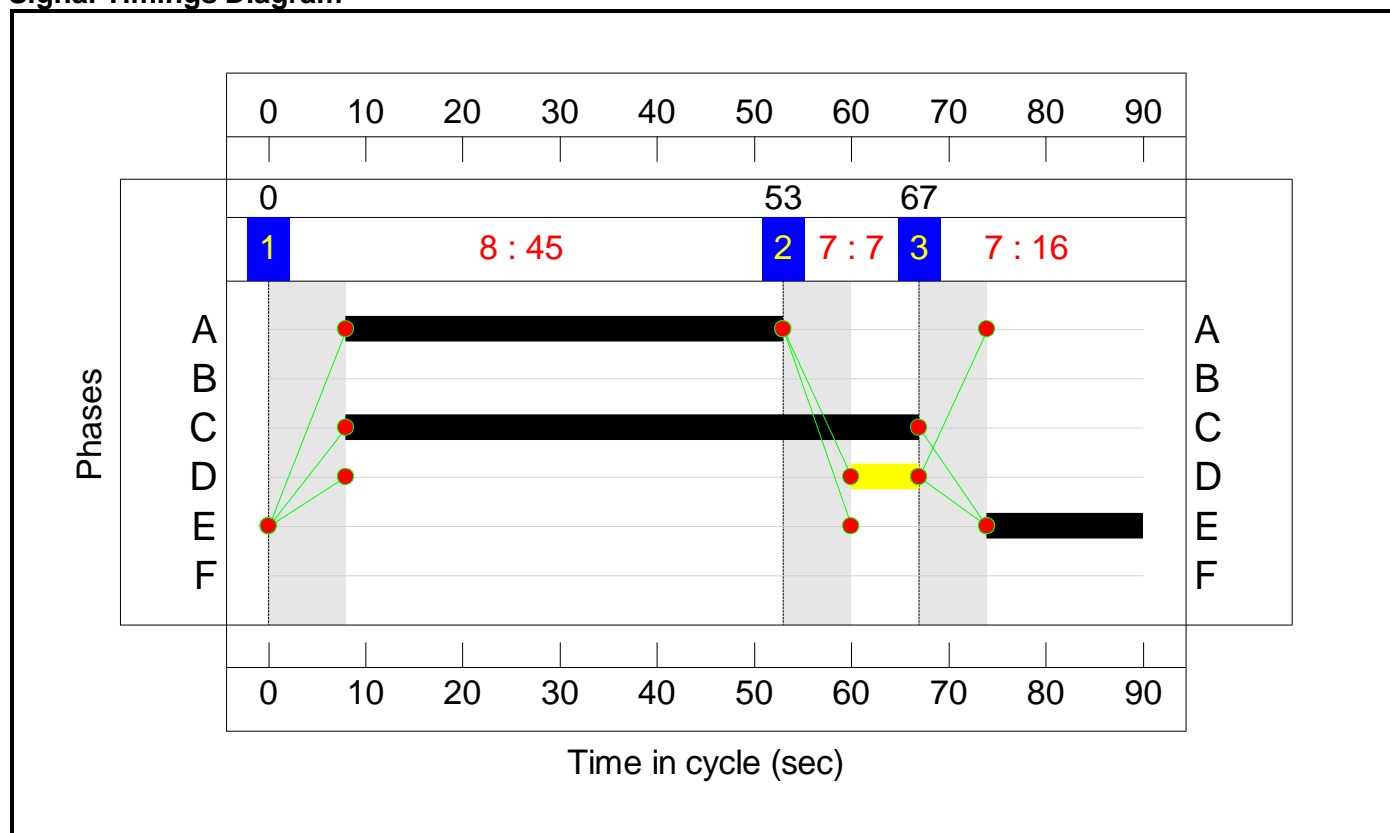
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

Signal Timings Diagram

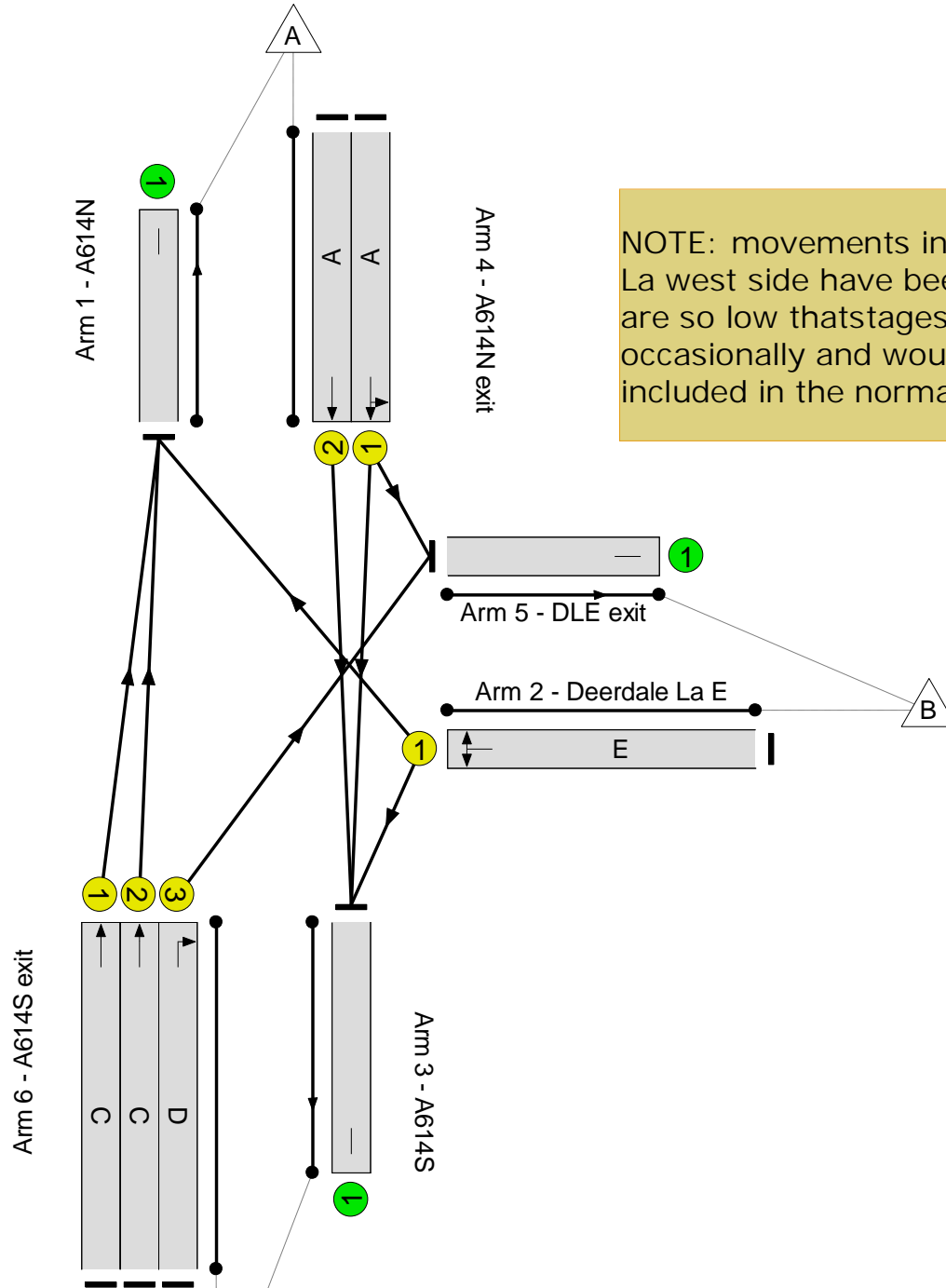




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 2548.5 %  
Total Traffic Delay: 0.5 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.4%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.4%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	31	1900	971	3.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	33	1900	971	3.4%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	11	1800	340	3.2%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	29	1900	1267	2.3%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	28	1900	1267	2.2%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	63	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	11	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	63	Inf	Inf	0.0%

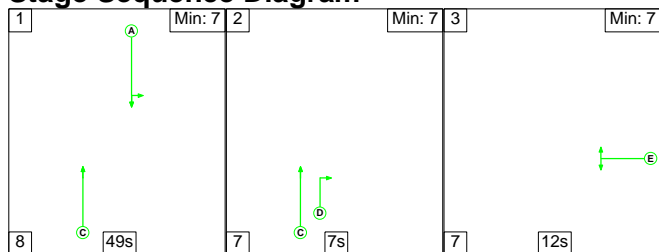
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	31	31	-	-	-	0.1	0.0	-	0.1	12.9	0.4	0.0	0.4
1/2	33	33	-	-	-	0.1	0.0	-	0.1	12.9	0.4	0.0	0.4
2/1	11	11	-	-	-	0.1	0.0	-	0.1	35.5	0.2	0.0	0.2
3/1	29	29	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.3
3/2	28	28	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.2
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	63	63	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	11	11	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	63	63	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2548.5		PRC Over All Lanes (%): 2548.5		Total Delay for Signalled Lanes (pcuHr): 0.51		Total Delay Over All Lanes(pcuHr): 0.51		Cycle Time (s): 90		

Full Input Data And Results

Scenario 5: 'am2037' (FG5: 'am2037', Plan 1: 'normal')

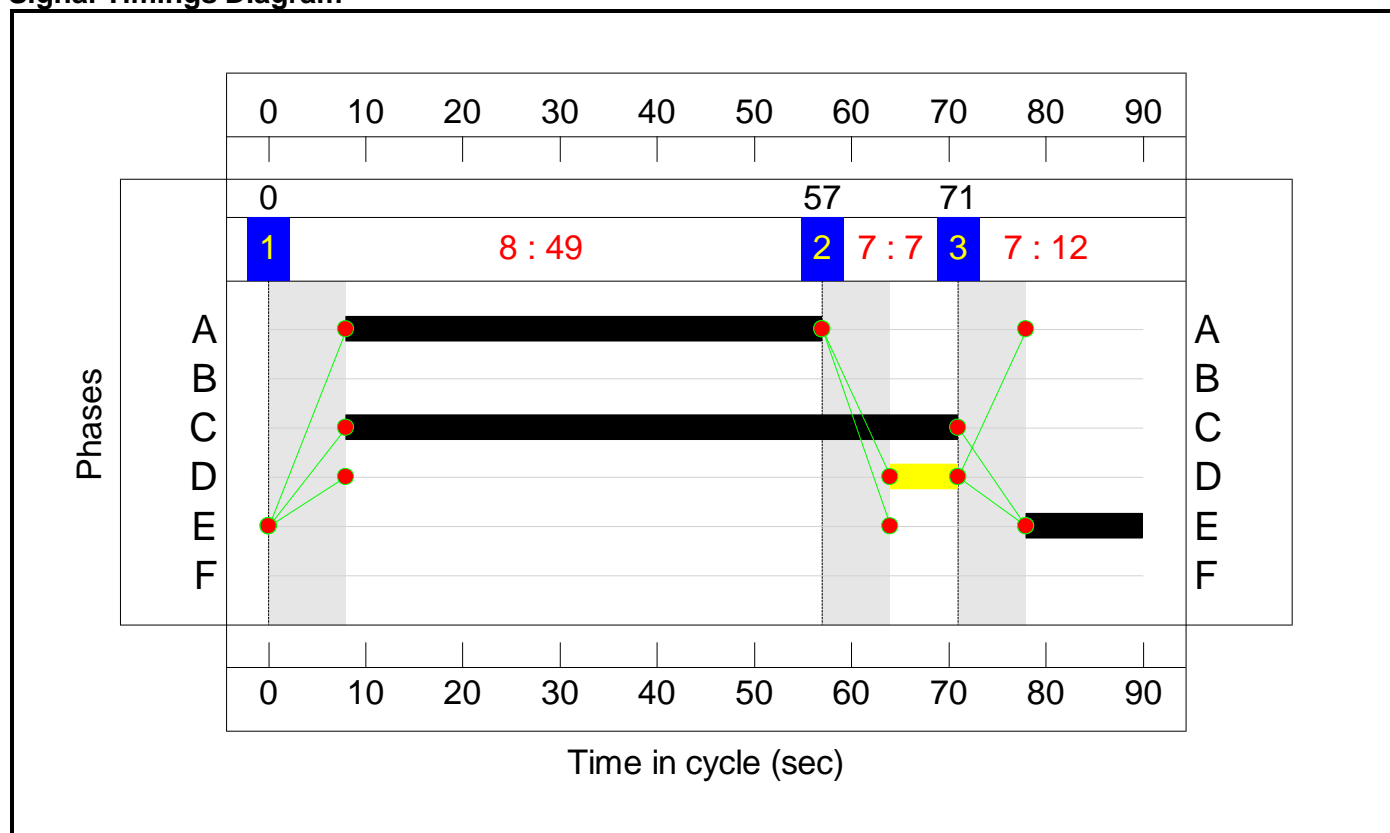
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	49	7	12
Change Point	0	57	71

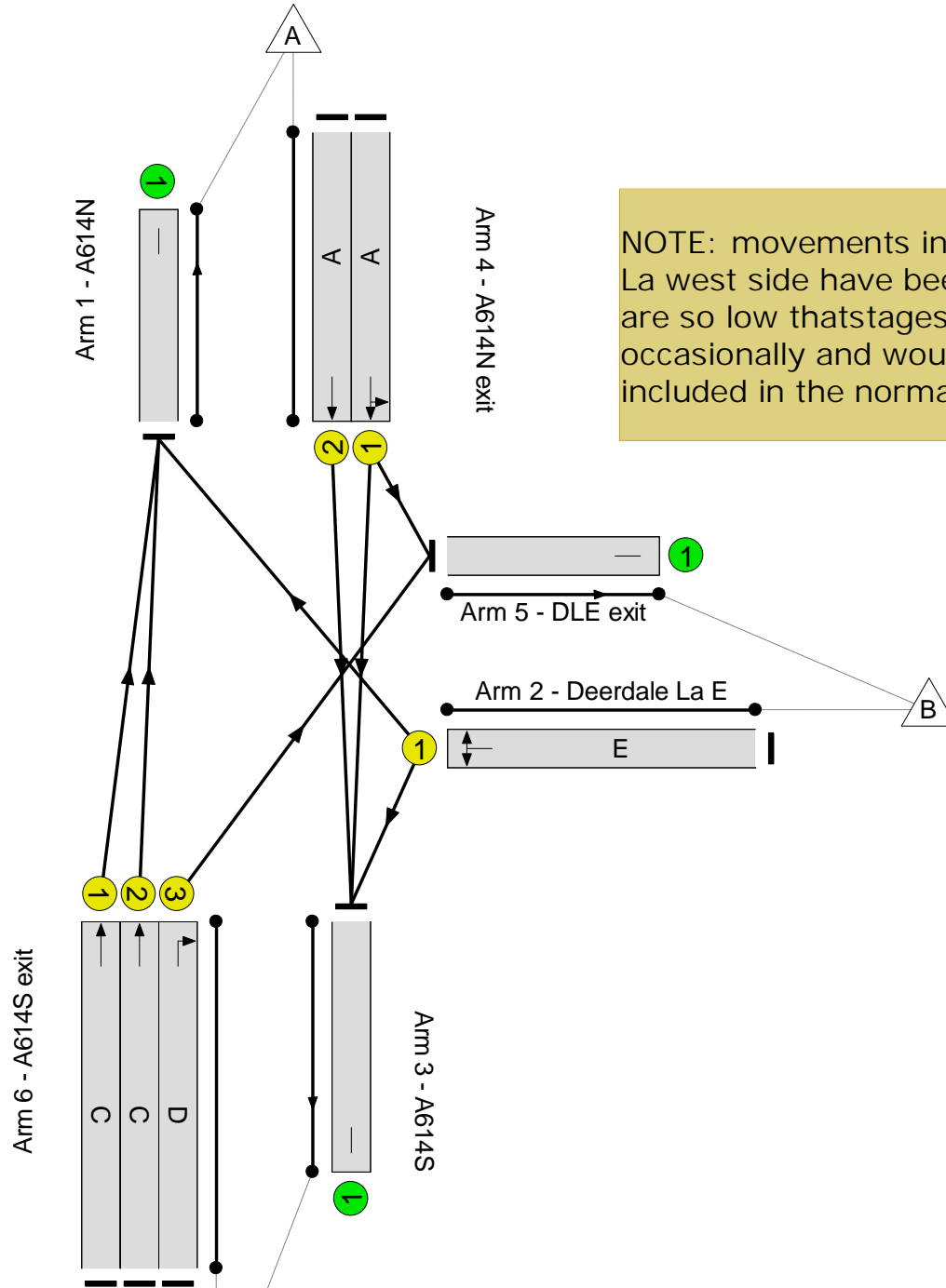
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 71.5 %  
Total Traffic Delay: 9.7 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	52.5%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	52.5%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	49	-	554	1900	1056	52.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	49	-	554	1900	1056	52.5%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	12	-	131	1800	260	50.4%
3/1	A614S Ahead	U	N/A	N/A	C		1	63	-	452	1900	1351	33.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	63	-	452	1900	1351	33.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	73	1800	160	45.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	962	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	165	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1089	Inf	Inf	0.0%

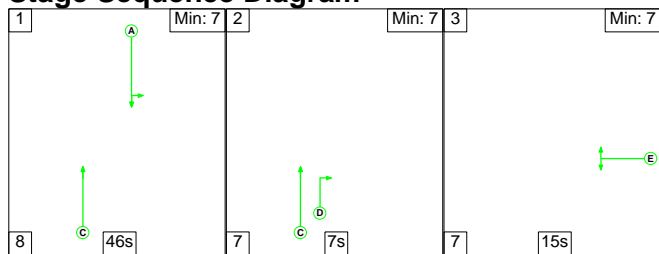


Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	7.2	2.5	0.0	9.7	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	7.2	2.5	0.0	9.7	-	-	-	-
1/1	554	554	-	-	-	1.9	0.6	-	2.5	16.1	8.6	0.6	9.2
1/2	554	554	-	-	-	1.9	0.6	-	2.5	16.1	8.6	0.6	9.2
2/1	131	131	-	-	-	1.3	0.5	-	1.8	49.4	3.0	0.5	3.5
3/1	452	452	-	-	-	0.6	0.3	-	0.9	6.9	4.3	0.3	4.5
3/2	452	452	-	-	-	0.6	0.3	-	0.9	6.9	4.3	0.3	4.5
3/3	73	73	-	-	-	0.8	0.4	-	1.2	59.5	1.7	0.4	2.1
4/1	962	962	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	165	165	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1089	1089	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		71.5	Total Delay for Signalled Lanes (pcuHr):			9.71	Cycle Time (s): 90			
			PRC Over All Lanes (%):		71.5	Total Delay Over All Lanes(pcuHr):			9.71				

Full Input Data And Results  
**Scenario 6: 'pm2037'** (FG6: 'pm2037', Plan 1: 'normal')

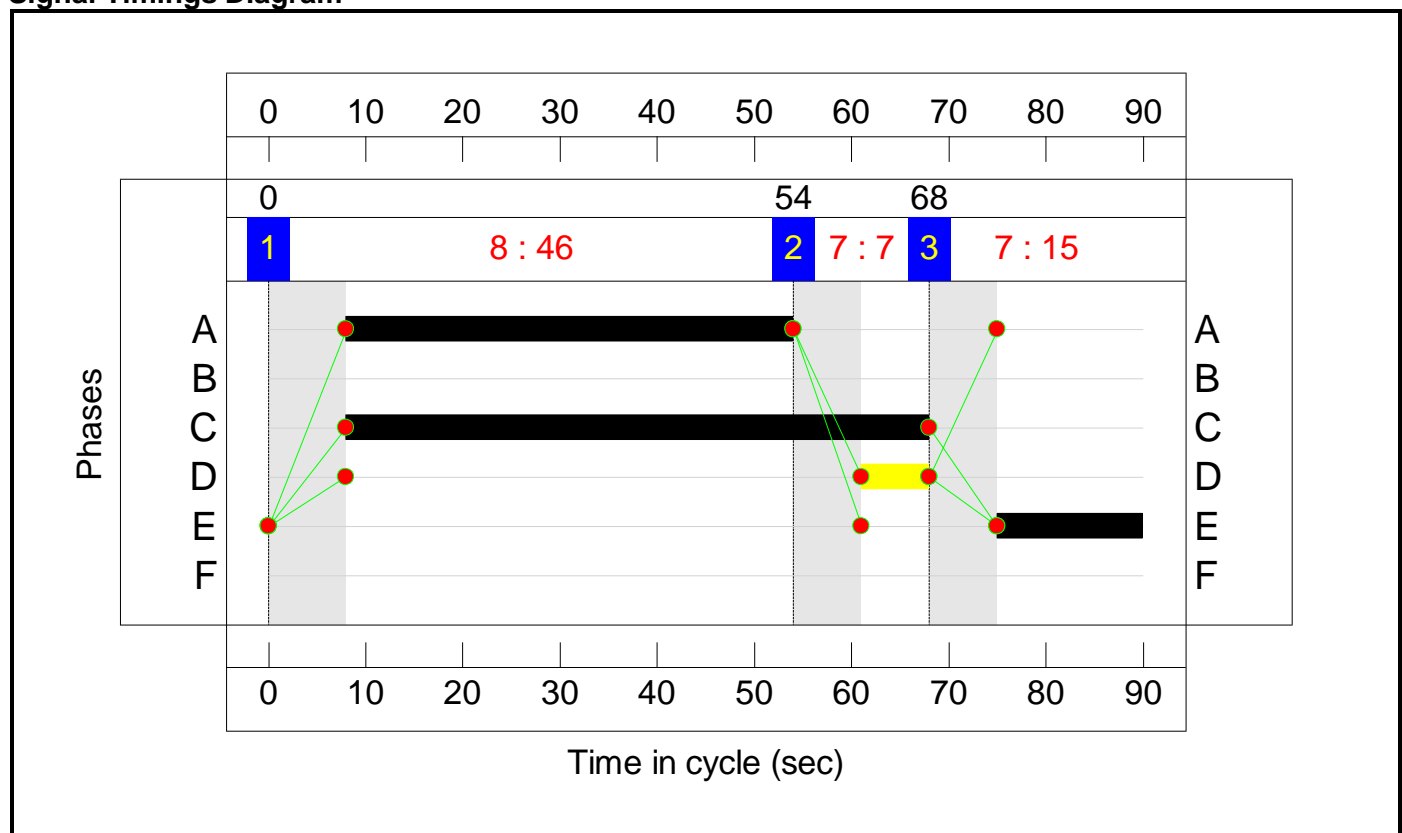
**Stage Sequence Diagram**



**Stage Timings**

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

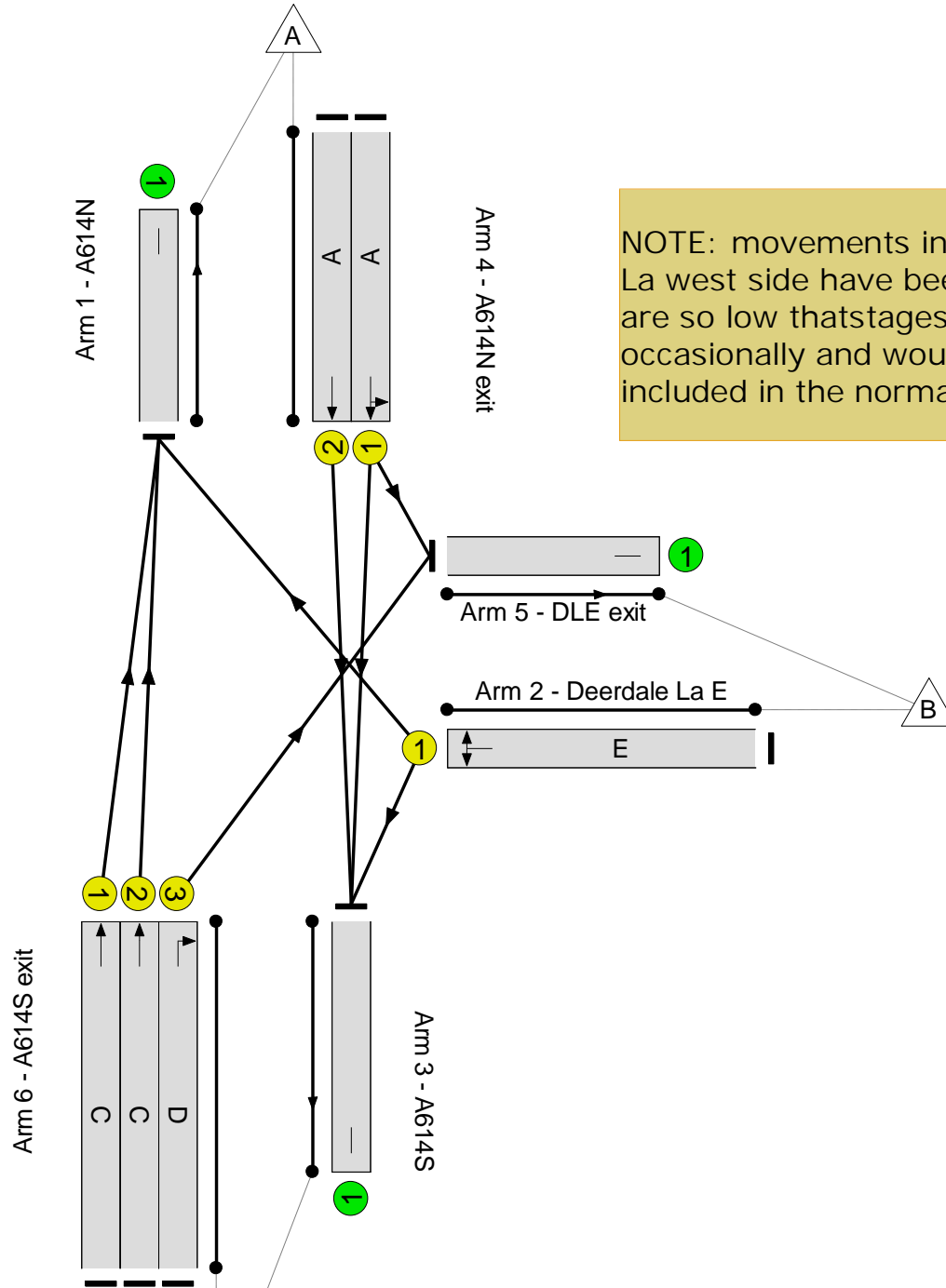
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 83.0 %  
Total Traffic Delay: 9.5 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>49.2%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>49.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	488	1900	992	49.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	488	1900	992	49.2%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	150	1800	320	46.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	467	1900	1288	36.3%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	466	1900	1288	36.2%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	49	1800	160	30.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1003	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	114	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	991	Inf	Inf	0.0%

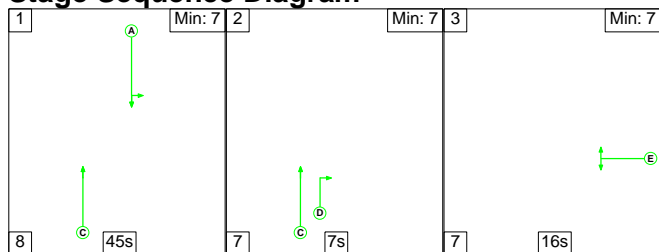
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	7.3	2.2	0.0	9.5	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	7.3	2.2	0.0	9.5	-	-	-	-
1/1	488	488	-	-	-	1.9	0.5	-	2.4	17.4	7.7	0.5	8.2
1/2	488	488	-	-	-	1.9	0.5	-	2.4	17.4	7.7	0.5	8.2
2/1	150	150	-	-	-	1.4	0.4	-	1.8	43.7	3.3	0.4	3.8
3/1	467	467	-	-	-	0.8	0.3	-	1.1	8.4	4.9	0.3	5.2
3/2	466	466	-	-	-	0.8	0.3	-	1.1	8.4	4.9	0.3	5.2
3/3	49	49	-	-	-	0.5	0.2	-	0.7	54.6	1.1	0.2	1.4
4/1	1003	1003	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	114	114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	991	991	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		83.0	Total Delay for Signalled Lanes (pcuHr):		9.45	Cycle Time (s): 90				
			PRC Over All Lanes (%):		83.0	Total Delay Over All Lanes(pcuHr):		9.45					

Full Input Data And Results

Scenario 7: 'ip2037' (FG7: 'ip2037', Plan 1: 'normal')

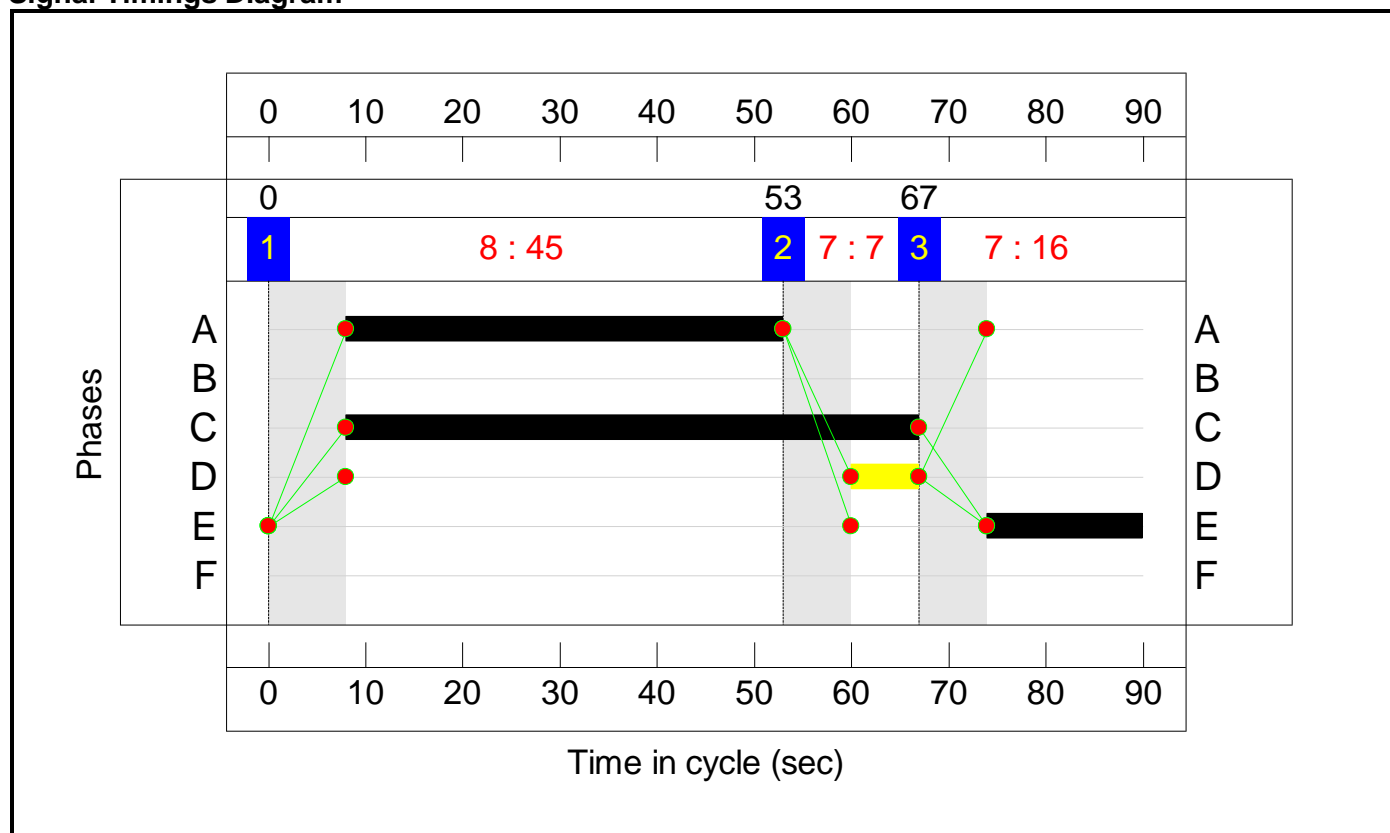
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

Signal Timings Diagram

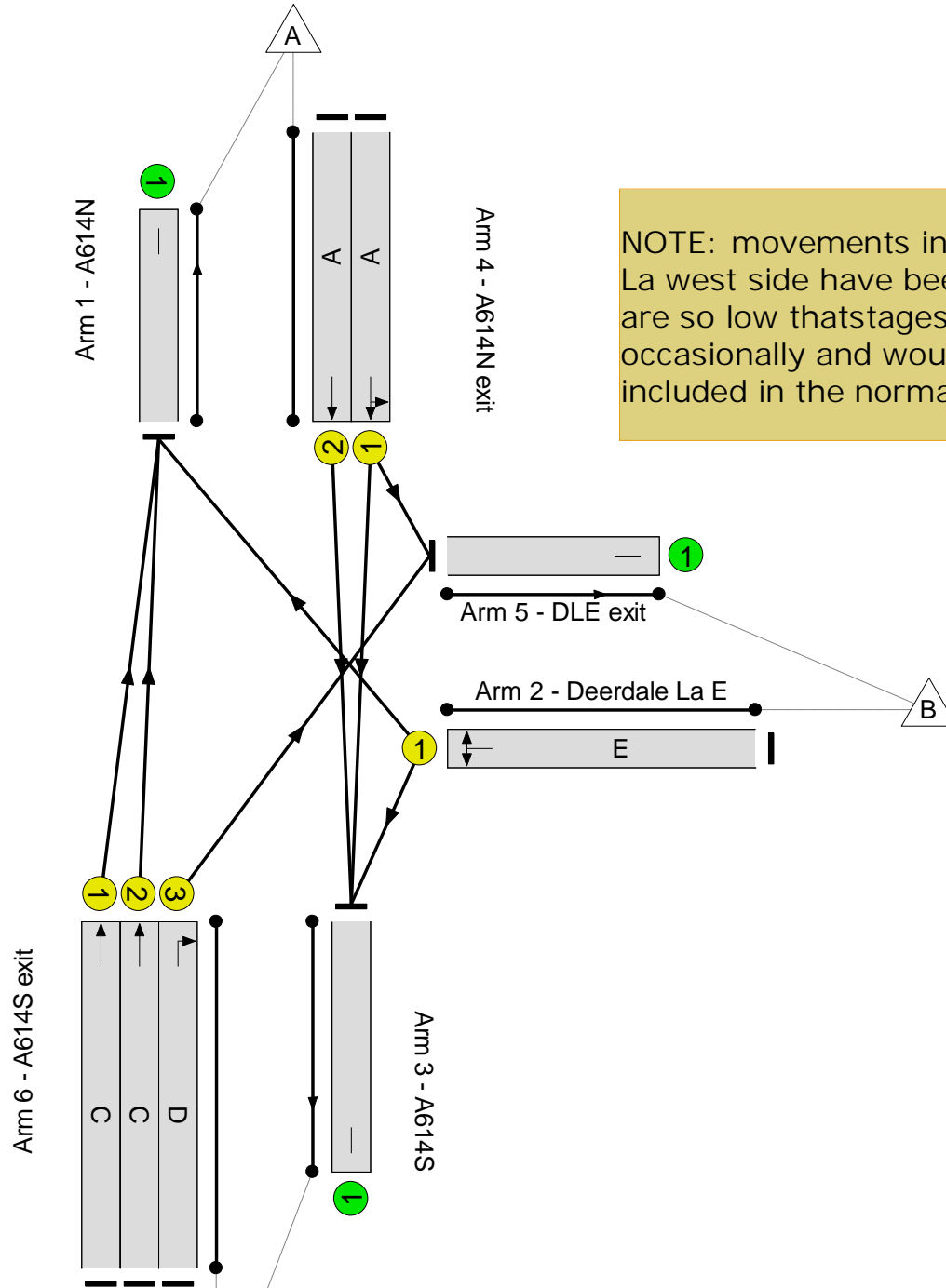


Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

A614/ Deerdale Lane  
PRC: 161.7 %  
Total Traffic Delay: 6.3 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	34.4%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	34.4%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	334	1900	971	34.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	333	1900	971	34.3%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	115	1800	340	33.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	304	1900	1267	24.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	303	1900	1267	23.9%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	52	1800	160	32.5%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	665	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	110	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%

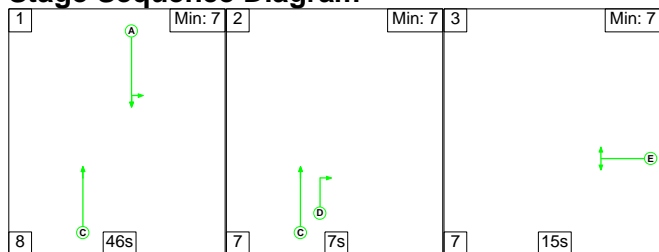
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	5.0	1.3	0.0	6.3	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	5.0	1.3	0.0	6.3	-	-	-	-
1/1	334	334	-	-	-	1.2	0.3	-	1.5	15.9	4.9	0.3	5.2
1/2	333	333	-	-	-	1.2	0.3	-	1.5	15.9	4.9	0.3	5.2
2/1	115	115	-	-	-	1.0	0.3	-	1.3	39.6	2.5	0.3	2.7
3/1	304	304	-	-	-	0.5	0.2	-	0.7	7.8	3.0	0.2	3.1
3/2	303	303	-	-	-	0.5	0.2	-	0.7	7.8	2.9	0.2	3.1
3/3	52	52	-	-	-	0.6	0.2	-	0.8	55.1	1.2	0.2	1.5
4/1	665	665	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	110	110	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		161.7	Total Delay for Signalled Lanes (pcuHr):		6.32	Cycle Time (s): 90				
			PRC Over All Lanes (%):		161.7	Total Delay Over All Lanes(pcuHr):		6.32					

Full Input Data And Results

Scenario 8: 'op2037' (FG8: 'op2037', Plan 1: 'normal')

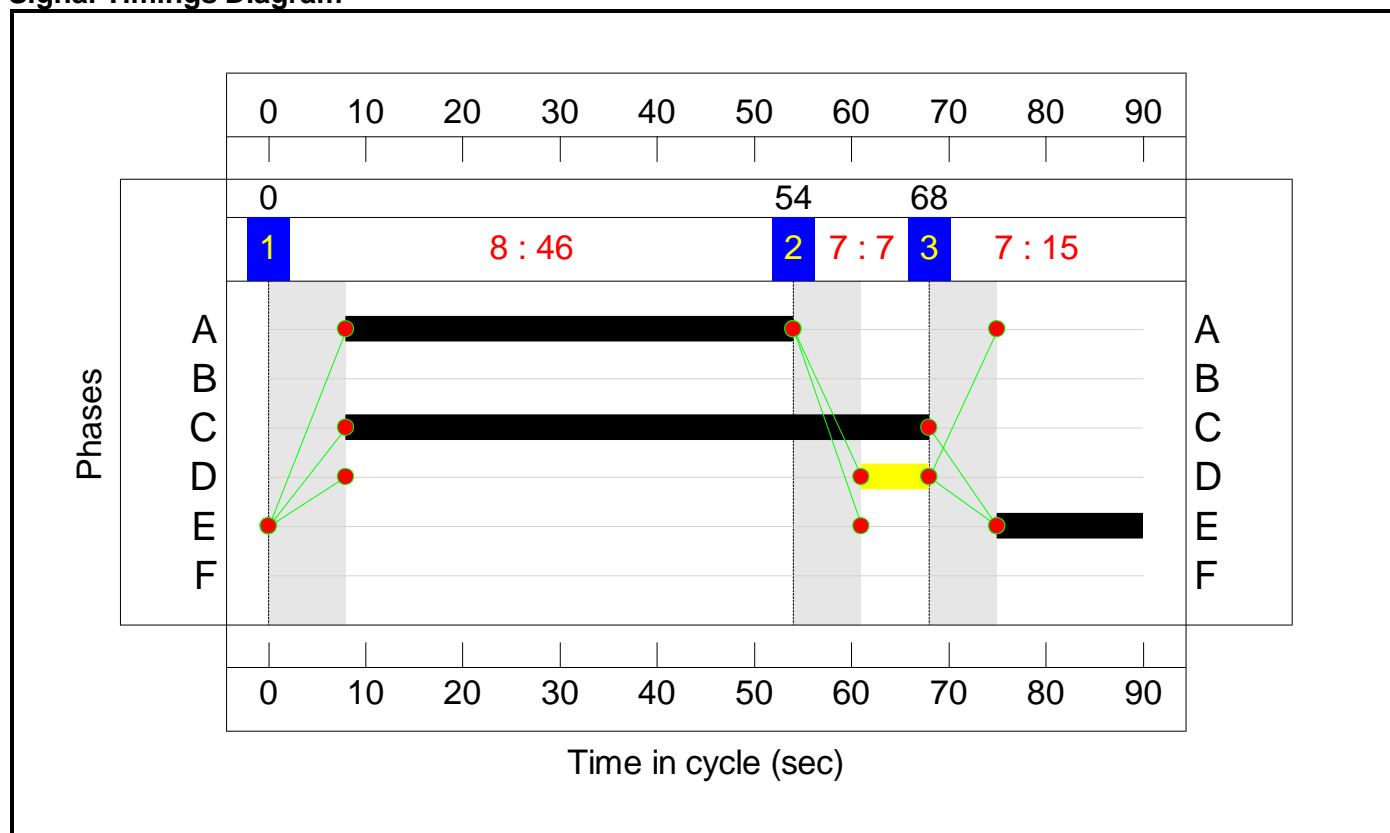
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

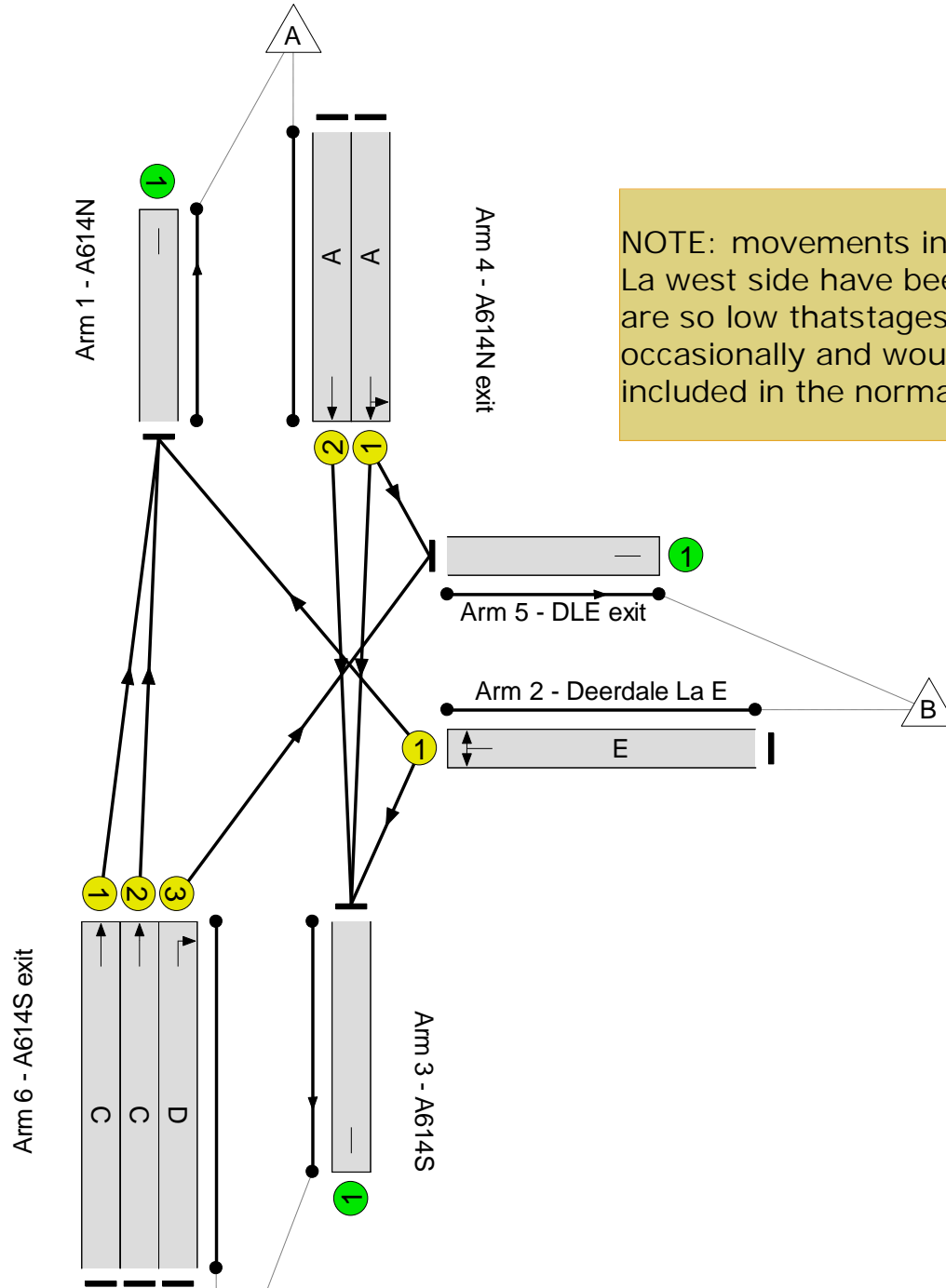
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 2518.2 %  
Total Traffic Delay: 0.5 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.4%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.4%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	32	1900	992	3.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	34	1900	992	3.4%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	11	1800	320	3.4%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	30	1900	1288	2.3%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	29	1900	1288	2.3%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	65	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	11	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	65	Inf	Inf	0.0%

Full Input Data And Results

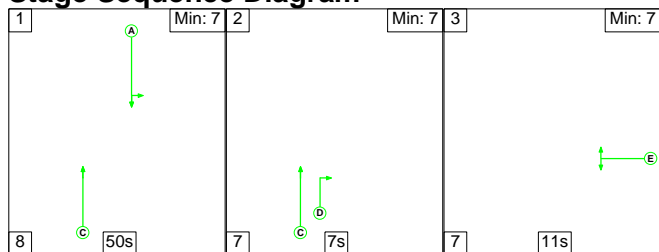
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	32	32	-	-	-	0.1	0.0	-	0.1	12.4	0.4	0.0	0.4
1/2	34	34	-	-	-	0.1	0.0	-	0.1	12.4	0.4	0.0	0.4
2/1	11	11	-	-	-	0.1	0.0	-	0.1	36.7	0.2	0.0	0.2
3/1	30	30	-	-	-	0.0	0.0	-	0.1	6.3	0.2	0.0	0.3
3/2	29	29	-	-	-	0.0	0.0	-	0.1	6.3	0.2	0.0	0.2
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	65	65	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	11	11	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	65	65	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2518.2		PRC Over All Lanes (%): 2518.2		Total Delay for Signalled Lanes (pcuHr): 0.51		Total Delay Over All Lanes(pcuHr): 0.51		Cycle Time (s): 90		



Full Input Data And Results

Scenario 9: 'am2037 final' (FG9: 'am2037 final', Plan 1: 'normal')

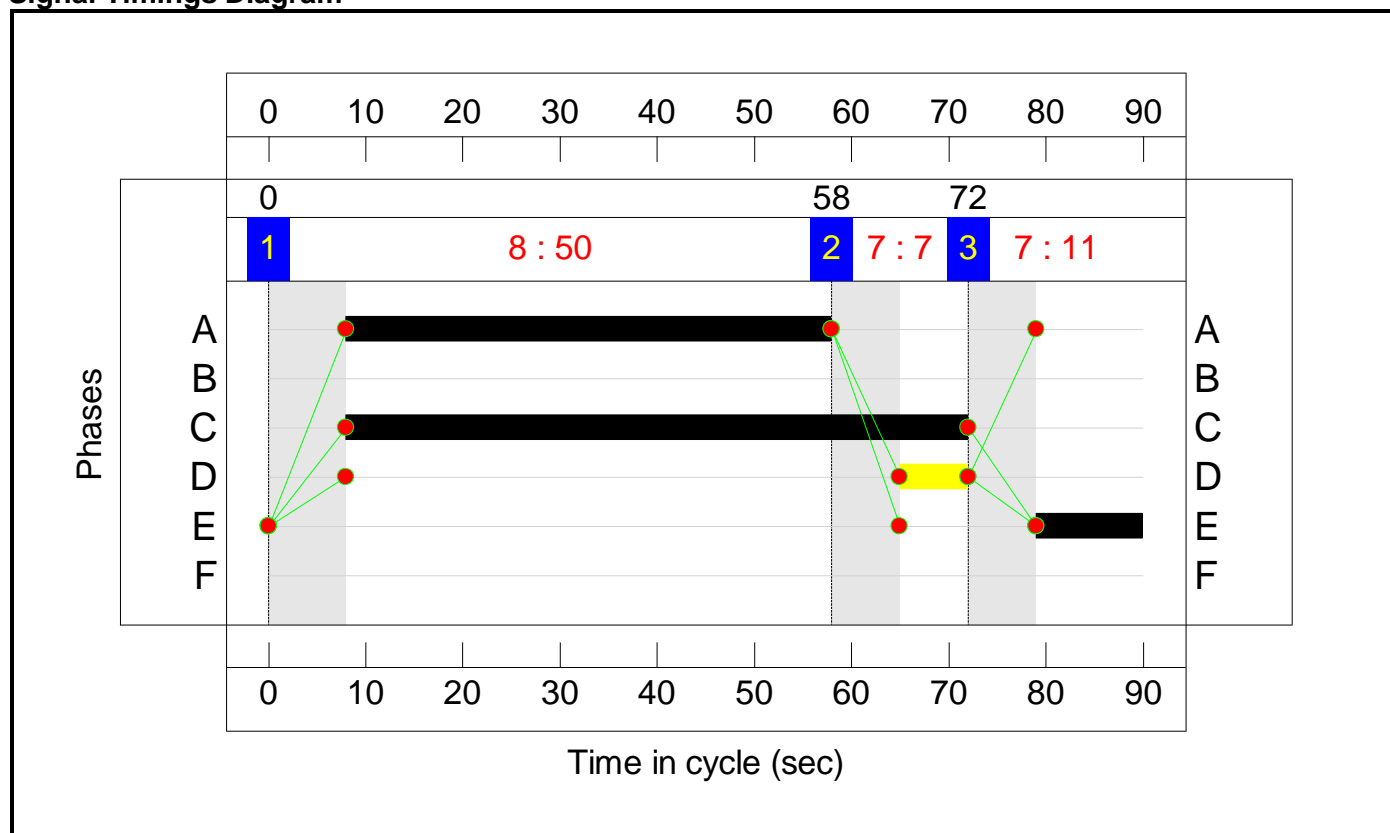
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	50	7	11
Change Point	0	58	72

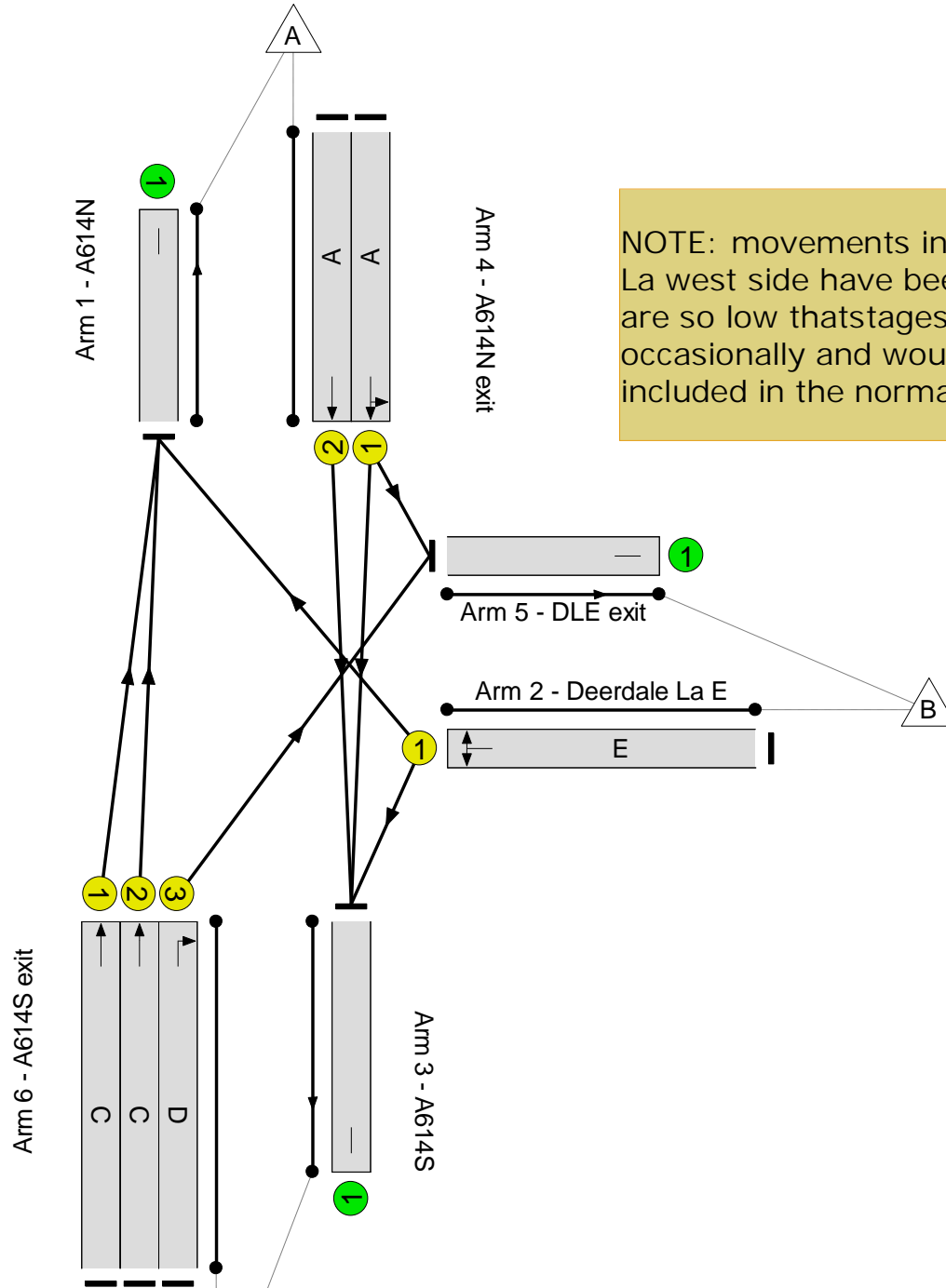
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 52.1 %  
Total Traffic Delay: 11.1 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>59.2%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>59.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	50	-	637	1900	1077	59.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	50	-	637	1900	1077	59.2%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	11	-	137	1800	240	57.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	64	-	505	1900	1372	36.8%
3/2	A614S Ahead	U	N/A	N/A	C		1	64	-	504	1900	1372	36.7%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	74	1800	160	46.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1072	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	178	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1244	Inf	Inf	0.0%

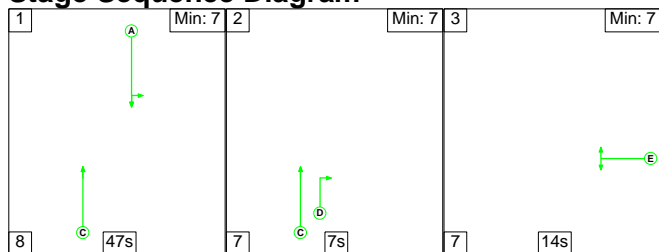
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	8.0	3.1	0.0	11.1	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	8.0	3.1	0.0	11.1	-	-	-	-
1/1	637	637	-	-	-	2.2	0.7	-	3.0	16.8	10.3	0.7	11.0
1/2	637	637	-	-	-	2.2	0.7	-	3.0	16.8	10.3	0.7	11.0
2/1	137	137	-	-	-	1.4	0.7	-	2.0	53.9	3.2	0.7	3.9
3/1	505	505	-	-	-	0.7	0.3	-	1.0	6.8	4.8	0.3	5.1
3/2	504	504	-	-	-	0.7	0.3	-	1.0	6.8	4.8	0.3	5.1
3/3	74	74	-	-	-	0.8	0.4	-	1.2	59.7	1.7	0.4	2.2
4/1	1072	1072	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	178	178	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1244	1244	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		52.1	Total Delay for Signalled Lanes (pcuHr):		11.13	Cycle Time (s): 90				
			PRC Over All Lanes (%):		52.1	Total Delay Over All Lanes(pcuHr):		11.13					

Full Input Data And Results

Scenario 10: 'pm2037 final' (FG10: 'pm2037 final', Plan 1: 'normal')

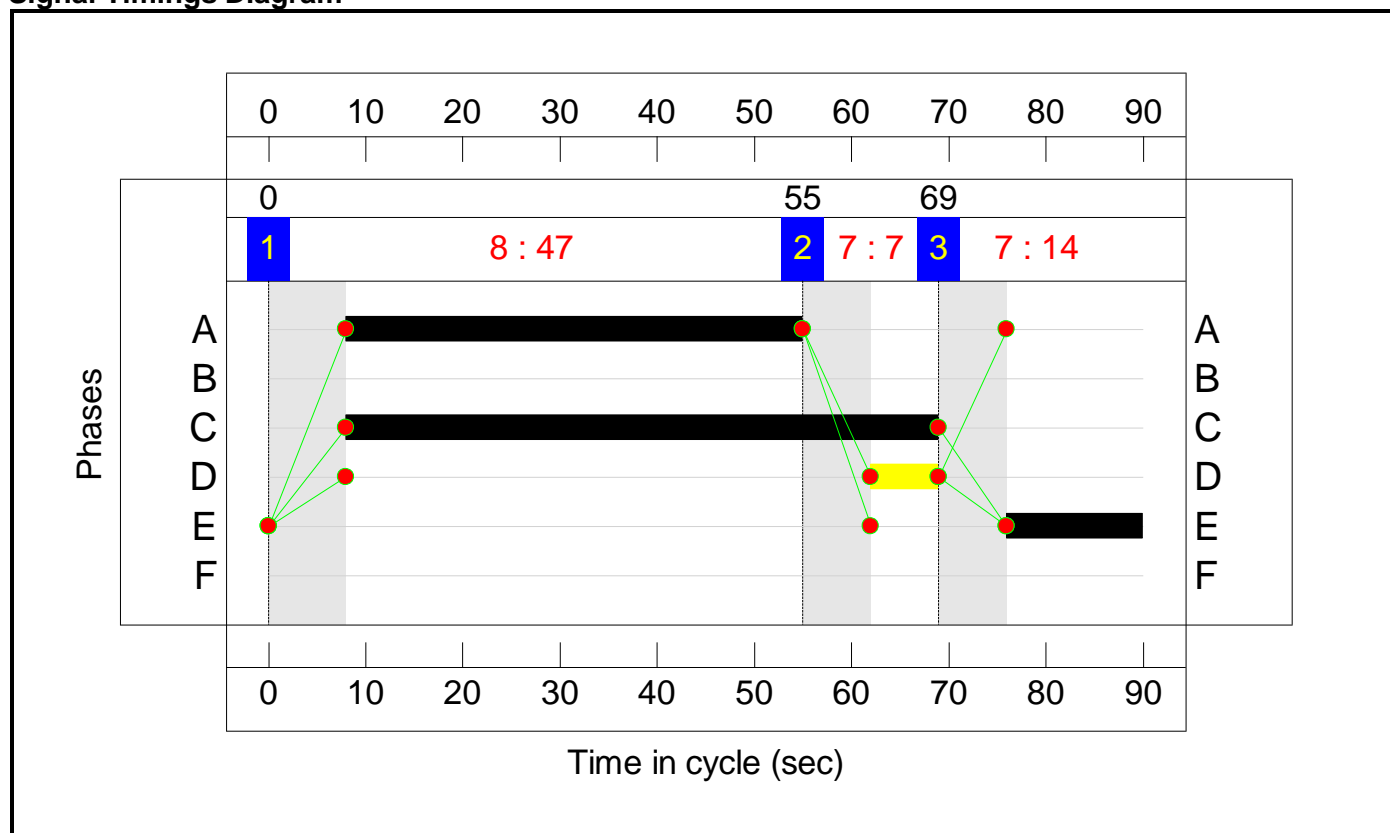
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	47	7	14
Change Point	0	55	69

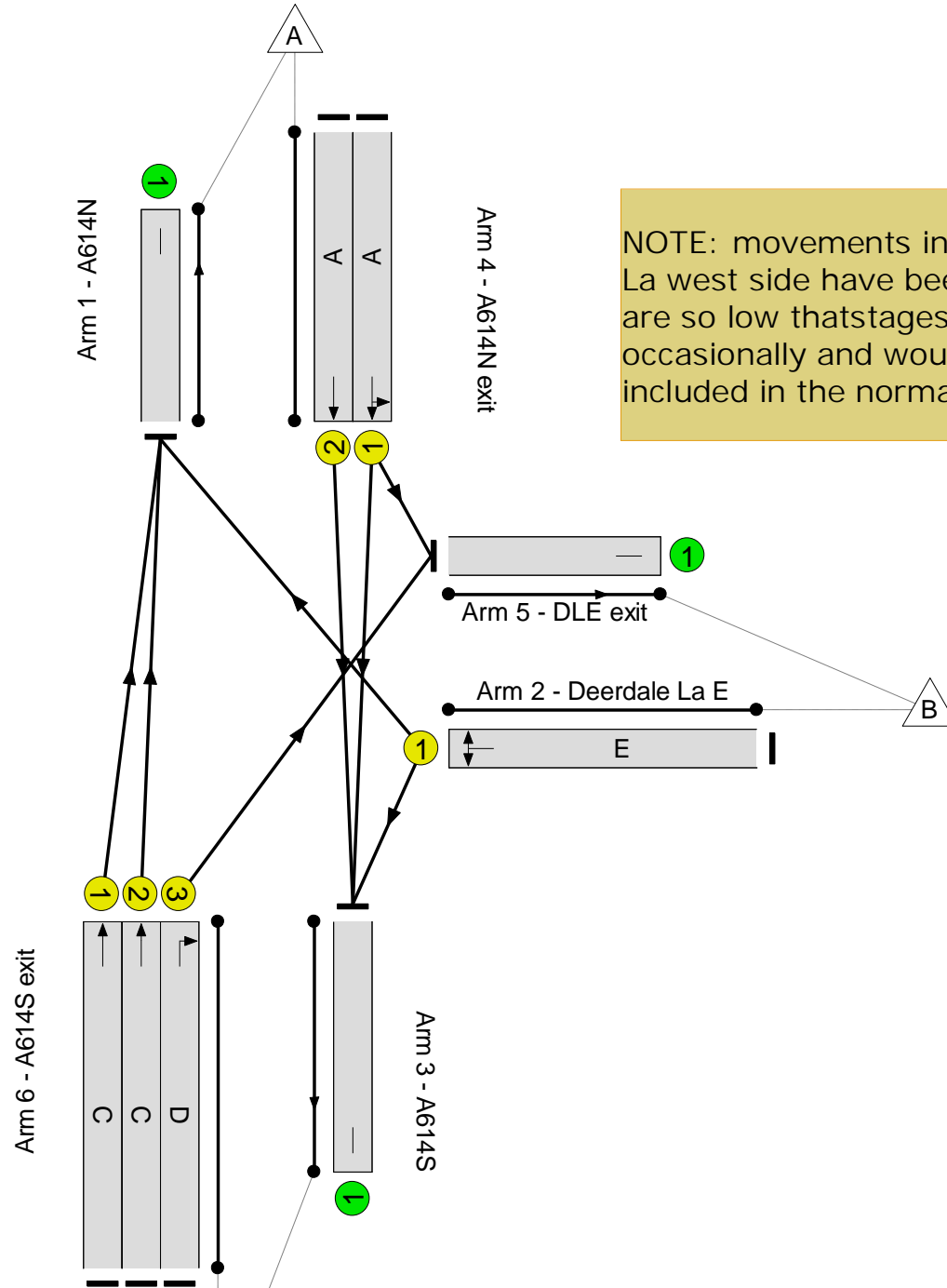
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**A614/ Deerdale Lane**  
 PRC: 64.3 %  
 Total Traffic Delay: 10.9 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	54.8%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	54.8%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	47	-	554	1900	1013	54.7%
1/2	A614N Ahead	U	N/A	N/A	A		1	47	-	555	1900	1013	54.8%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	14	-	161	1800	300	53.7%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	544	1900	1309	41.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	543	1900	1309	41.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	50	1800	160	31.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1166	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	121	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1120	Inf	Inf	0.0%

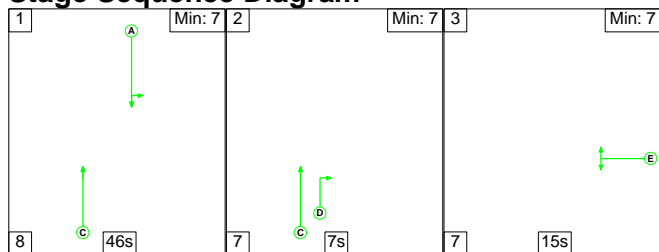
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	8.2	2.7	0.0	10.9	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	8.2	2.7	0.0	10.9	-	-	-	-
1/1	554	554	-	-	-	2.1	0.6	-	2.7	17.7	9.1	0.6	9.7
1/2	555	555	-	-	-	2.1	0.6	-	2.7	17.8	9.1	0.6	9.7
2/1	161	161	-	-	-	1.5	0.6	-	2.1	47.2	3.7	0.6	4.2
3/1	544	544	-	-	-	0.9	0.4	-	1.3	8.5	5.9	0.4	6.2
3/2	543	543	-	-	-	0.9	0.4	-	1.3	8.4	5.9	0.4	6.2
3/3	50	50	-	-	-	0.5	0.2	-	0.8	54.8	1.2	0.2	1.4
4/1	1166	1166	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	121	121	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1120	1120	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		64.3	Total Delay for Signalled Lanes (pcuHr):		10.89	Cycle Time (s): 90				
			PRC Over All Lanes (%):		64.3	Total Delay Over All Lanes(pcuHr):		10.89					

Full Input Data And Results

Scenario 11: 'ip2037 final' (FG11: 'ip2037 final', Plan 1: 'normal')

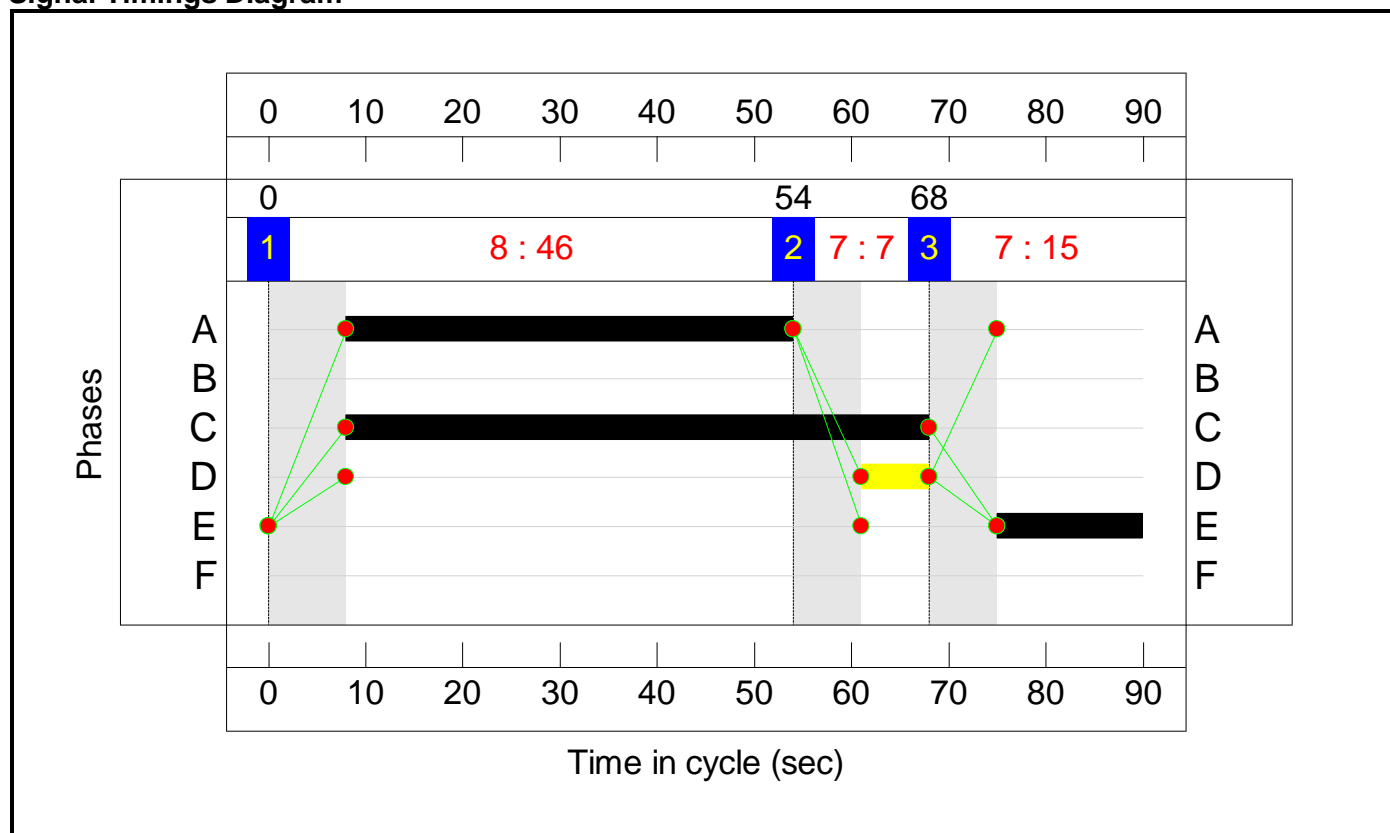
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

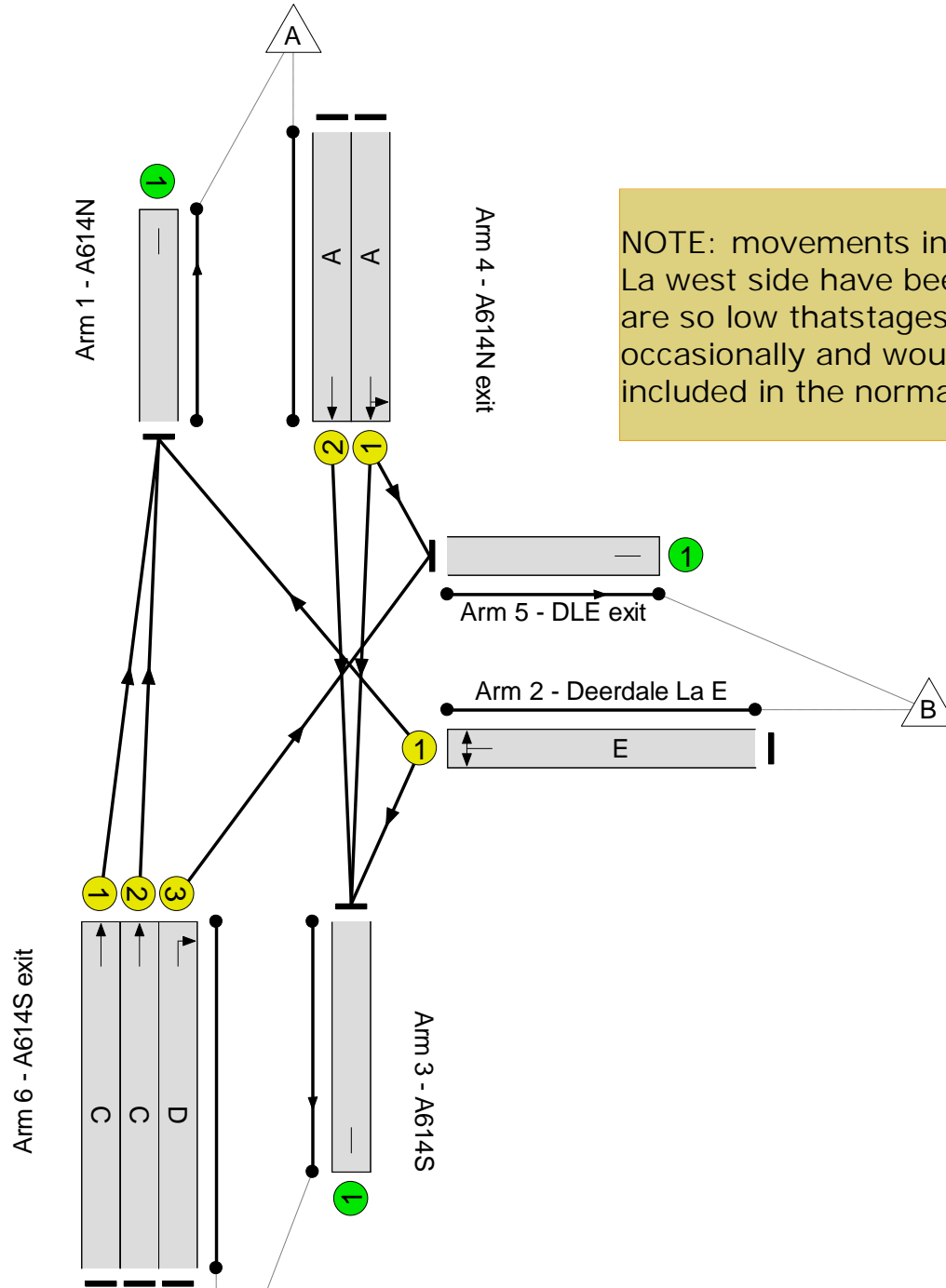
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 136.1 %  
Total Traffic Delay: 7.0 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

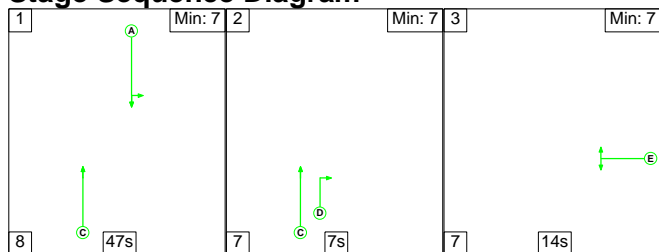
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>38.1%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>38.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	378	1900	992	38.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	378	1900	992	38.1%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	122	1800	320	38.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	344	1900	1288	26.7%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	343	1900	1288	26.6%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	53	1800	160	33.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	751	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	117	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	750	Inf	Inf	0.0%



Full Input Data And Results

Scenario 12: 'op2037 final' (FG12: 'op2037 final', Plan 1: 'normal')

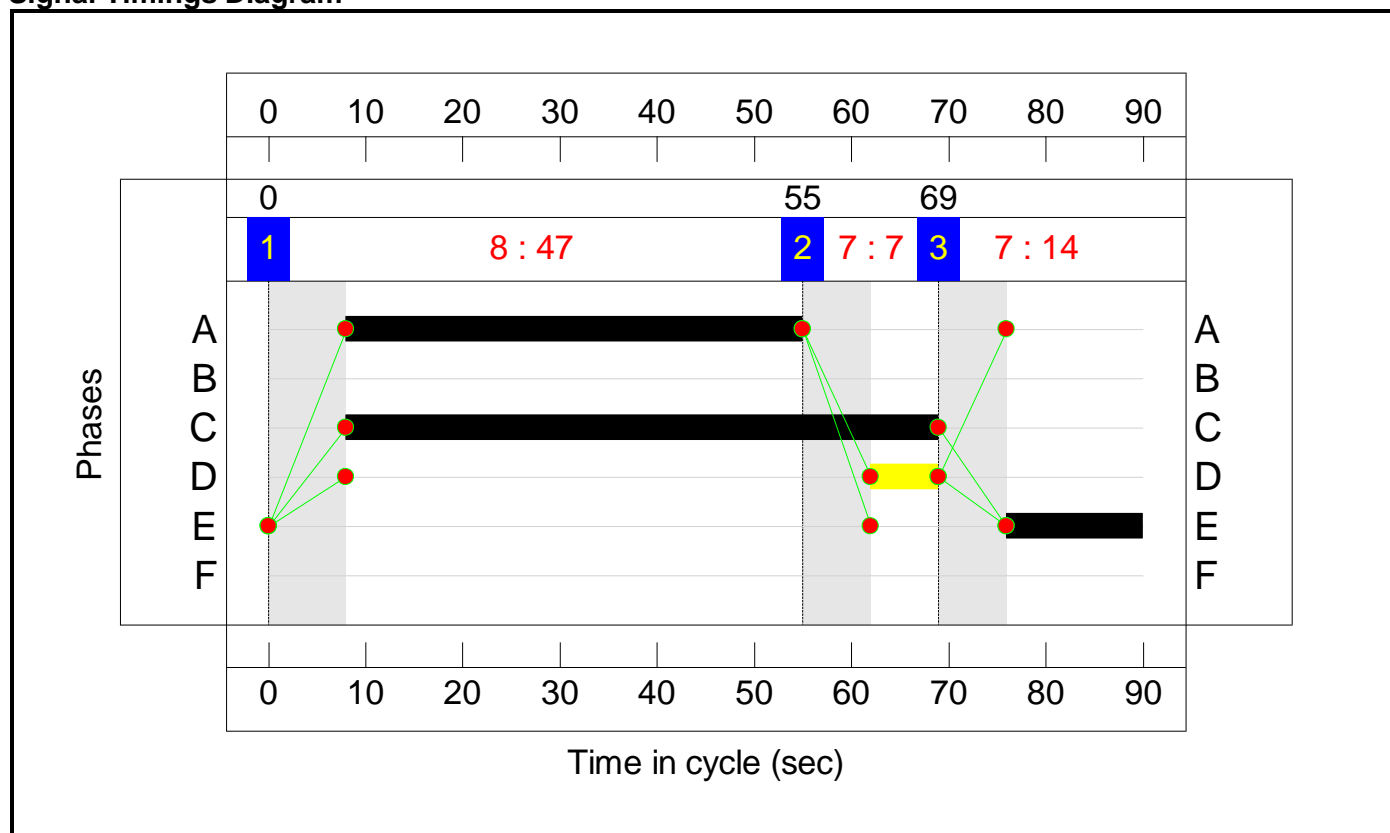
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	47	7	14
Change Point	0	55	69

Signal Timings Diagram

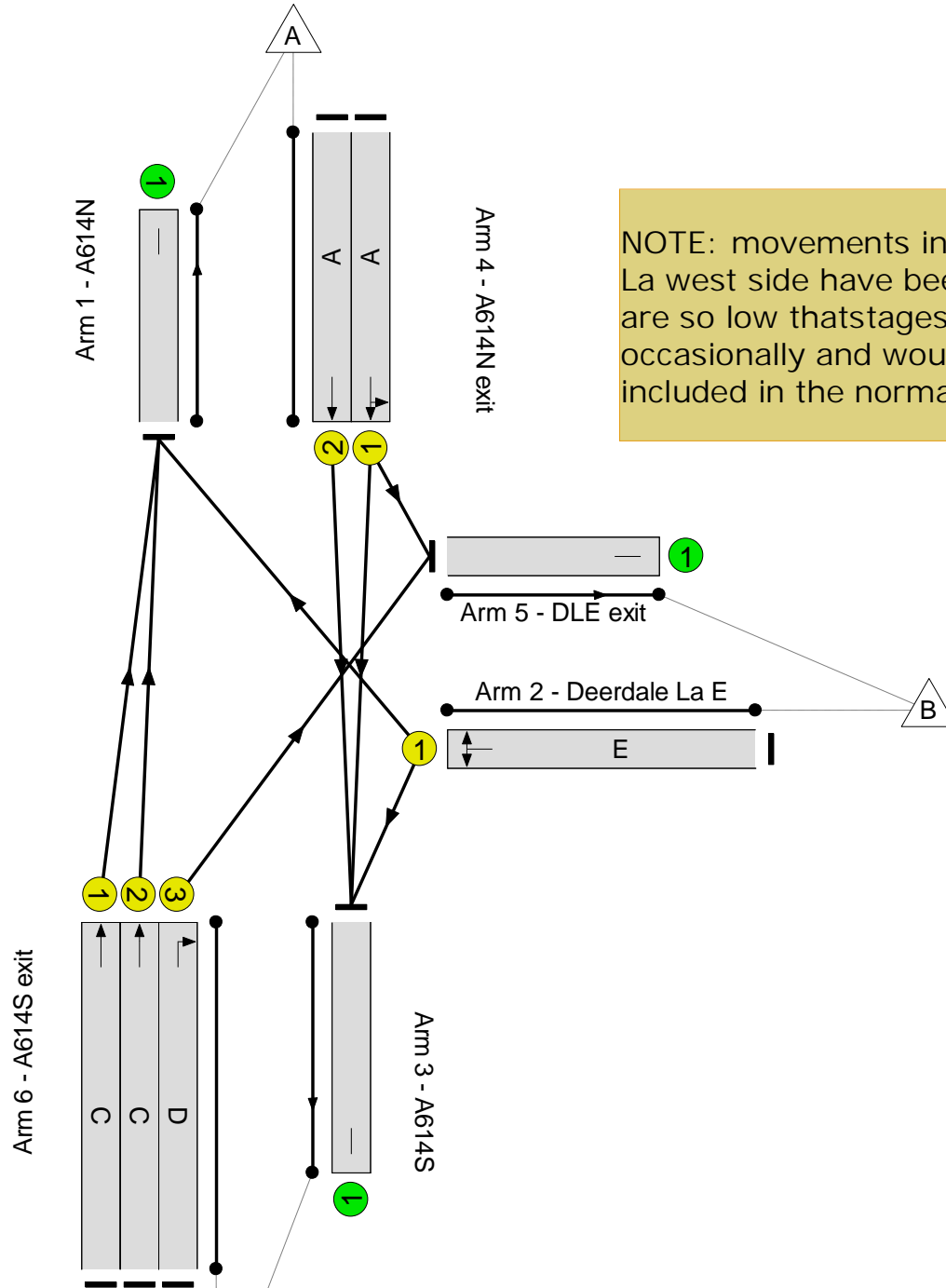




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 2300.0 %  
Total Traffic Delay: 0.5 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>3.8%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>3.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	47	-	36	1900	1013	3.6%
1/2	A614N Ahead	U	N/A	N/A	A		1	47	-	38	1900	1013	3.8%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	14	-	11	1800	300	3.7%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	34	1900	1309	2.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	33	1900	1309	2.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	11	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%

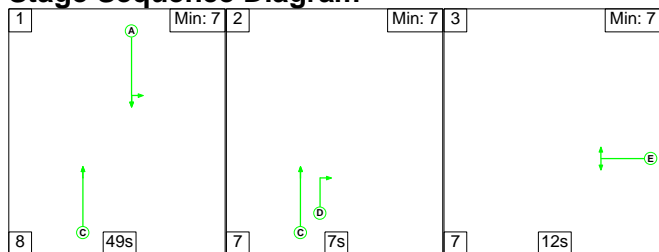
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	36	36	-	-	-	0.1	0.0	-	0.1	11.9	0.4	0.0	0.4
1/2	38	38	-	-	-	0.1	0.0	-	0.1	11.9	0.4	0.0	0.5
2/1	11	11	-	-	-	0.1	0.0	-	0.1	37.9	0.2	0.0	0.2
3/1	34	34	-	-	-	0.0	0.0	-	0.1	5.9	0.3	0.0	0.3
3/2	33	33	-	-	-	0.0	0.0	-	0.1	5.9	0.3	0.0	0.3
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	11	11	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2300.0		PRC Over All Lanes (%): 2300.0		Total Delay for Signalled Lanes (pcuHr): 0.54		Total Delay Over All Lanes(pcuHr): 0.54		Cycle Time (s): 90		

Full Input Data And Results

Scenario 13: 'am2023LG' (FG13: 'am2023LG', Plan 1: 'normal')

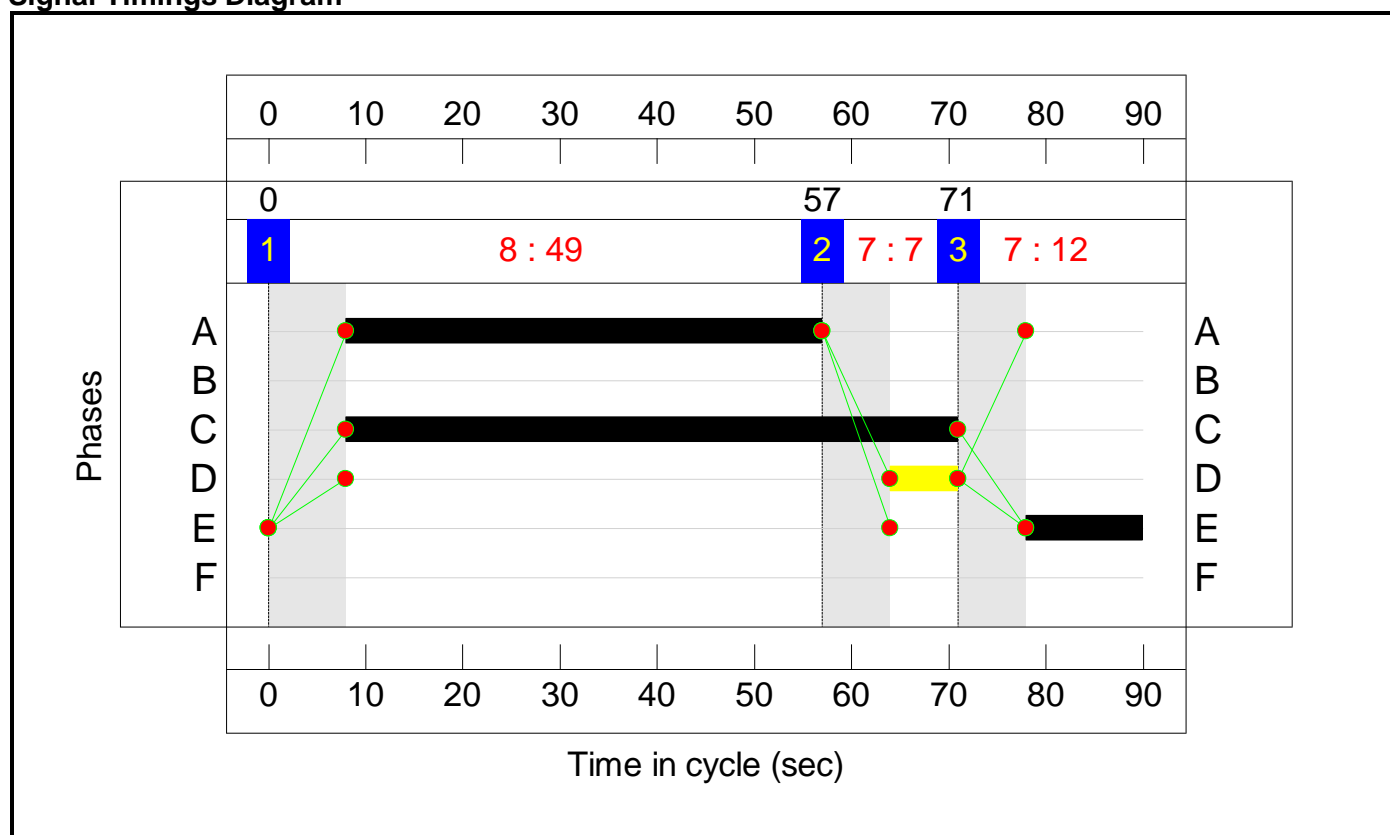
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	49	7	12
Change Point	0	57	71

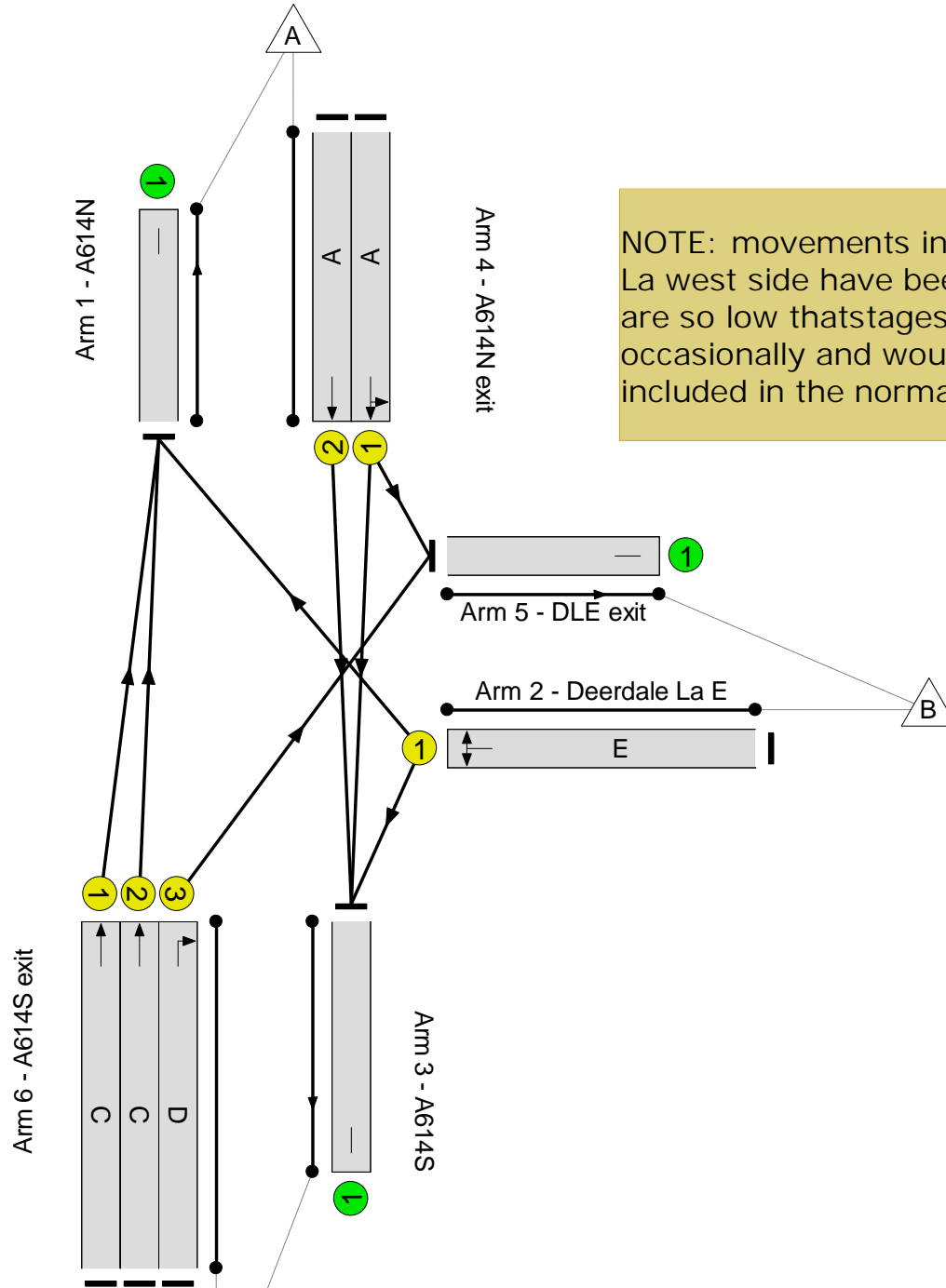
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 87.0 %  
Total Traffic Delay: 8.6 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>48.1%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>48.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	49	-	508	1900	1056	48.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	49	-	508	1900	1056	48.1%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	12	-	121	1800	260	46.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	63	-	414	1900	1351	30.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	63	-	414	1900	1351	30.6%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	67	1800	160	41.9%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	882	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	153	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	997	Inf	Inf	0.0%



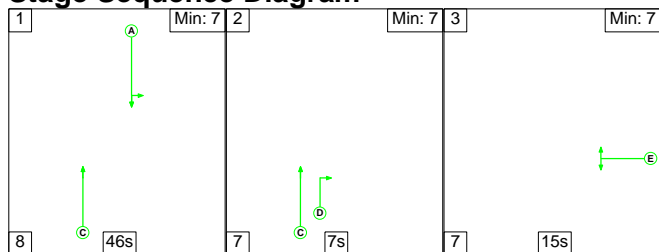
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.4	2.2	0.0	8.6	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.4	2.2	0.0	8.6	-	-	-	-
1/1	508	508	-	-	-	1.7	0.5	-	2.2	15.4	7.6	0.5	8.1
1/2	508	508	-	-	-	1.7	0.5	-	2.2	15.4	7.6	0.5	8.1
2/1	121	121	-	-	-	1.2	0.4	-	1.6	48.2	2.8	0.4	3.2
3/1	414	414	-	-	-	0.6	0.2	-	0.8	6.7	3.8	0.2	4.0
3/2	414	414	-	-	-	0.6	0.2	-	0.8	6.7	3.8	0.2	4.0
3/3	67	67	-	-	-	0.7	0.4	-	1.1	58.0	1.6	0.4	1.9
4/1	882	882	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	153	153	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	997	997	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		87.0	Total Delay for Signalled Lanes (pcuHr):		8.60	Cycle Time (s): 90				
			PRC Over All Lanes (%):		87.0	Total Delay Over All Lanes(pcuHr):		8.60					

Full Input Data And Results

Scenario 14: 'pm2023LG' (FG14: 'pm2023LG', Plan 1: 'normal')

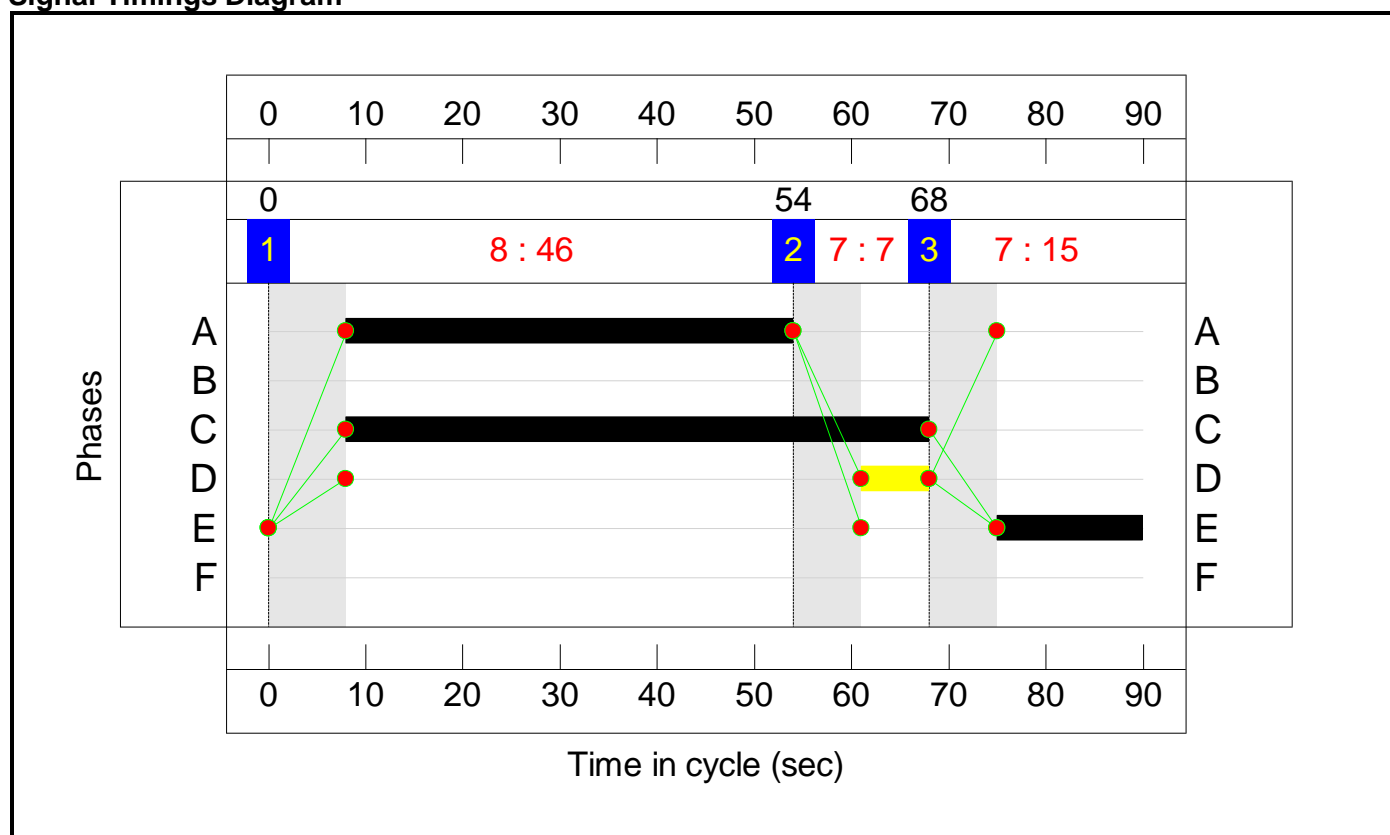
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

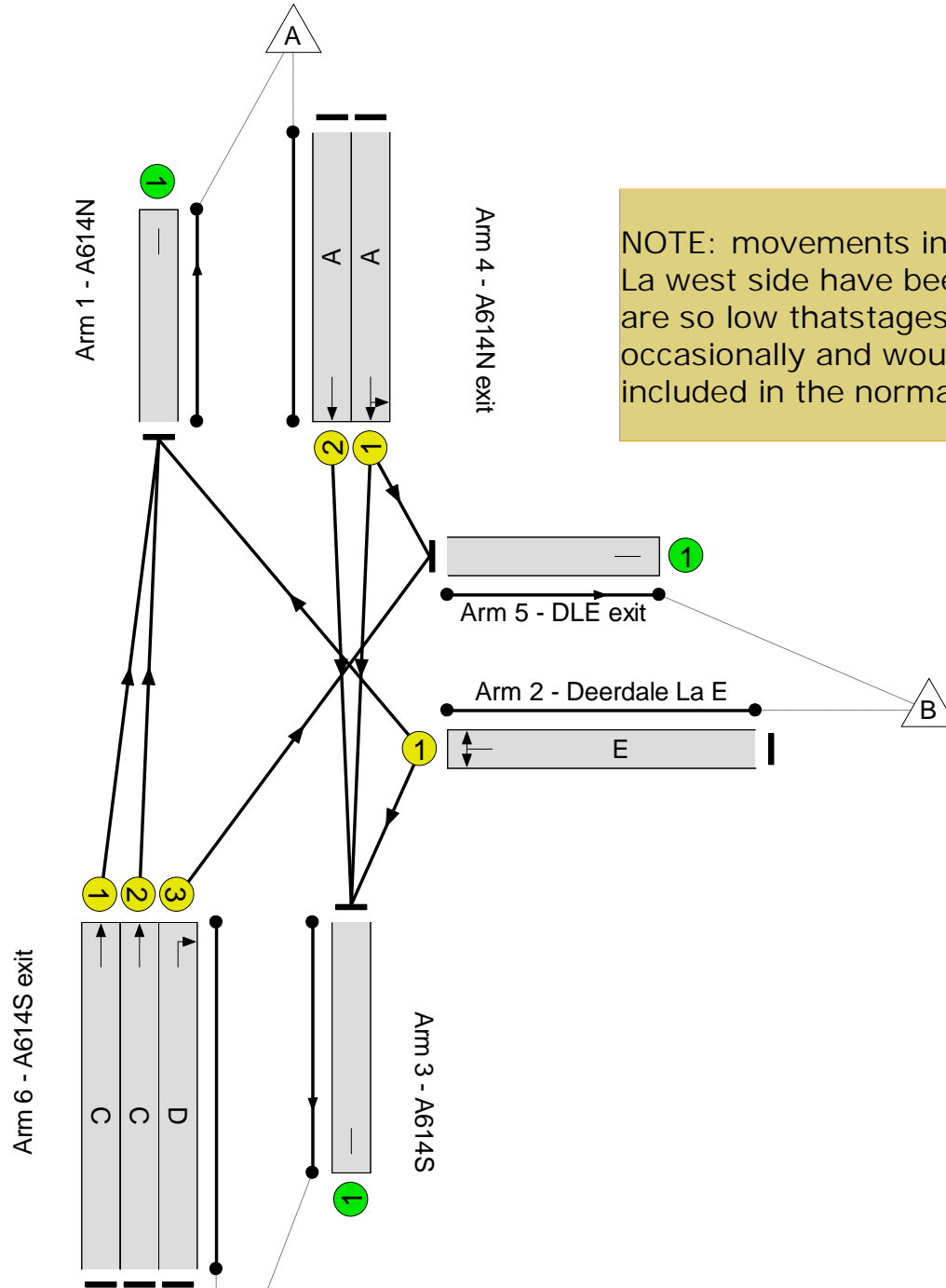
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 98.0 %  
Total Traffic Delay: 8.5 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	45.5%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	45.5%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	451	1900	992	45.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	450	1900	992	45.4%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	140	1800	320	43.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	432	1900	1288	33.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	431	1900	1288	33.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	45	1800	160	28.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	929	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	105	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	915	Inf	Inf	0.0%

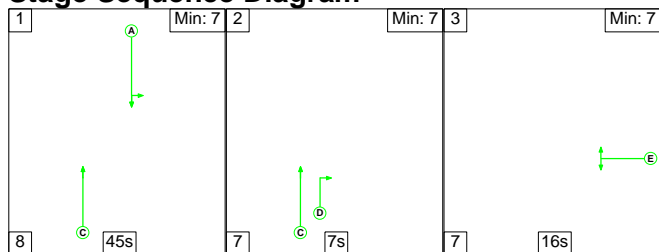
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.6	1.9	0.0	8.5	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.6	1.9	0.0	8.5	-	-	-	-
1/1	451	451	-	-	-	1.7	0.4	-	2.1	16.8	7.0	0.4	7.4
1/2	450	450	-	-	-	1.7	0.4	-	2.1	16.8	7.0	0.4	7.4
2/1	140	140	-	-	-	1.3	0.4	-	1.7	43.0	3.1	0.4	3.5
3/1	432	432	-	-	-	0.7	0.3	-	1.0	8.2	4.4	0.3	4.7
3/2	431	431	-	-	-	0.7	0.3	-	1.0	8.1	4.4	0.3	4.7
3/3	45	45	-	-	-	0.5	0.2	-	0.7	53.9	1.0	0.2	1.2
4/1	929	929	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	105	105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	915	915	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		98.0	Total Delay for Signalled Lanes (pcuHr):		8.50	Cycle Time (s): 90				
			PRC Over All Lanes (%):		98.0	Total Delay Over All Lanes(pcuHr):		8.50					

Full Input Data And Results

Scenario 15: 'ip2023LG' (FG15: 'ip2023LG', Plan 1: 'normal')

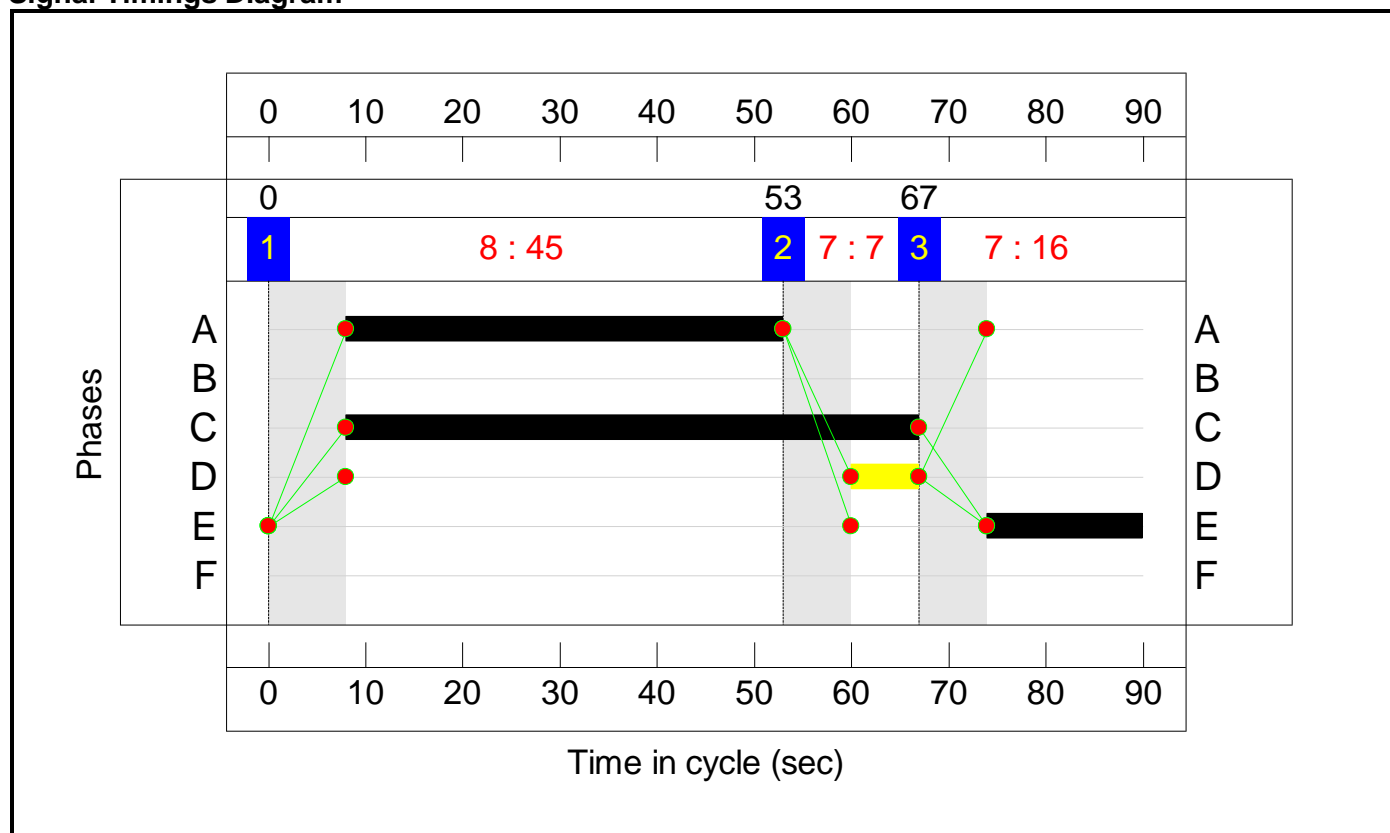
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

Signal Timings Diagram

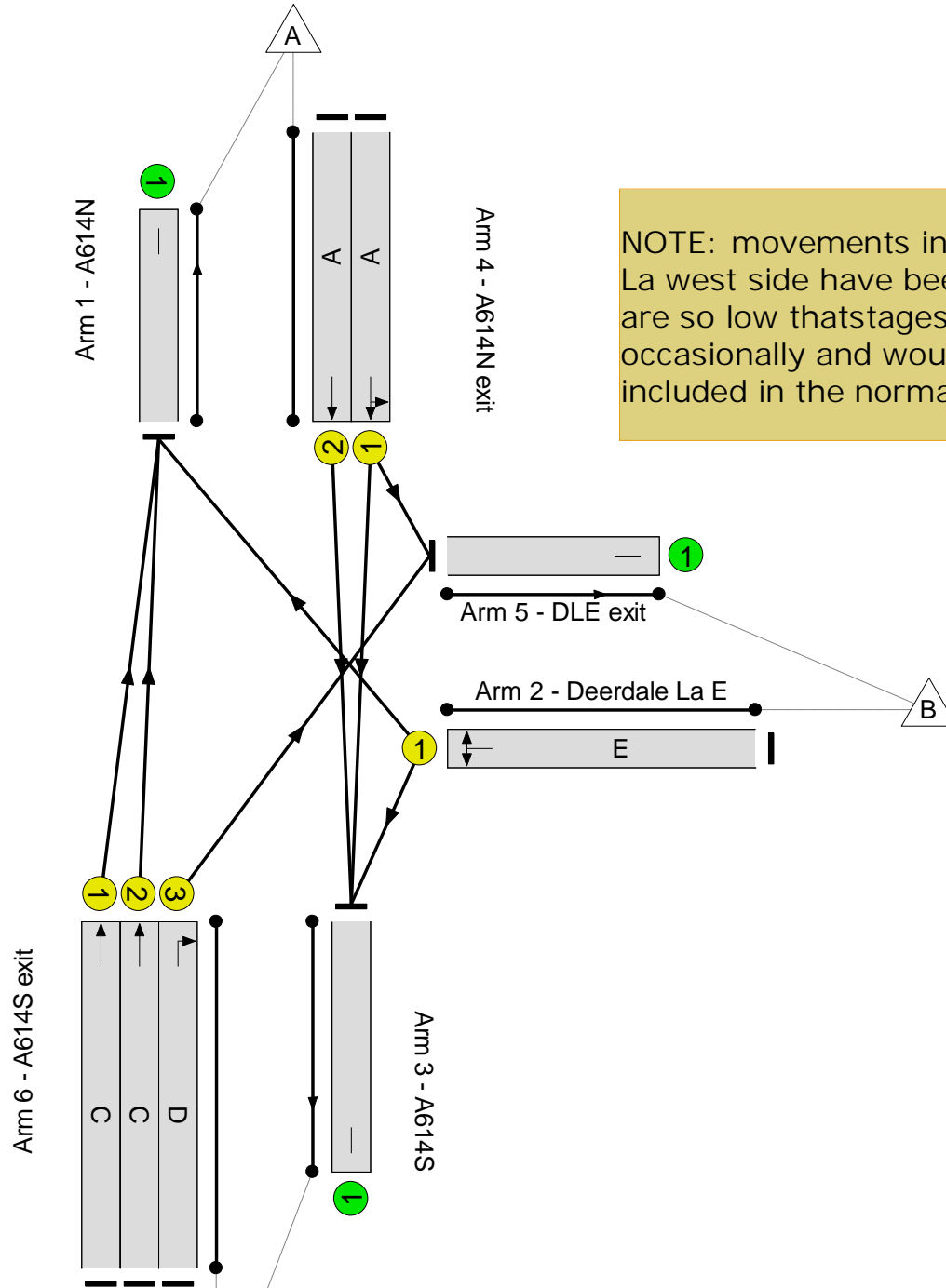


Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

A614/ Deerdale Lane  
PRC: 184.7 %  
Total Traffic Delay: 5.7 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	31.6%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	31.6%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	306	1900	971	31.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	307	1900	971	31.6%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	107	1800	340	31.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	279	1900	1267	22.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	279	1900	1267	22.0%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	48	1800	160	30.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	612	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	612	Inf	Inf	0.0%

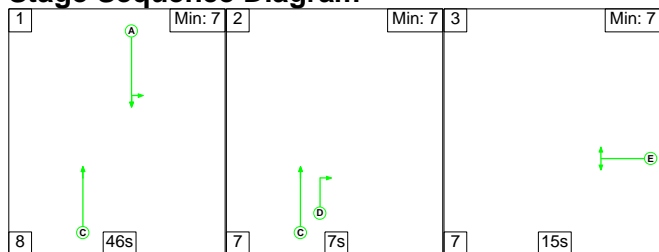
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	4.5	1.2	0.0	5.7	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	4.5	1.2	0.0	5.7	-	-	-	-
1/1	306	306	-	-	-	1.1	0.2	-	1.3	15.5	4.4	0.2	4.6
1/2	307	307	-	-	-	1.1	0.2	-	1.3	15.5	4.4	0.2	4.7
2/1	107	107	-	-	-	0.9	0.2	-	1.2	39.2	2.3	0.2	2.5
3/1	279	279	-	-	-	0.5	0.1	-	0.6	7.7	2.7	0.1	2.9
3/2	279	279	-	-	-	0.5	0.1	-	0.6	7.7	2.7	0.1	2.9
3/3	48	48	-	-	-	0.5	0.2	-	0.7	54.4	1.1	0.2	1.3
4/1	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		184.7	Total Delay for Signalled Lanes (pcuHr):		5.73	Cycle Time (s): 90				
			PRC Over All Lanes (%):		184.7	Total Delay Over All Lanes(pcuHr):		5.73					

Full Input Data And Results

Scenario 16: 'op2023LG' (FG16: 'op2023LG', Plan 1: 'normal')

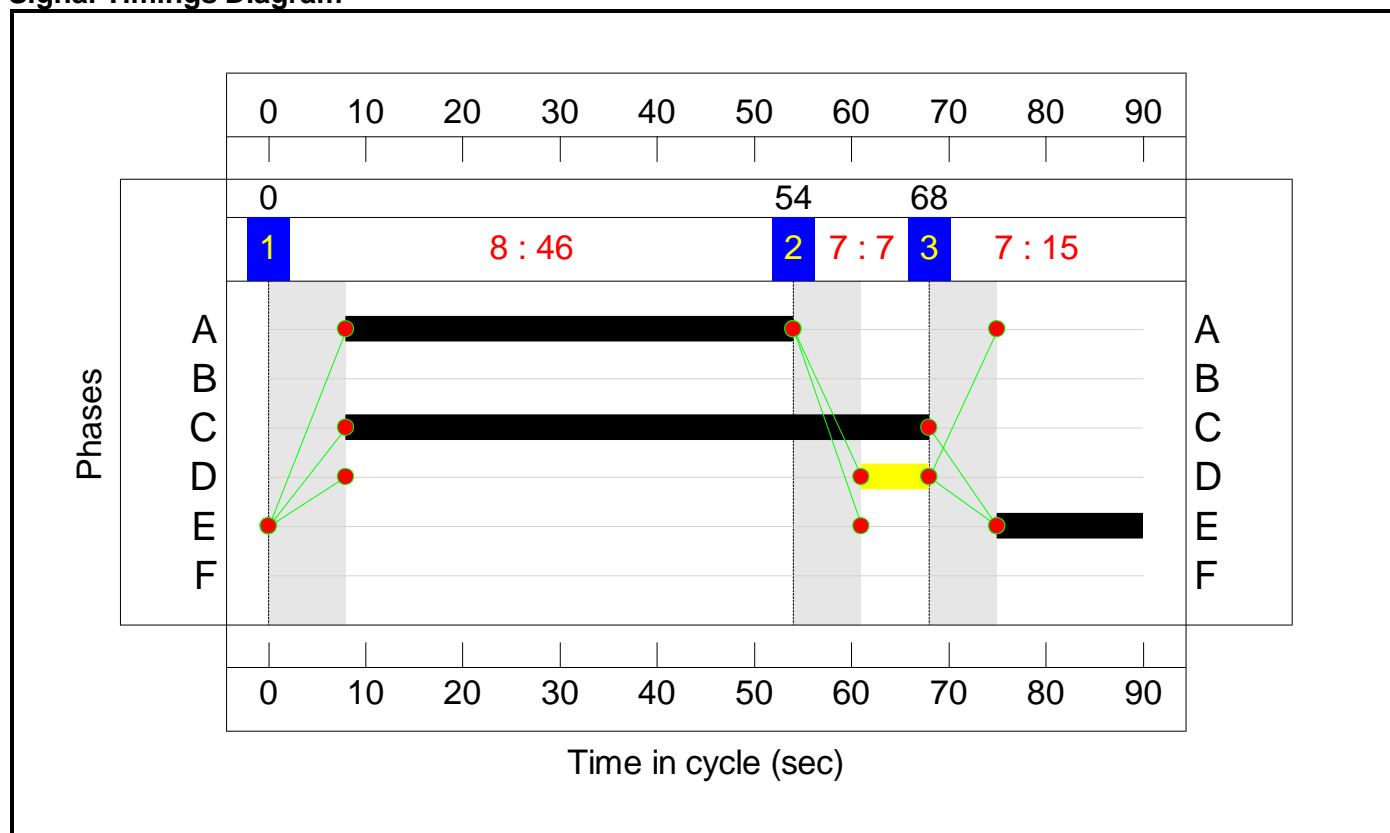
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

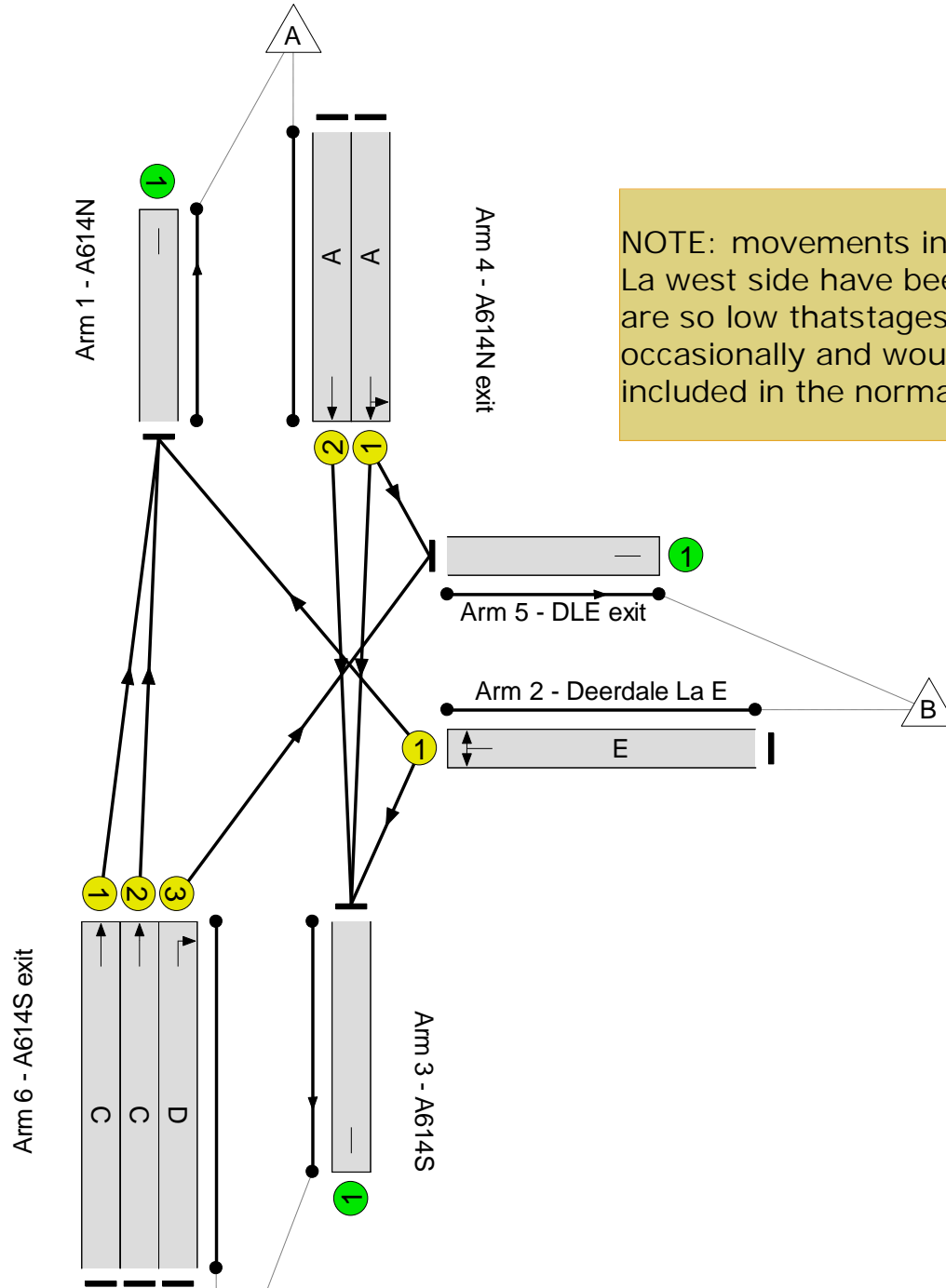
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 A614/ Deerdale Lane  
PRC: 2780.0 %  
Total Traffic Delay: 0.5 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.1%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.1%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	29	1900	992	2.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	31	1900	992	3.1%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	10	1800	320	3.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	27	1900	1288	2.1%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	27	1900	1288	2.1%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	59	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	10	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	60	Inf	Inf	0.0%

Full Input Data And Results

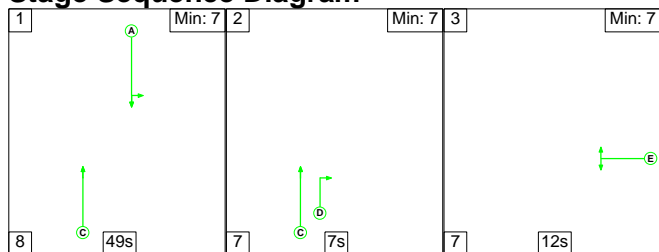
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	29	29	-	-	-	0.1	0.0	-	0.1	12.4	0.3	0.0	0.4
1/2	31	31	-	-	-	0.1	0.0	-	0.1	12.4	0.4	0.0	0.4
2/1	10	10	-	-	-	0.1	0.0	-	0.1	36.6	0.2	0.0	0.2
3/1	27	27	-	-	-	0.0	0.0	-	0.0	6.3	0.2	0.0	0.2
3/2	27	27	-	-	-	0.0	0.0	-	0.0	6.3	0.2	0.0	0.2
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	59	59	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	10	10	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	60	60	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2780.0		PRC Over All Lanes (%): 2780.0		Total Delay for Signalled Lanes (pcuHr): 0.47		Total Delay Over All Lanes(pcuHr): 0.47		Cycle Time (s): 90		



Full Input Data And Results

Scenario 17: 'am2037LG' (FG17: 'am2037LG', Plan 1: 'normal')

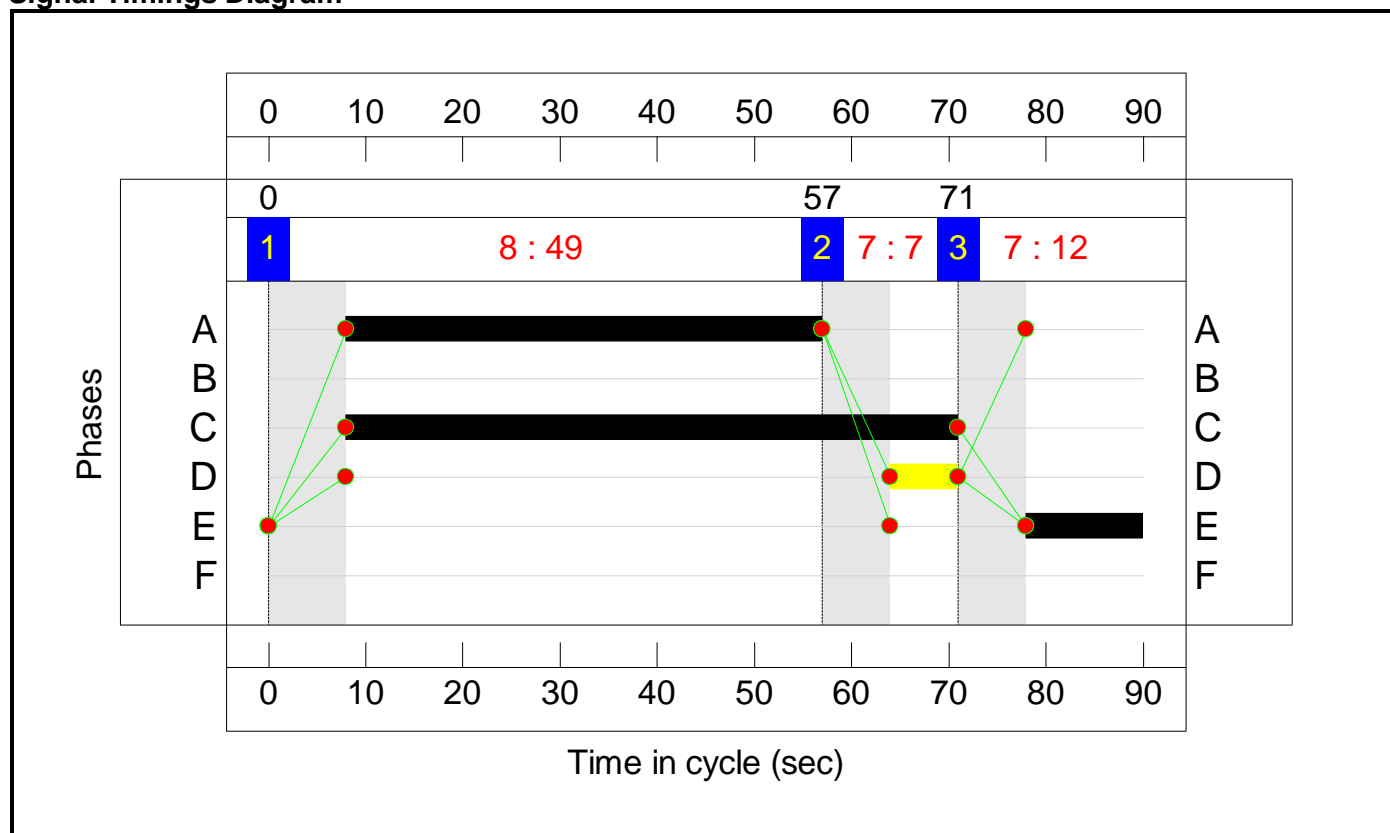
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	49	7	12
Change Point	0	57	71

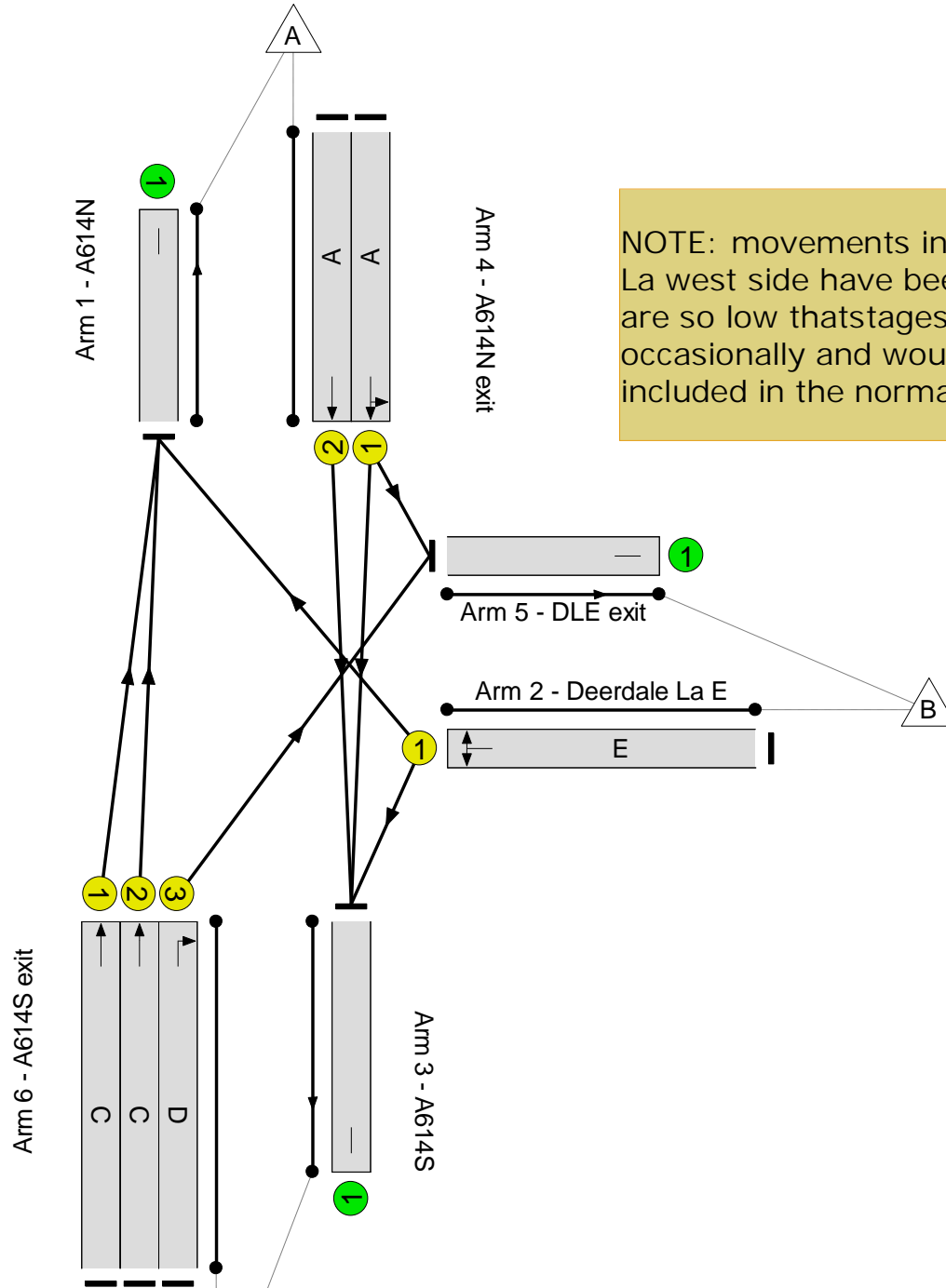
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 89.6 %  
Total Traffic Delay: 8.4 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	47.5%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	47.5%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	49	-	501	1900	1056	47.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	49	-	501	1900	1056	47.5%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	12	-	120	1800	260	46.2%
3/1	A614S Ahead	U	N/A	N/A	C		1	63	-	409	1900	1351	30.3%
3/2	A614S Ahead	U	N/A	N/A	C		1	63	-	408	1900	1351	30.2%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	66	1800	160	41.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	871	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	150	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	984	Inf	Inf	0.0%

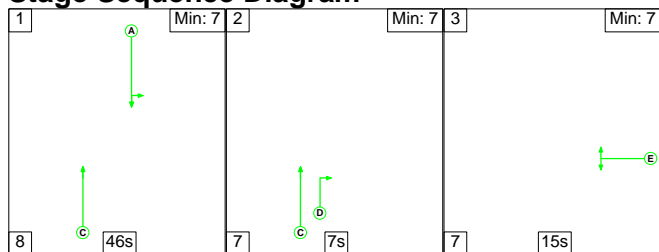
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.3	2.1	0.0	8.4	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.3	2.1	0.0	8.4	-	-	-	-
1/1	501	501	-	-	-	1.7	0.5	-	2.1	15.3	7.5	0.5	8.0
1/2	501	501	-	-	-	1.7	0.5	-	2.1	15.3	7.5	0.5	8.0
2/1	120	120	-	-	-	1.2	0.4	-	1.6	48.1	2.7	0.4	3.2
3/1	409	409	-	-	-	0.5	0.2	-	0.8	6.7	3.7	0.2	4.0
3/2	408	408	-	-	-	0.5	0.2	-	0.8	6.7	3.7	0.2	4.0
3/3	66	66	-	-	-	0.7	0.3	-	1.1	57.8	1.6	0.3	1.9
4/1	871	871	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	150	150	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	984	984	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		89.6	Total Delay for Signalled Lanes (pcuHr):		8.45	Cycle Time (s): 90				
			PRC Over All Lanes (%):		89.6	Total Delay Over All Lanes(pcuHr):		8.45					

Full Input Data And Results

Scenario 18: 'pm2037LG' (FG18: 'pm2037LG', Plan 1: 'normal')

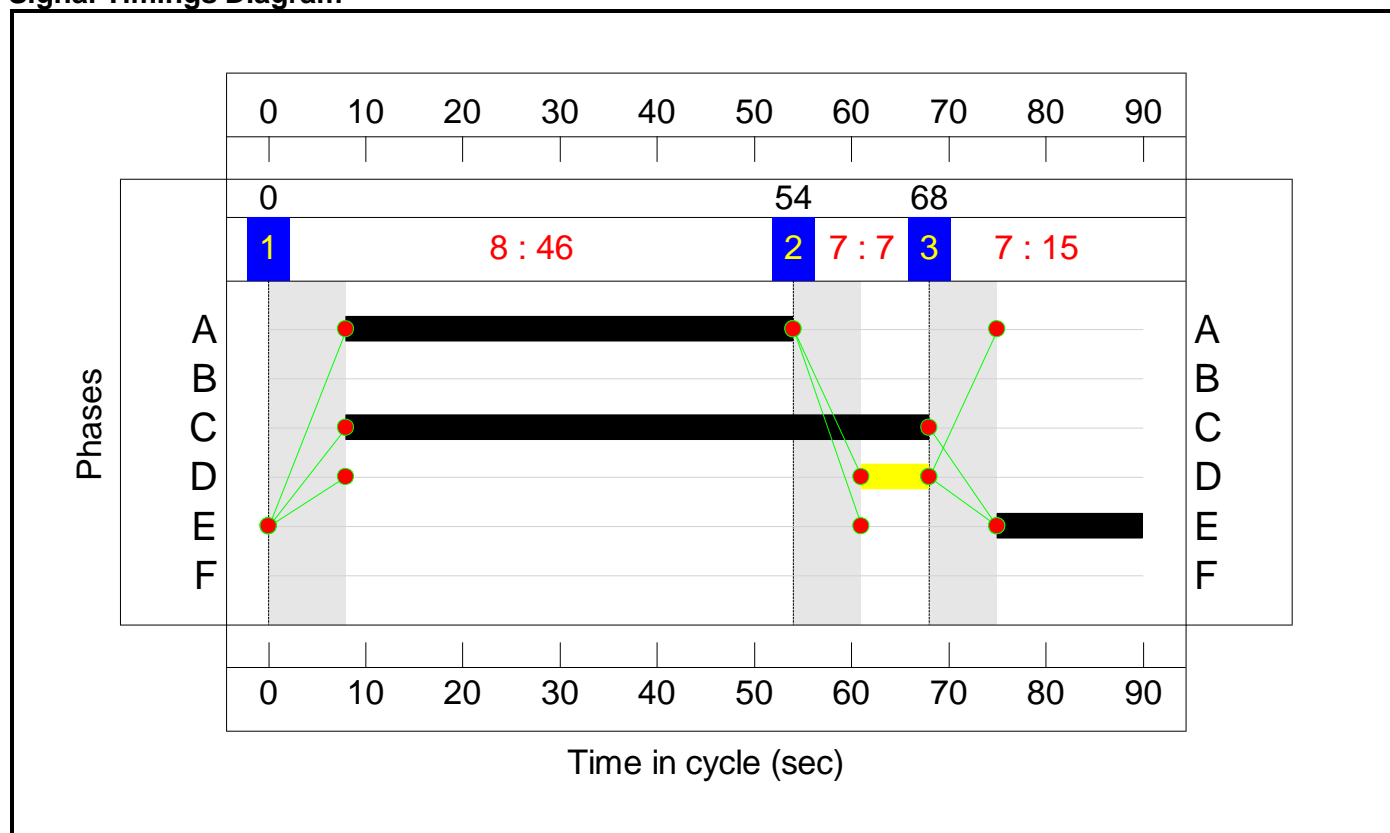
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

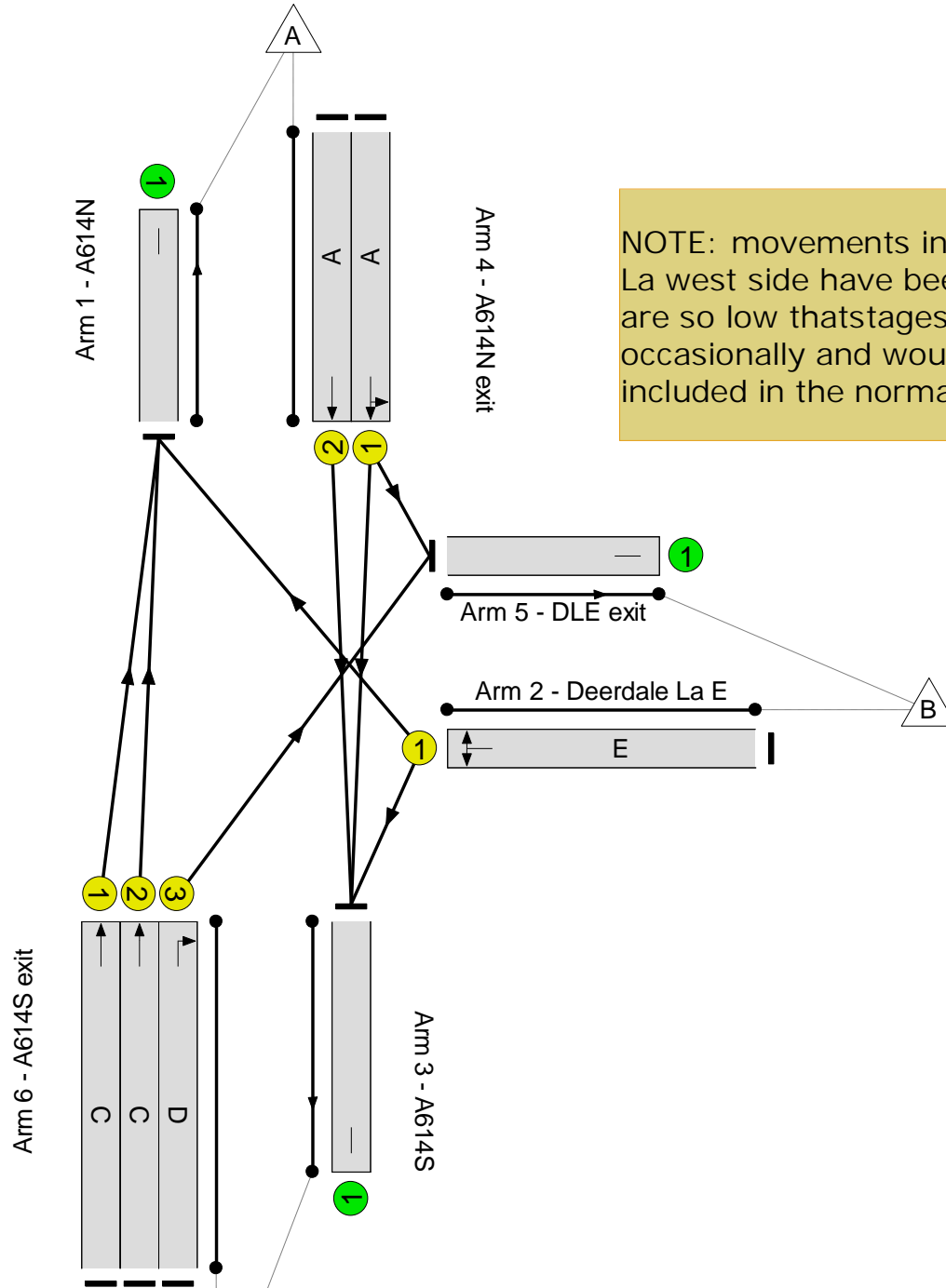
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 102.5 %  
Total Traffic Delay: 8.2 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	44.4%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	44.4%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	441	1900	992	44.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	441	1900	992	44.4%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	136	1800	320	42.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	421	1900	1288	32.7%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	421	1900	1288	32.7%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	44	1800	160	27.5%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	906	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	104	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%

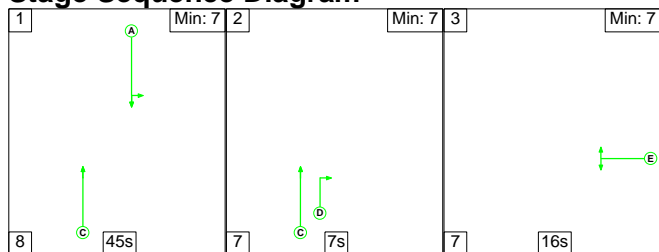
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.4	1.8	0.0	8.2	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.4	1.8	0.0	8.2	-	-	-	-
1/1	441	441	-	-	-	1.6	0.4	-	2.0	16.6	6.7	0.4	7.1
1/2	441	441	-	-	-	1.6	0.4	-	2.0	16.6	6.7	0.4	7.1
2/1	136	136	-	-	-	1.2	0.4	-	1.6	42.7	3.0	0.4	3.4
3/1	421	421	-	-	-	0.7	0.2	-	0.9	8.1	4.3	0.2	4.6
3/2	421	421	-	-	-	0.7	0.2	-	0.9	8.1	4.3	0.2	4.6
3/3	44	44	-	-	-	0.5	0.2	-	0.7	53.8	1.0	0.2	1.2
4/1	906	906	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	104	104	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):	102.5	Total Delay for Signalled Lanes (pcuHr):	8.24	Cycle Time (s):		90				
			PRC Over All Lanes (%):	102.5	Total Delay Over All Lanes (pcuHr):	8.24							

Full Input Data And Results

Scenario 19: 'ip2037LG' (FG19: 'ip2037LG', Plan 1: 'normal')

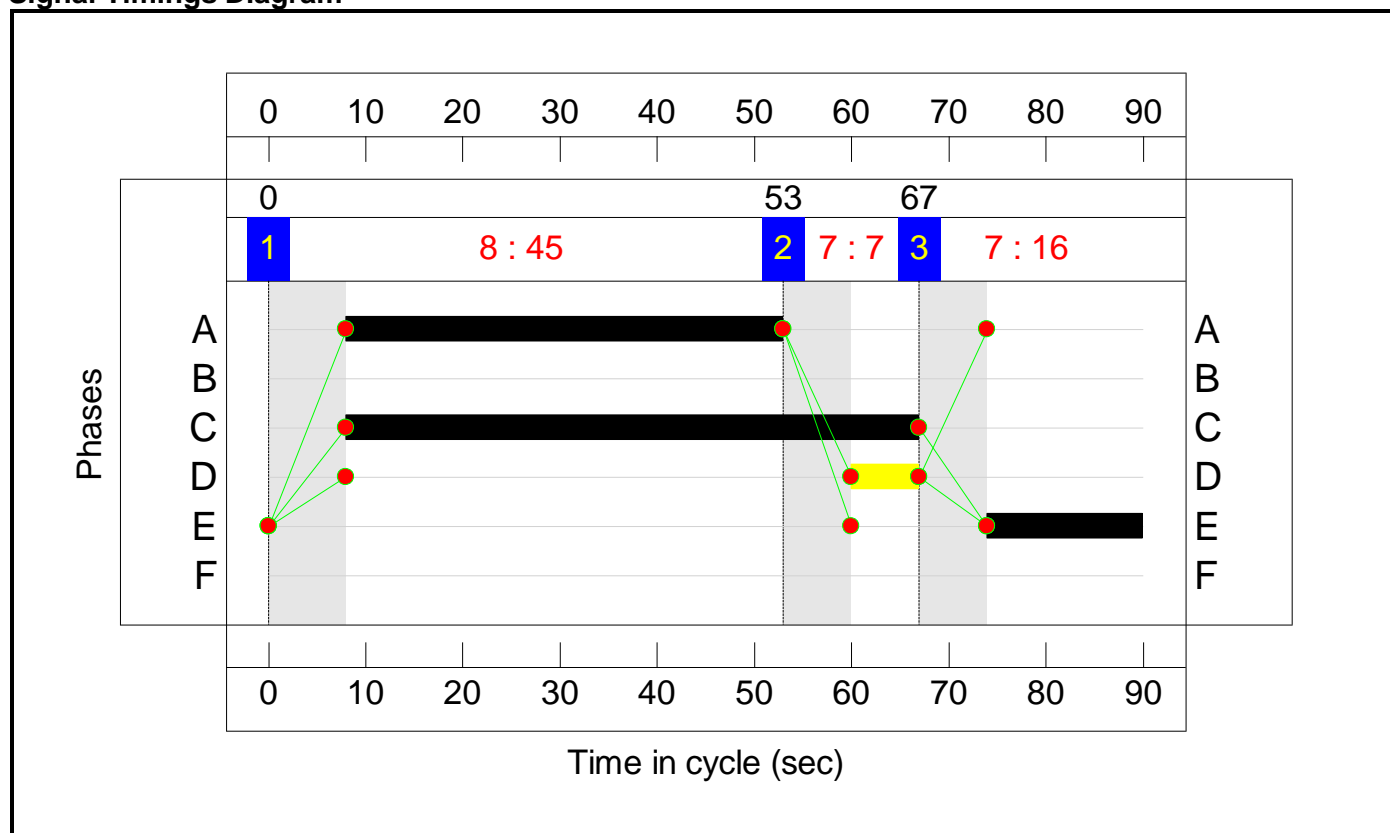
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

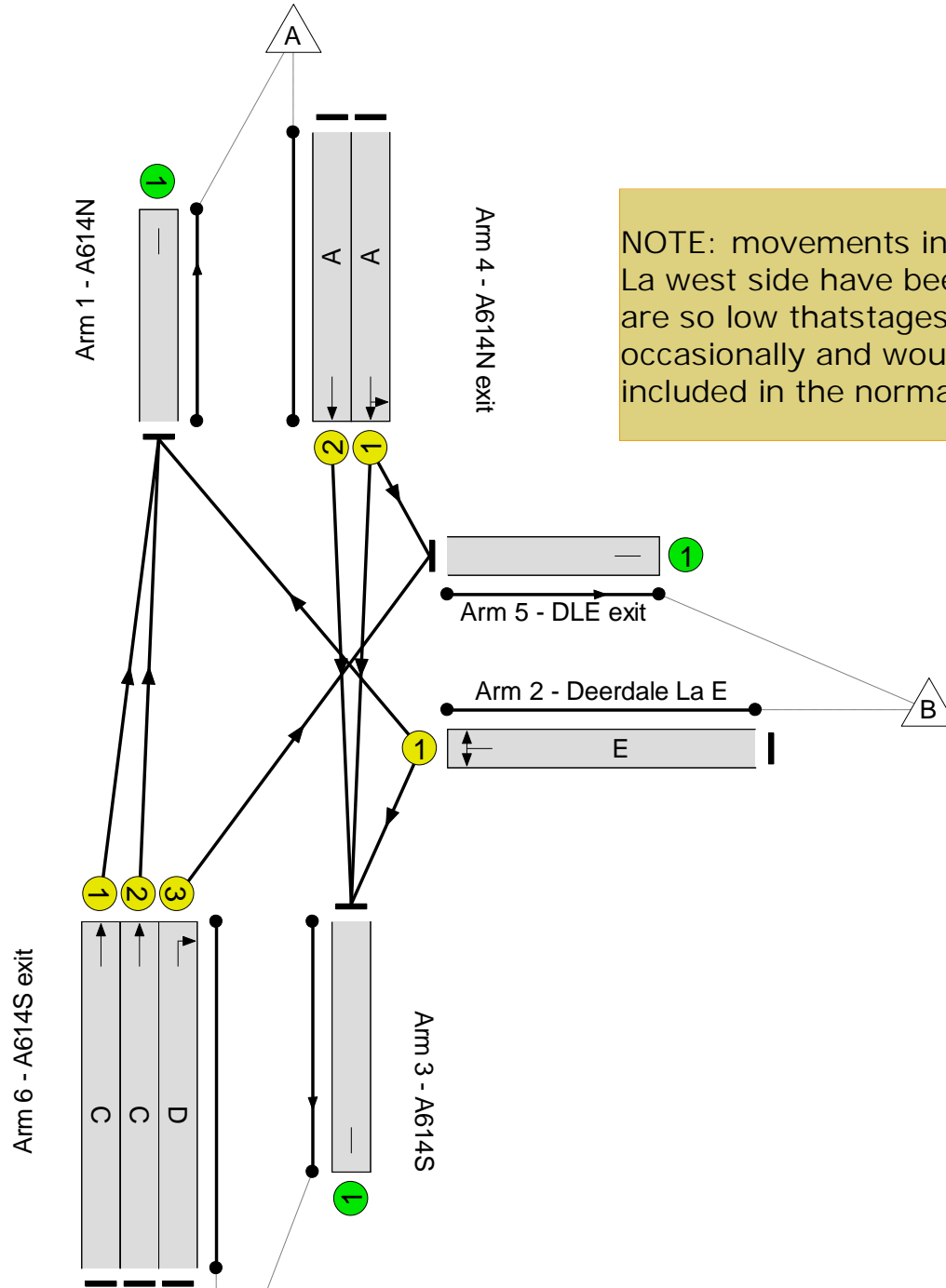
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 A614/ Deerdale Lane  
PRC: 189.4 %  
Total Traffic Delay: 5.6 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	31.1%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	31.1%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	302	1900	971	31.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	301	1900	971	31.0%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	105	1800	340	30.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	274	1900	1267	21.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	273	1900	1267	21.6%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	47	1800	160	29.4%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	600	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	100	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%

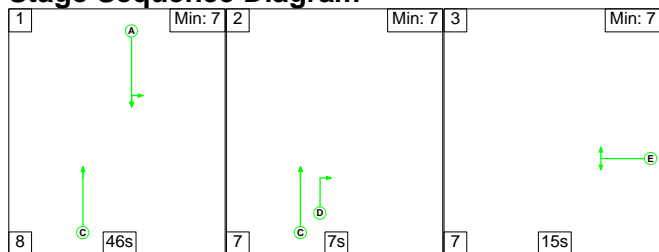
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	4.4	1.2	0.0	5.6	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	4.4	1.2	0.0	5.6	-	-	-	-
1/1	302	302	-	-	-	1.1	0.2	-	1.3	15.5	4.4	0.2	4.6
1/2	301	301	-	-	-	1.1	0.2	-	1.3	15.5	4.3	0.2	4.6
2/1	105	105	-	-	-	0.9	0.2	-	1.1	39.1	2.2	0.2	2.5
3/1	274	274	-	-	-	0.4	0.1	-	0.6	7.7	2.7	0.1	2.8
3/2	273	273	-	-	-	0.4	0.1	-	0.6	7.7	2.7	0.1	2.8
3/3	47	47	-	-	-	0.5	0.2	-	0.7	54.3	1.1	0.2	1.3
4/1	600	600	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	100	100	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		189.4	Total Delay for Signalled Lanes (pcuHr):		5.60	Cycle Time (s): 90				
			PRC Over All Lanes (%):		189.4	Total Delay Over All Lanes(pcuHr):		5.60					

Full Input Data And Results

Scenario 20: 'op2037LG' (FG20: 'op2037LG', Plan 1: 'normal')

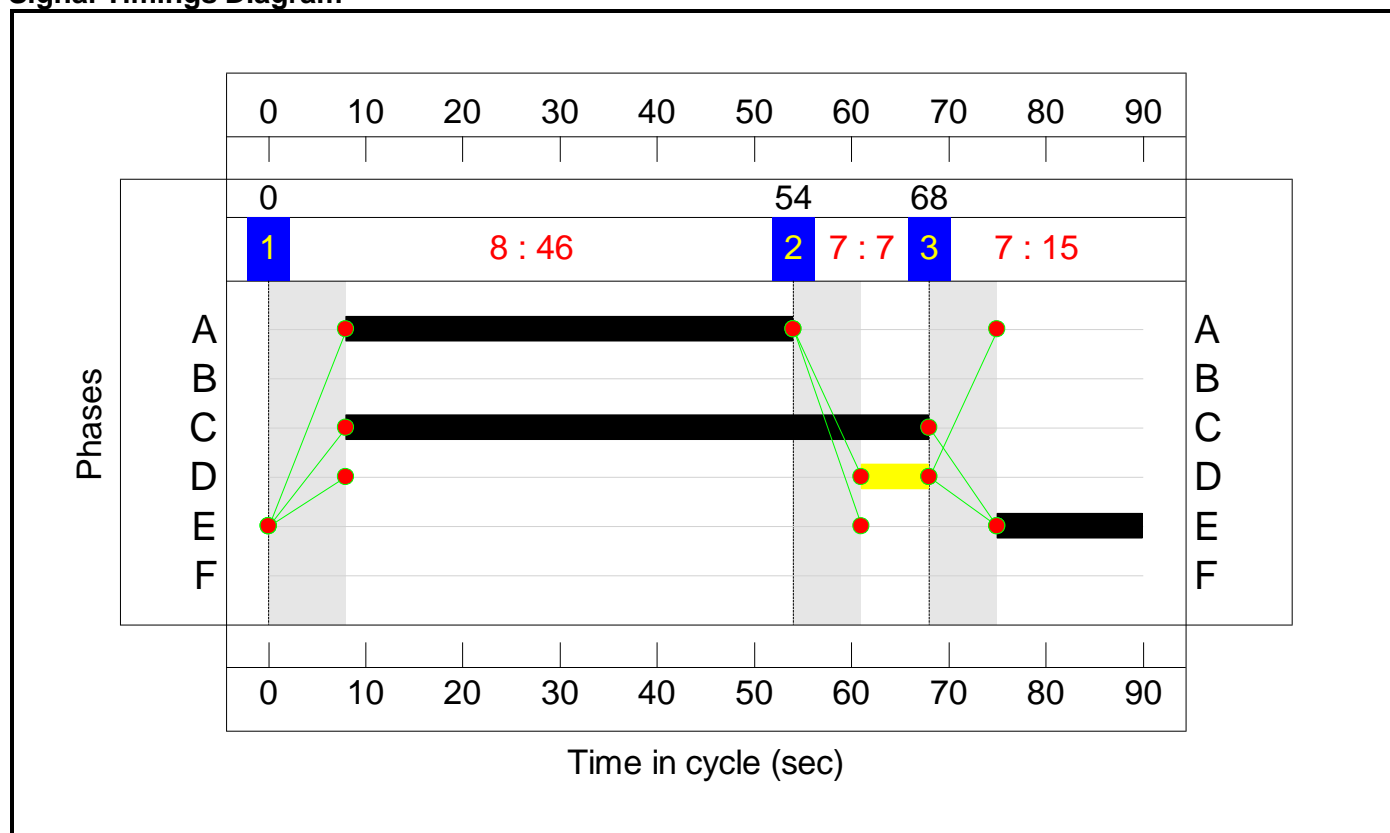
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68


Signal Timings Diagram

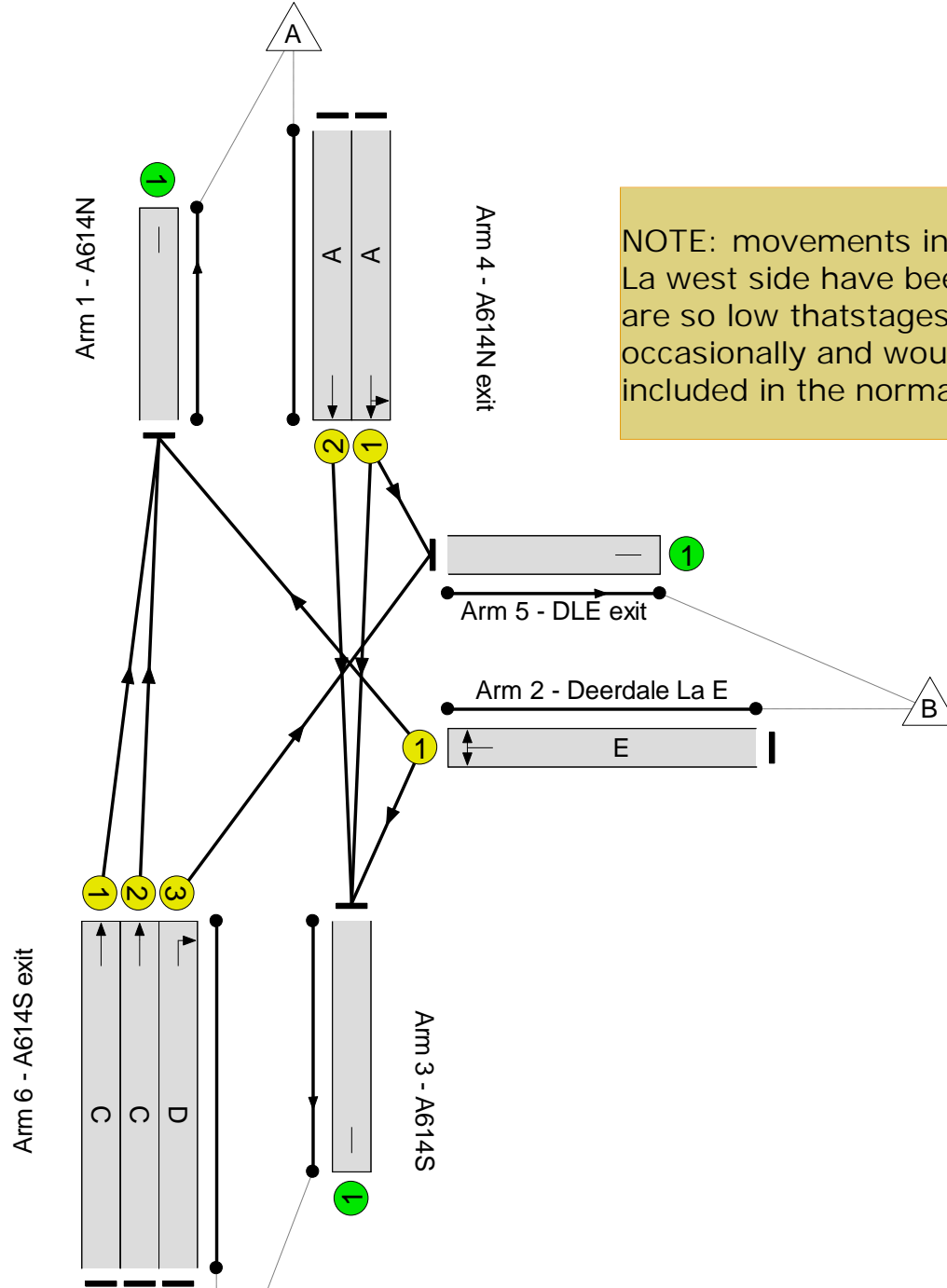




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 A614/ Deerdale Lane  
PRC: 2780.0 %  
Total Traffic Delay: 0.5 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.1%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.1%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	29	1900	992	2.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	30	1900	992	3.0%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	10	1800	320	3.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	27	1900	1288	2.1%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	26	1900	1288	2.0%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	58	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	10	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	59	Inf	Inf	0.0%

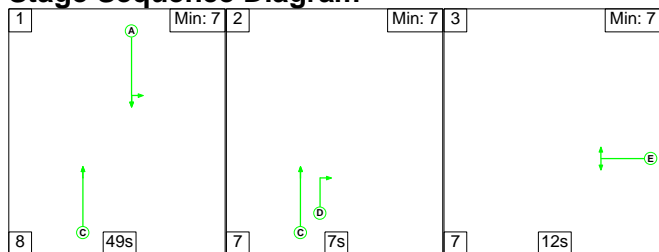
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	29	29	-	-	-	0.1	0.0	-	0.1	12.4	0.3	0.0	0.4
1/2	30	30	-	-	-	0.1	0.0	-	0.1	12.4	0.4	0.0	0.4
2/1	10	10	-	-	-	0.1	0.0	-	0.1	36.6	0.2	0.0	0.2
3/1	27	27	-	-	-	0.0	0.0	-	0.0	6.3	0.2	0.0	0.2
3/2	26	26	-	-	-	0.0	0.0	-	0.0	6.3	0.2	0.0	0.2
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	10	10	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	59	59	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2780.0		PRC Over All Lanes (%): 2780.0		Total Delay for Signalled Lanes (pcuHr): 0.47		Total Delay Over All Lanes(pcuHr): 0.47		Cycle Time (s): 90		

Full Input Data And Results

Scenario 21: 'am2023HG' (FG21: 'am2023HG', Plan 1: 'normal')

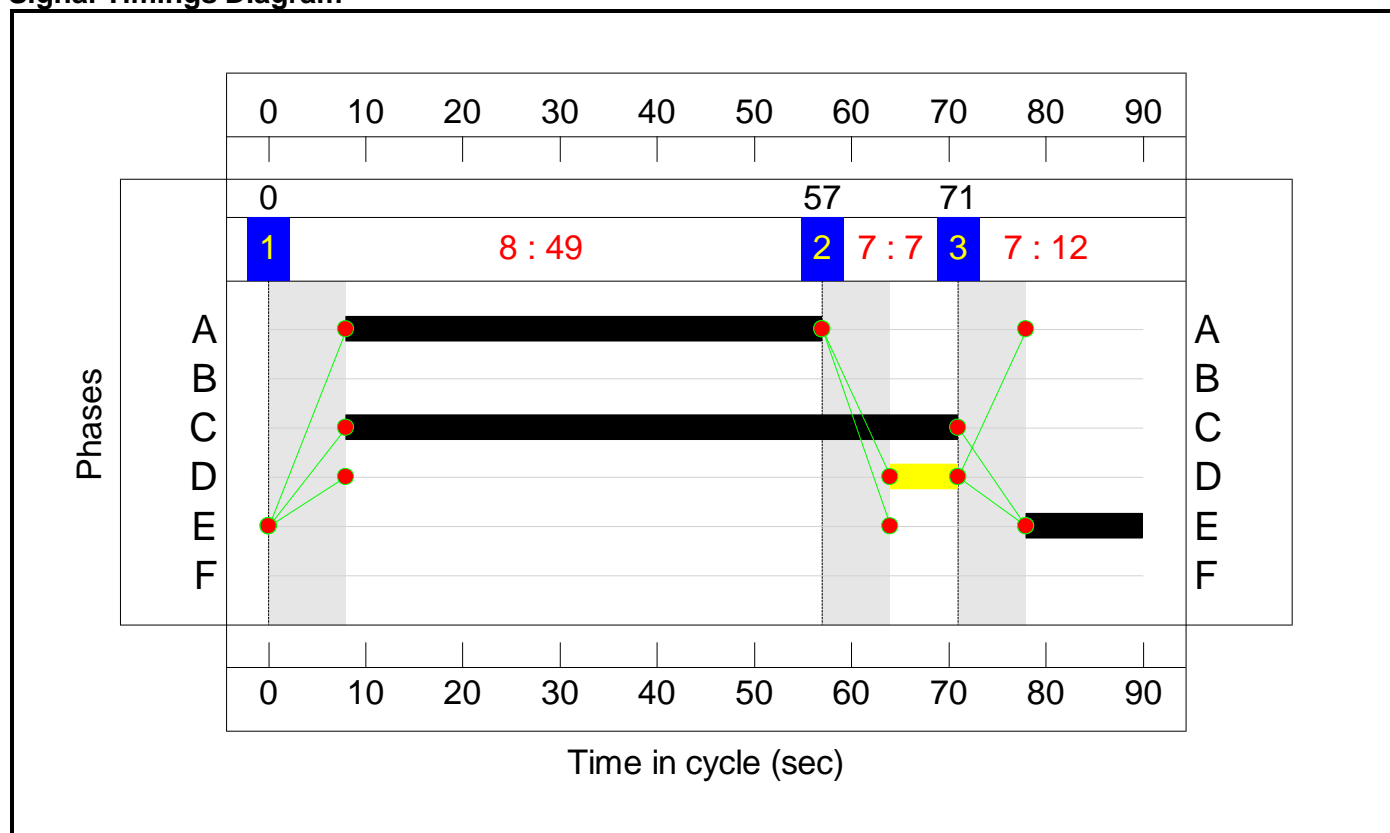
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	49	7	12
Change Point	0	57	71

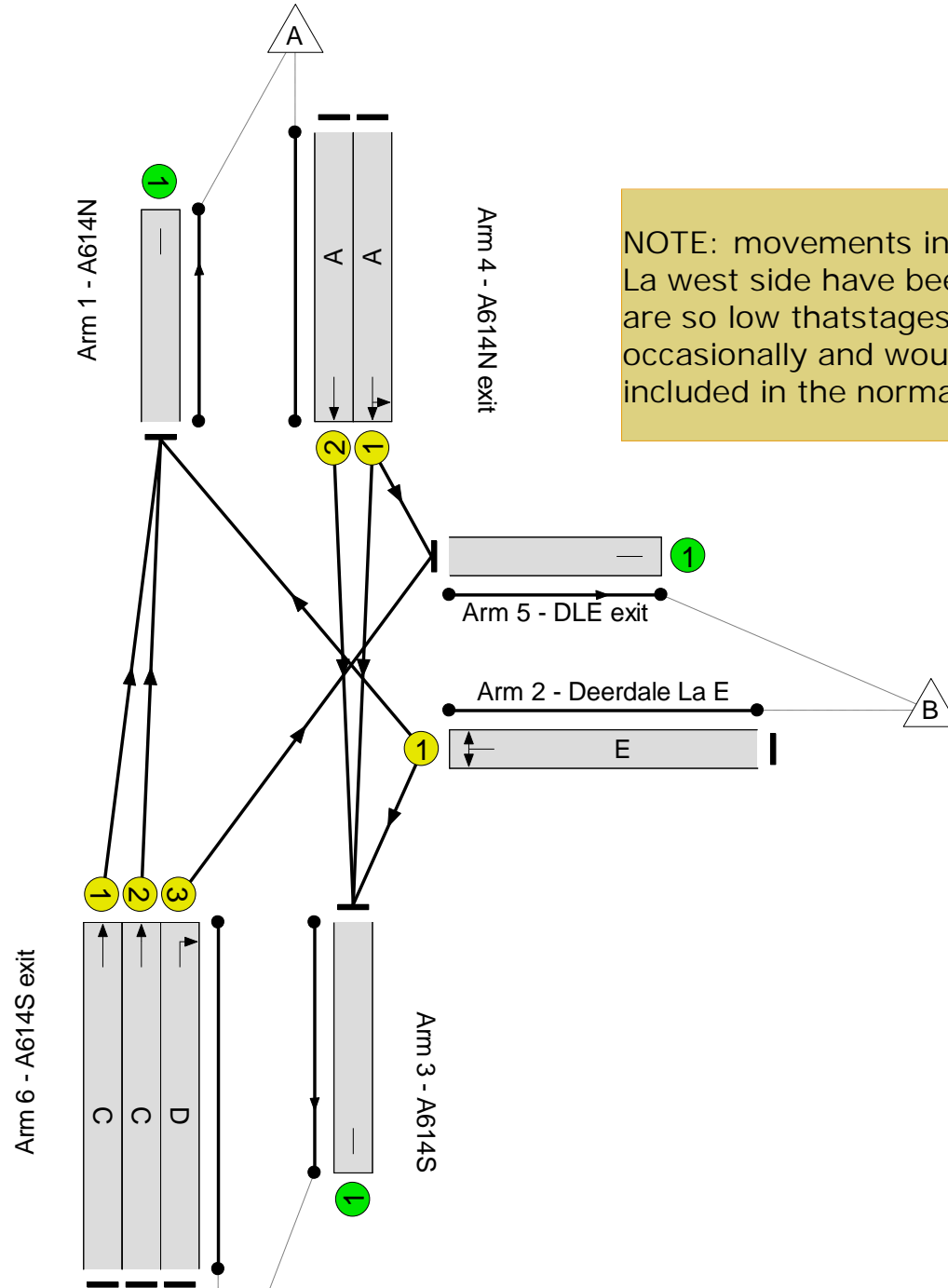
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 68.7 %  
Total Traffic Delay: 9.9 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	53.3%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	53.3%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	49	-	562	1900	1056	53.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	49	-	563	1900	1056	53.3%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	12	-	134	1800	260	51.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	63	-	459	1900	1351	34.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	63	-	459	1900	1351	34.0%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	74	1800	160	46.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	977	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	169	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1105	Inf	Inf	0.0%



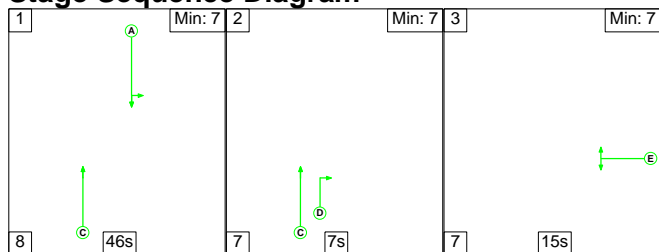
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	7.3	2.6	0.0	9.9	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	7.3	2.6	0.0	9.9	-	-	-	-
1/1	562	562	-	-	-	2.0	0.6	-	2.5	16.3	8.7	0.6	9.3
1/2	563	563	-	-	-	2.0	0.6	-	2.5	16.3	8.8	0.6	9.3
2/1	134	134	-	-	-	1.3	0.5	-	1.9	49.8	3.1	0.5	3.6
3/1	459	459	-	-	-	0.6	0.3	-	0.9	7.0	4.3	0.3	4.6
3/2	459	459	-	-	-	0.6	0.3	-	0.9	7.0	4.3	0.3	4.6
3/3	74	74	-	-	-	0.8	0.4	-	1.2	59.7	1.7	0.4	2.2
4/1	977	977	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	169	169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1105	1105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		68.7	Total Delay for Signalled Lanes (pcuHr):		9.94	Cycle Time (s): 90				
			PRC Over All Lanes (%):		68.7	Total Delay Over All Lanes(pcuHr):		9.94					

Full Input Data And Results

Scenario 22: 'pm2023HG' (FG22: 'pm2023HG', Plan 1: 'normal')

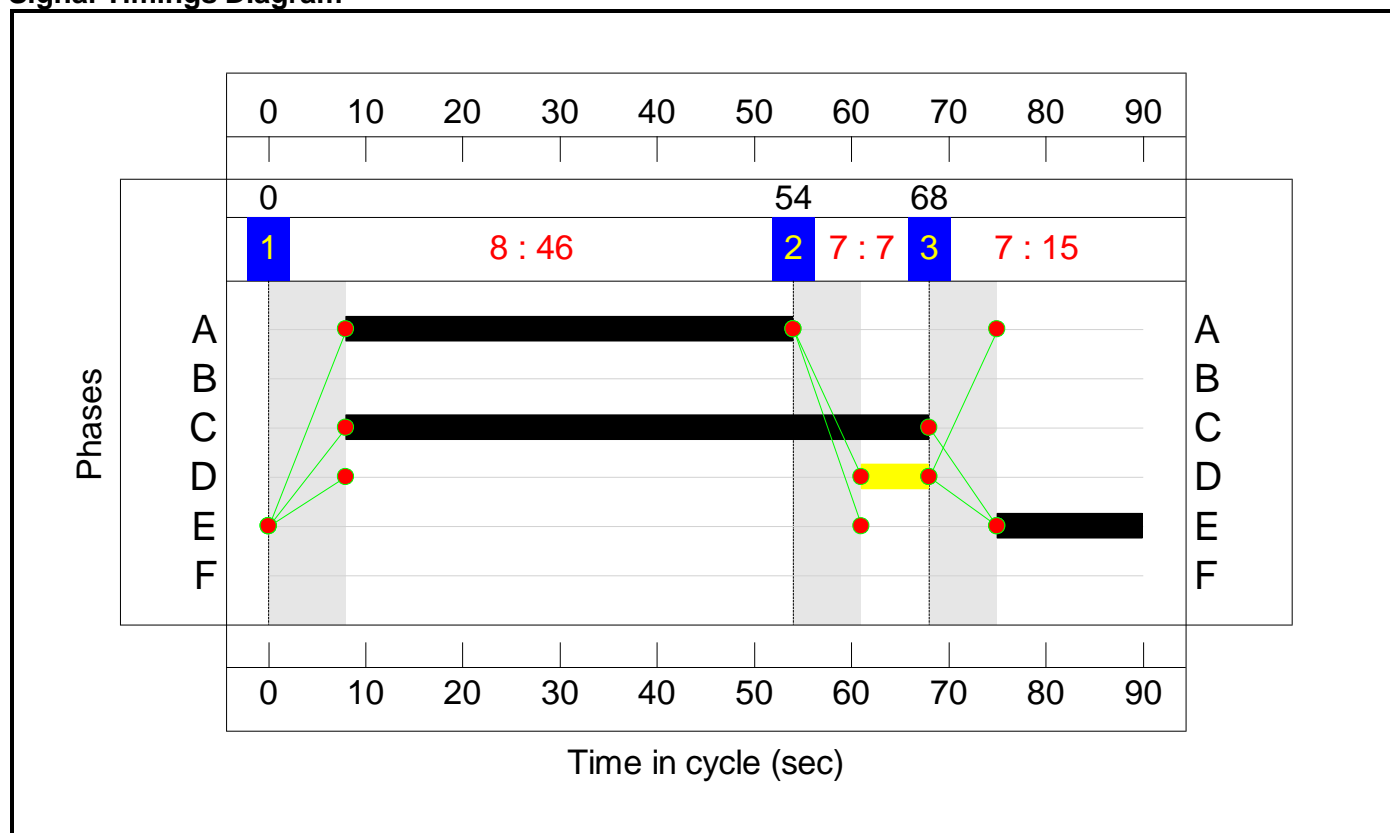
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

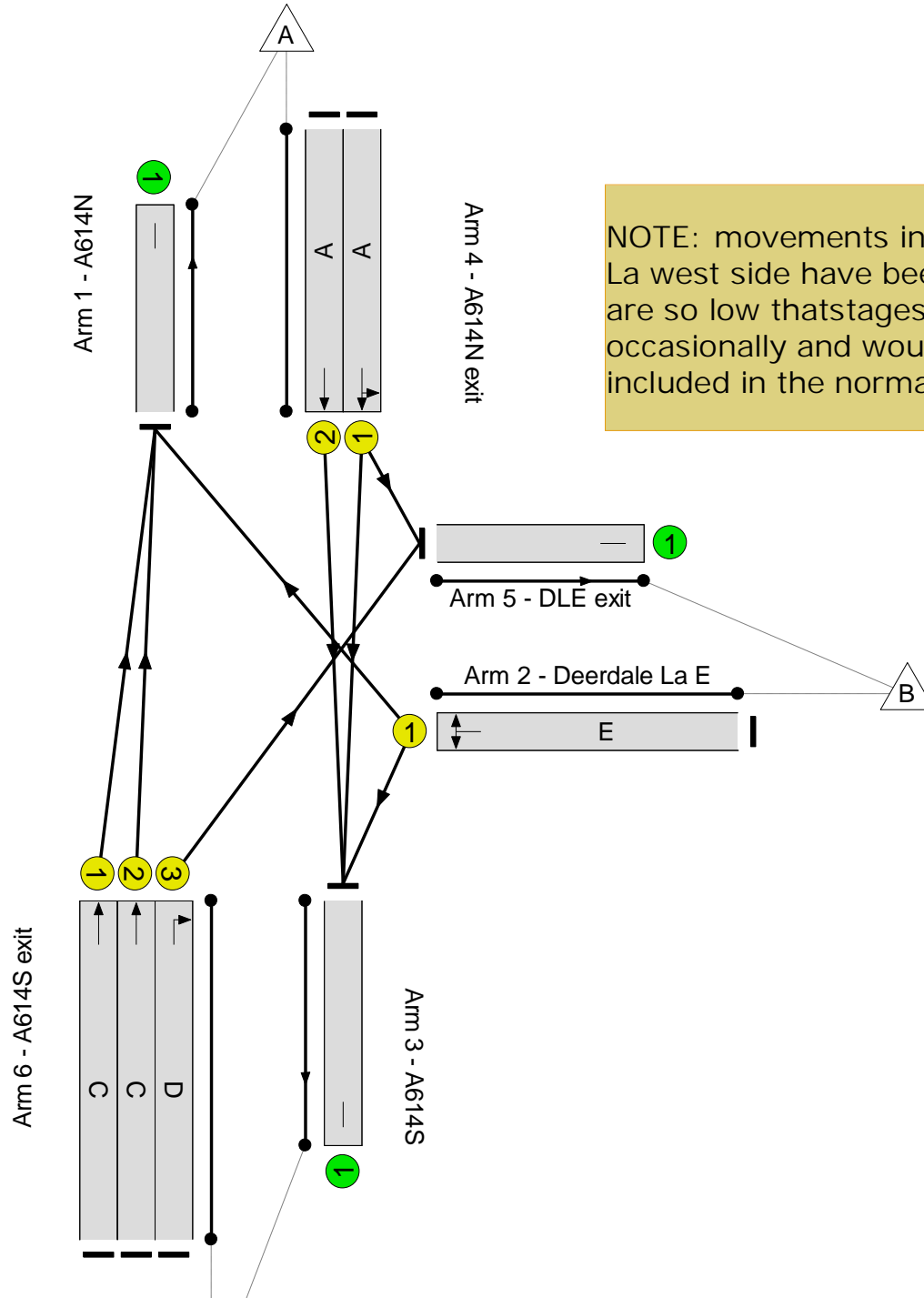
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 77.2 %  
Total Traffic Delay: 9.9 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>50.8%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>50.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	504	1900	992	50.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	504	1900	992	50.8%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	156	1800	320	48.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	484	1900	1288	37.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	483	1900	1288	37.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	50	1800	160	31.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1040	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	116	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1025	Inf	Inf	0.0%

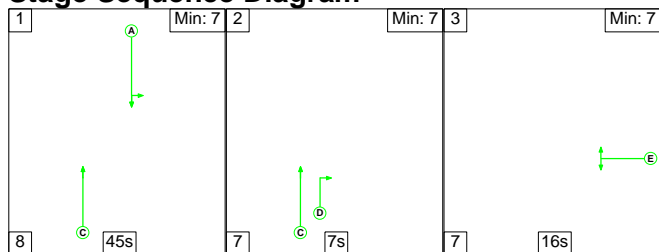
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	7.6	2.3	0.0	9.9	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	7.6	2.3	0.0	9.9	-	-	-	-
1/1	504	504	-	-	-	2.0	0.5	-	2.5	17.7	8.1	0.5	8.6
1/2	504	504	-	-	-	2.0	0.5	-	2.5	17.7	8.1	0.5	8.6
2/1	156	156	-	-	-	1.4	0.5	-	1.9	44.2	3.5	0.5	4.0
3/1	484	484	-	-	-	0.8	0.3	-	1.1	8.5	5.1	0.3	5.4
3/2	483	483	-	-	-	0.8	0.3	-	1.1	8.5	5.1	0.3	5.4
3/3	50	50	-	-	-	0.5	0.2	-	0.8	54.8	1.2	0.2	1.4
4/1	1040	1040	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	116	116	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1025	1025	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		77.2	Total Delay for Signalled Lanes (pcuHr):			9.91	Cycle Time (s): 90			
			PRC Over All Lanes (%):		77.2	Total Delay Over All Lanes(pcuHr):			9.91				

Full Input Data And Results

Scenario 23: 'ip2023HG' (FG23: 'ip2023HG', Plan 1: 'normal')

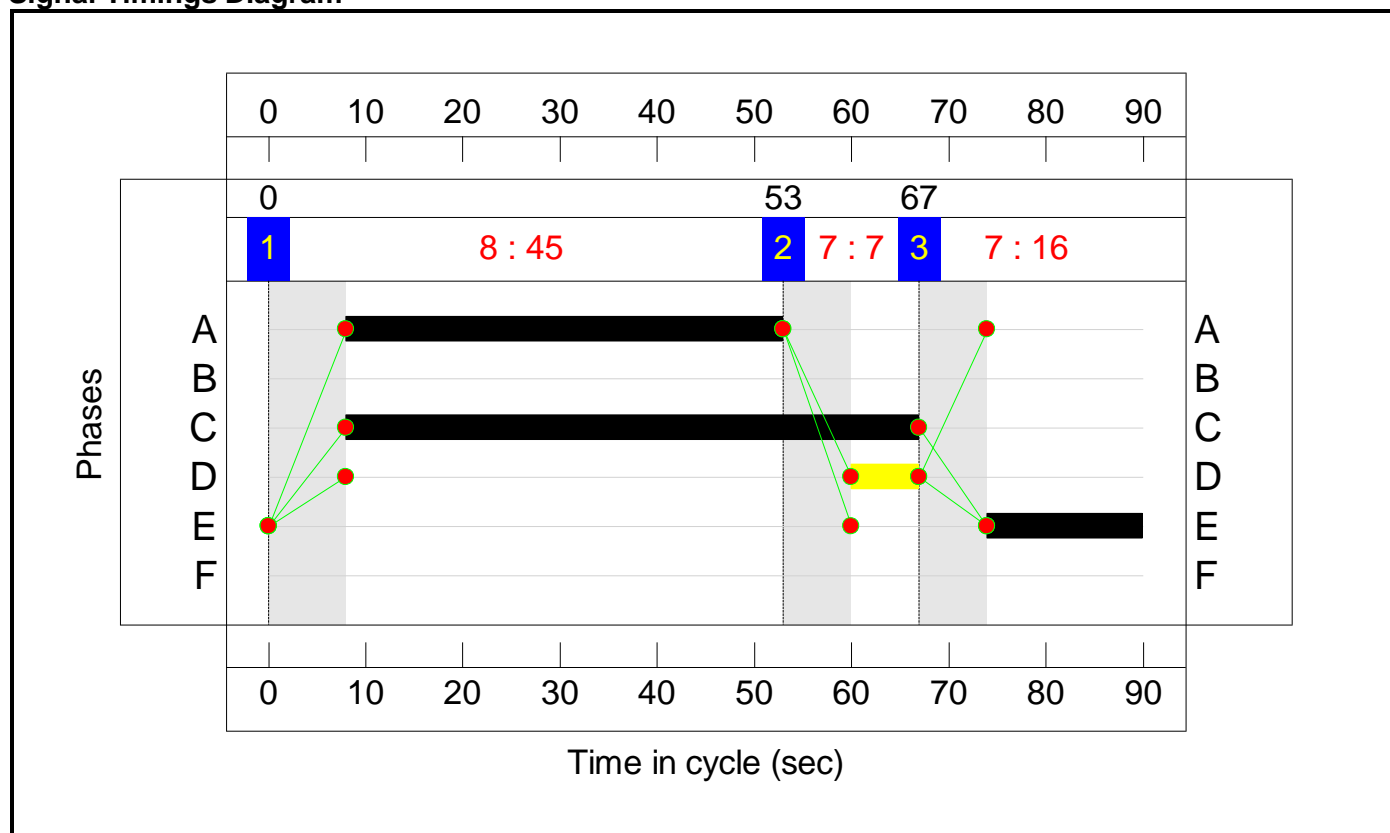
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

Signal Timings Diagram

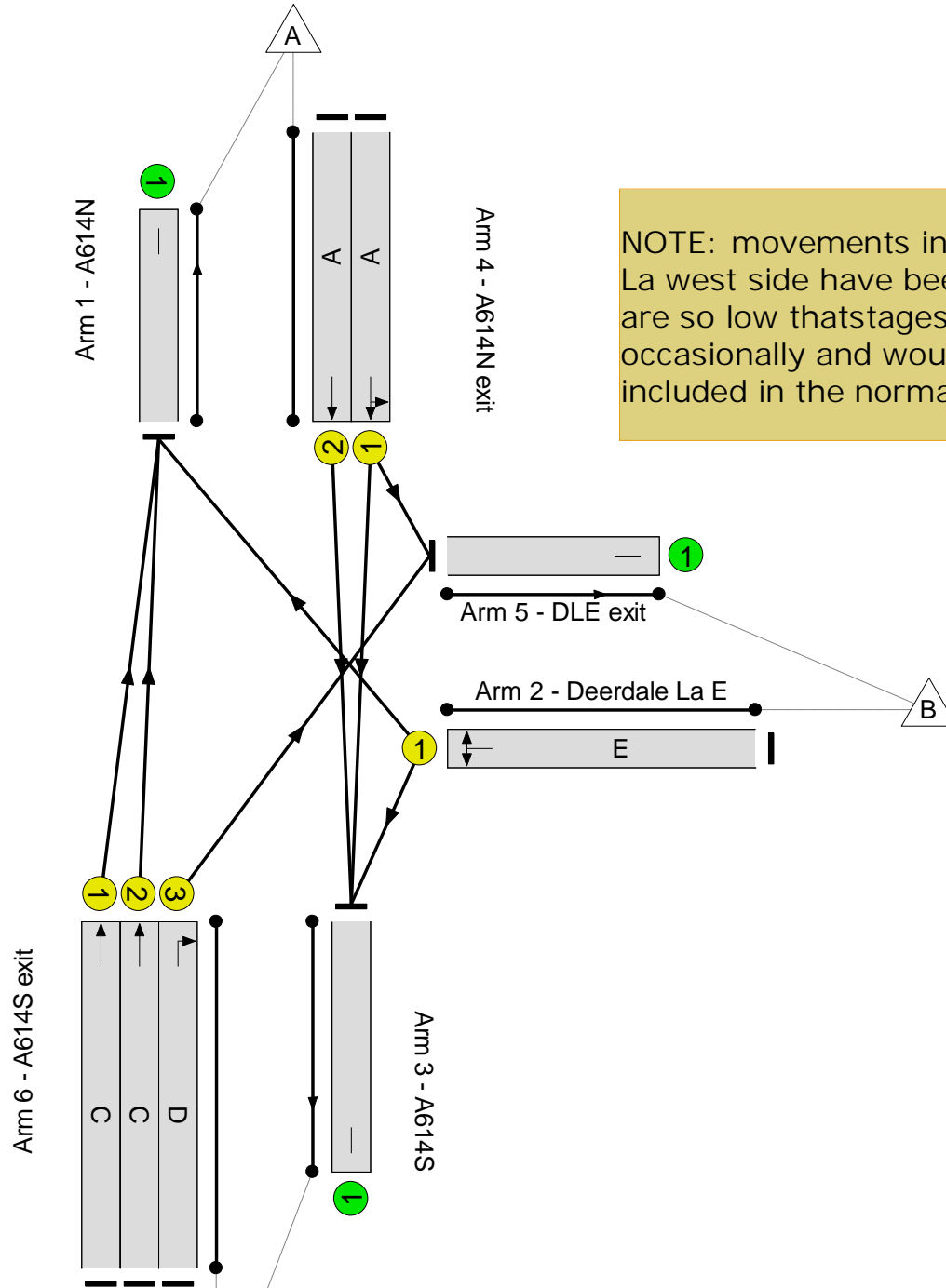


Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

A614/ Deerdale Lane  
PRC: 157.8 %  
Total Traffic Delay: 6.5 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>34.9%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>34.9%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	339	1900	971	34.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	339	1900	971	34.9%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	118	1800	340	34.7%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	310	1900	1267	24.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	309	1900	1267	24.4%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	53	1800	160	33.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	678	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	678	Inf	Inf	0.0%

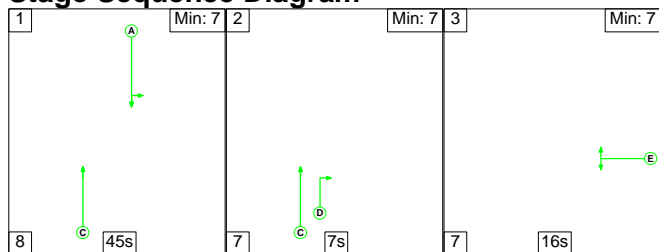
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	5.1	1.4	0.0	6.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	5.1	1.4	0.0	6.5	-	-	-	-
1/1	339	339	-	-	-	1.2	0.3	-	1.5	15.9	5.0	0.3	5.3
1/2	339	339	-	-	-	1.2	0.3	-	1.5	15.9	5.0	0.3	5.3
2/1	118	118	-	-	-	1.0	0.3	-	1.3	39.8	2.6	0.3	2.8
3/1	310	310	-	-	-	0.5	0.2	-	0.7	7.9	3.0	0.2	3.2
3/2	309	309	-	-	-	0.5	0.2	-	0.7	7.9	3.0	0.2	3.2
3/3	53	53	-	-	-	0.6	0.2	-	0.8	55.3	1.2	0.2	1.5
4/1	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	678	678	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		157.8	Total Delay for Signalled Lanes (pcuHr):		6.47	Cycle Time (s): 90				
			PRC Over All Lanes (%):		157.8	Total Delay Over All Lanes(pcuHr):		6.47					

Full Input Data And Results

Scenario 24: 'op2023HG' (FG24: 'op2023HG', Plan 1: 'normal')

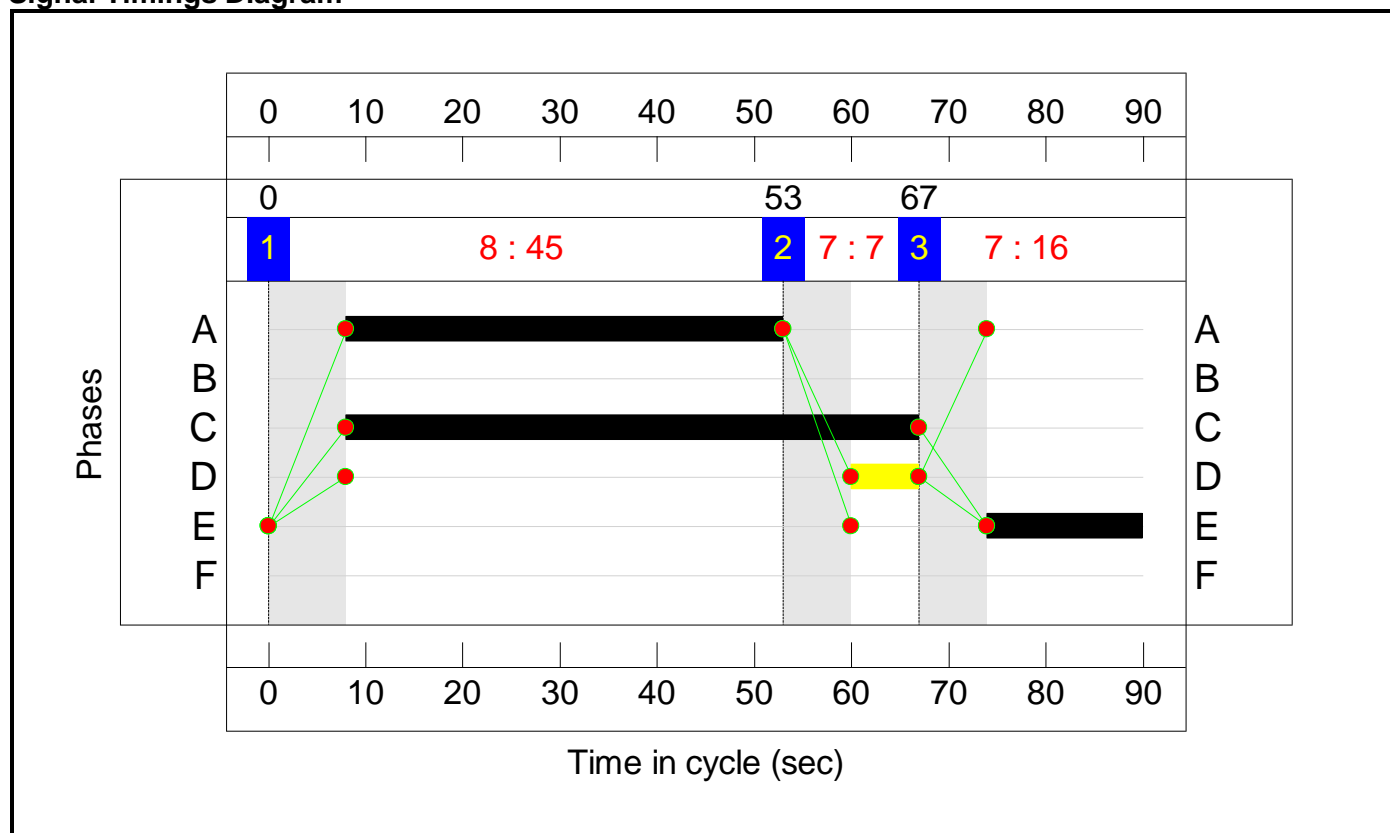
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	45	7	16
Change Point	0	53	67

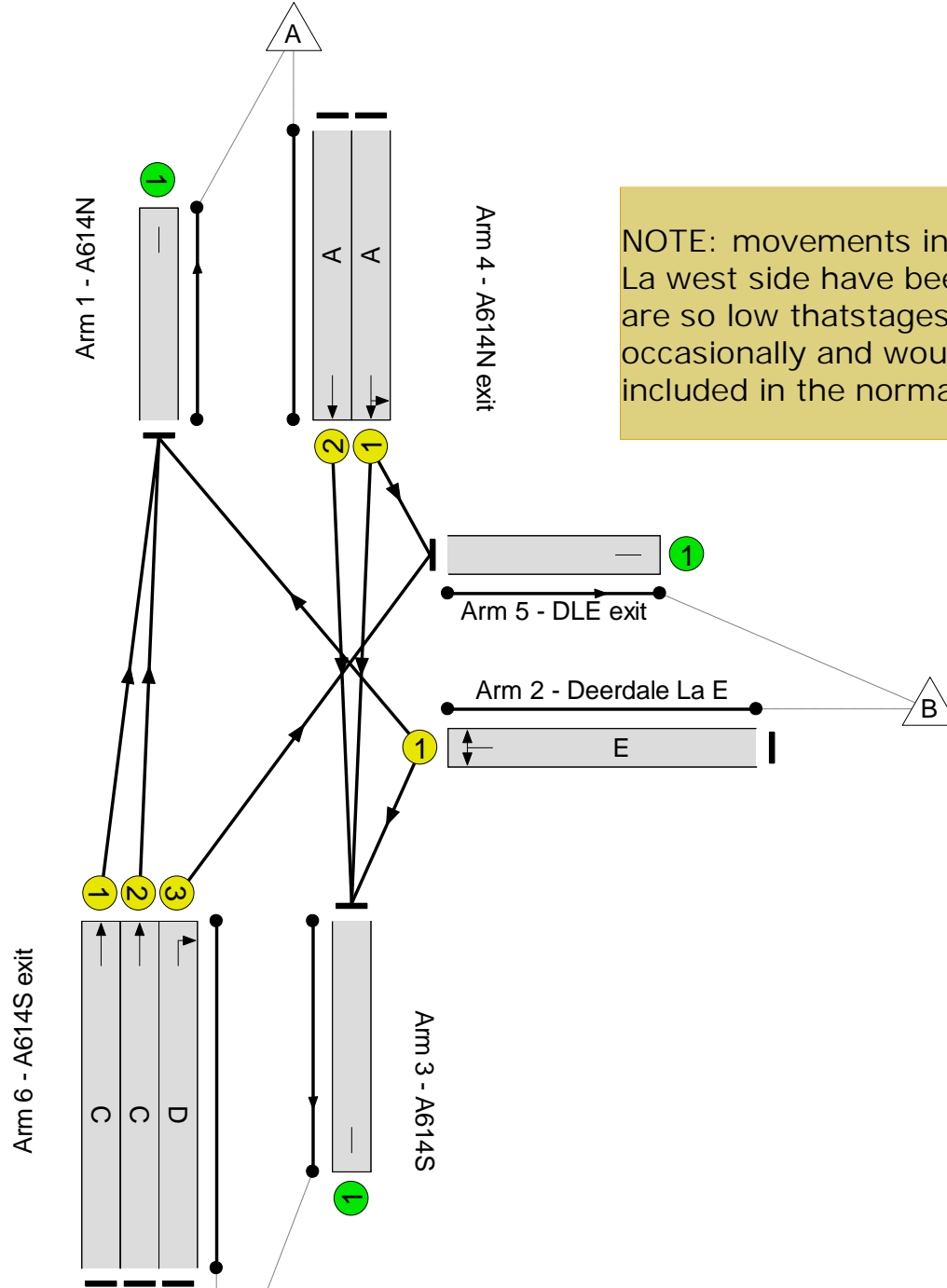
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 A614/ Deerdale Lane  
PRC: 2450.0 %  
Total Traffic Delay: 0.5 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.5%
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	3.5%
1/1	A614N Left Ahead	U	N/A	N/A	A		1	45	-	33	1900	971	3.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	45	-	34	1900	971	3.5%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	16	-	12	1800	340	3.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	30	1900	1267	2.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	30	1900	1267	2.4%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	5	1800	160	3.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	11	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%

Full Input Data And Results

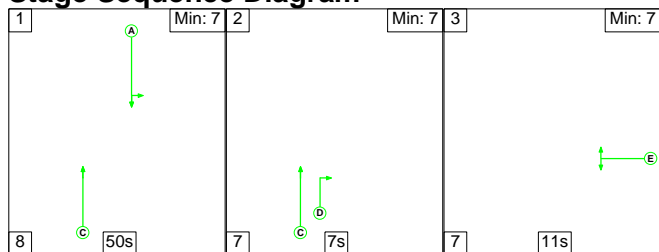
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.4	0.1	0.0	0.5	-	-	-	-
1/1	33	33	-	-	-	0.1	0.0	-	0.1	12.9	0.4	0.0	0.4
1/2	34	34	-	-	-	0.1	0.0	-	0.1	12.9	0.4	0.0	0.4
2/1	12	12	-	-	-	0.1	0.0	-	0.1	35.5	0.2	0.0	0.3
3/1	30	30	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.3
3/2	30	30	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.3
3/3	5	5	-	-	-	0.1	0.0	-	0.1	49.4	0.1	0.0	0.1
4/1	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	11	11	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2450.0		PRC Over All Lanes (%): 2450.0		Total Delay for Signalled Lanes (pcuHr): 0.54		Total Delay Over All Lanes(pcuHr): 0.54		Cycle Time (s): 90		



Full Input Data And Results

Scenario 25: 'am2037HG' (FG25: 'am2037HG', Plan 1: 'normal')

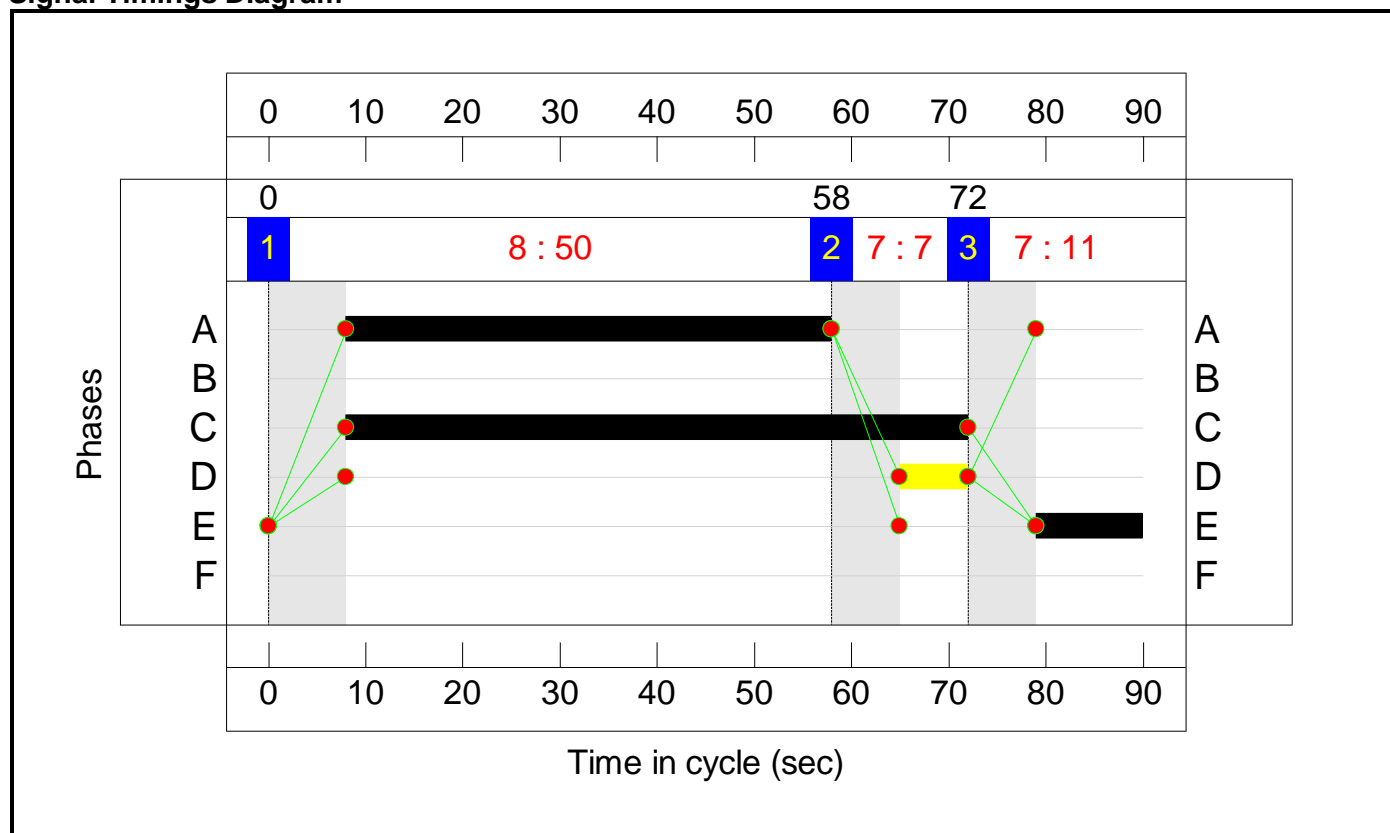
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	50	7	11
Change Point	0	58	72

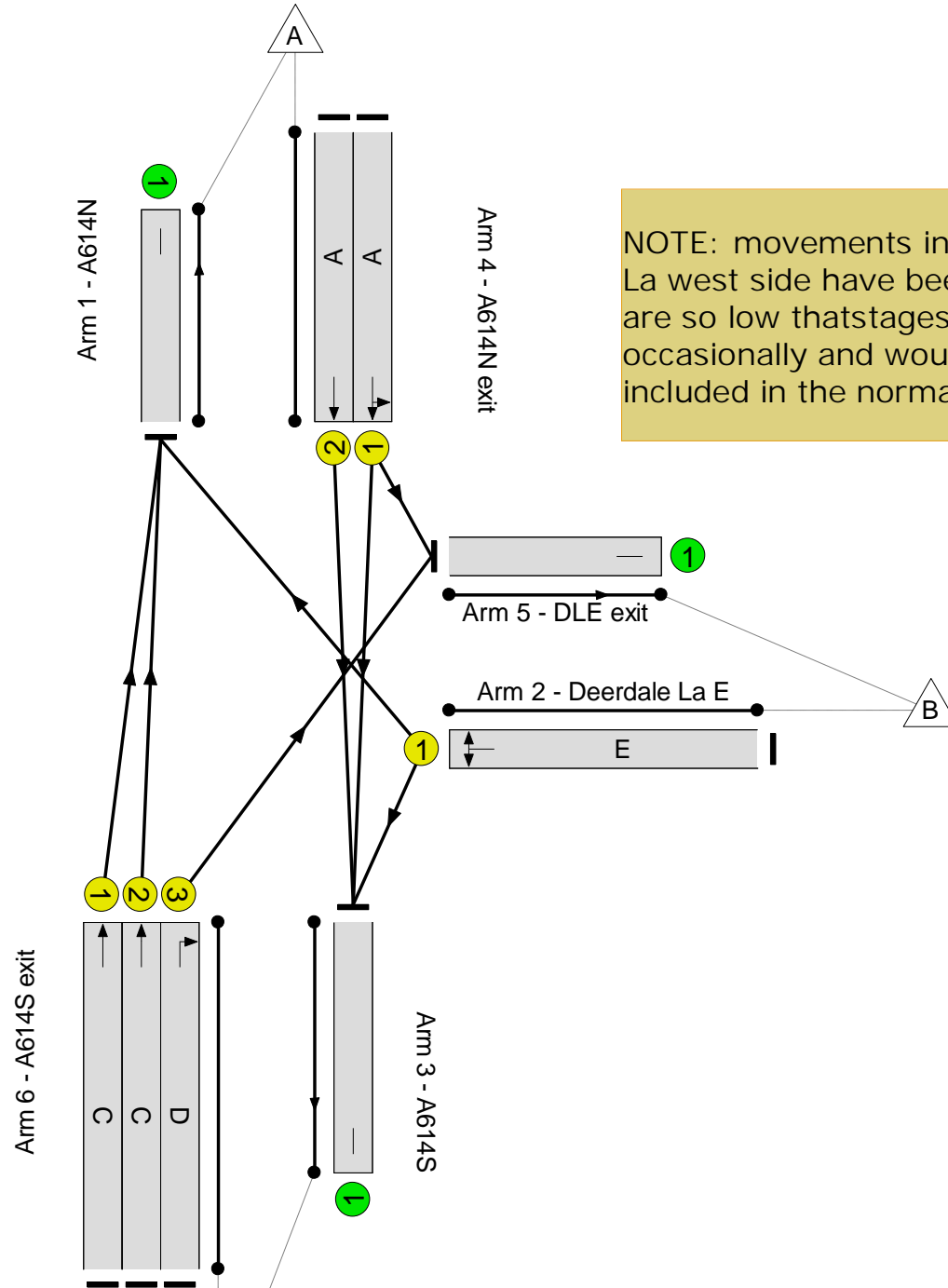

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 40.4 %  
Total Traffic Delay: 12.8 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>64.1%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>64.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	50	-	690	1900	1077	64.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	50	-	690	1900	1077	64.1%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	11	-	149	1800	240	62.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	64	-	549	1900	1372	40.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	64	-	548	1900	1372	39.9%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	82	1800	160	51.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1164	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	195	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1349	Inf	Inf	0.0%

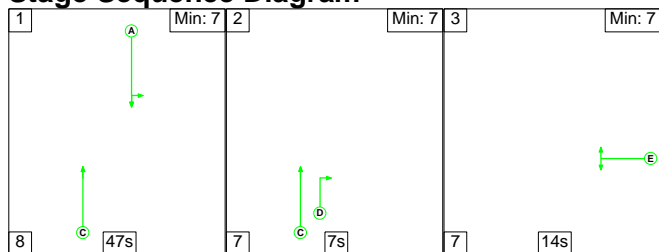
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	9.0	3.8	0.0	12.8	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	9.0	3.8	0.0	12.8	-	-	-	-
1/1	690	690	-	-	-	2.5	0.9	-	3.4	17.9	11.7	0.9	12.6
1/2	690	690	-	-	-	2.5	0.9	-	3.4	17.9	11.7	0.9	12.6
2/1	149	149	-	-	-	1.5	0.8	-	2.3	56.3	3.5	0.8	4.3
3/1	549	549	-	-	-	0.7	0.3	-	1.1	7.1	5.3	0.3	5.7
3/2	548	548	-	-	-	0.7	0.3	-	1.1	7.1	5.3	0.3	5.7
3/3	82	82	-	-	-	0.9	0.5	-	1.4	61.9	1.9	0.5	2.5
4/1	1164	1164	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	195	195	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1349	1349	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		40.4	Total Delay for Signalled Lanes (pcuHr):		12.76	Cycle Time (s): 90				
			PRC Over All Lanes (%):		40.4	Total Delay Over All Lanes(pcuHr):		12.76					

Full Input Data And Results

Scenario 26: 'pm2037HG' (FG26: 'pm2037HG', Plan 1: 'normal')

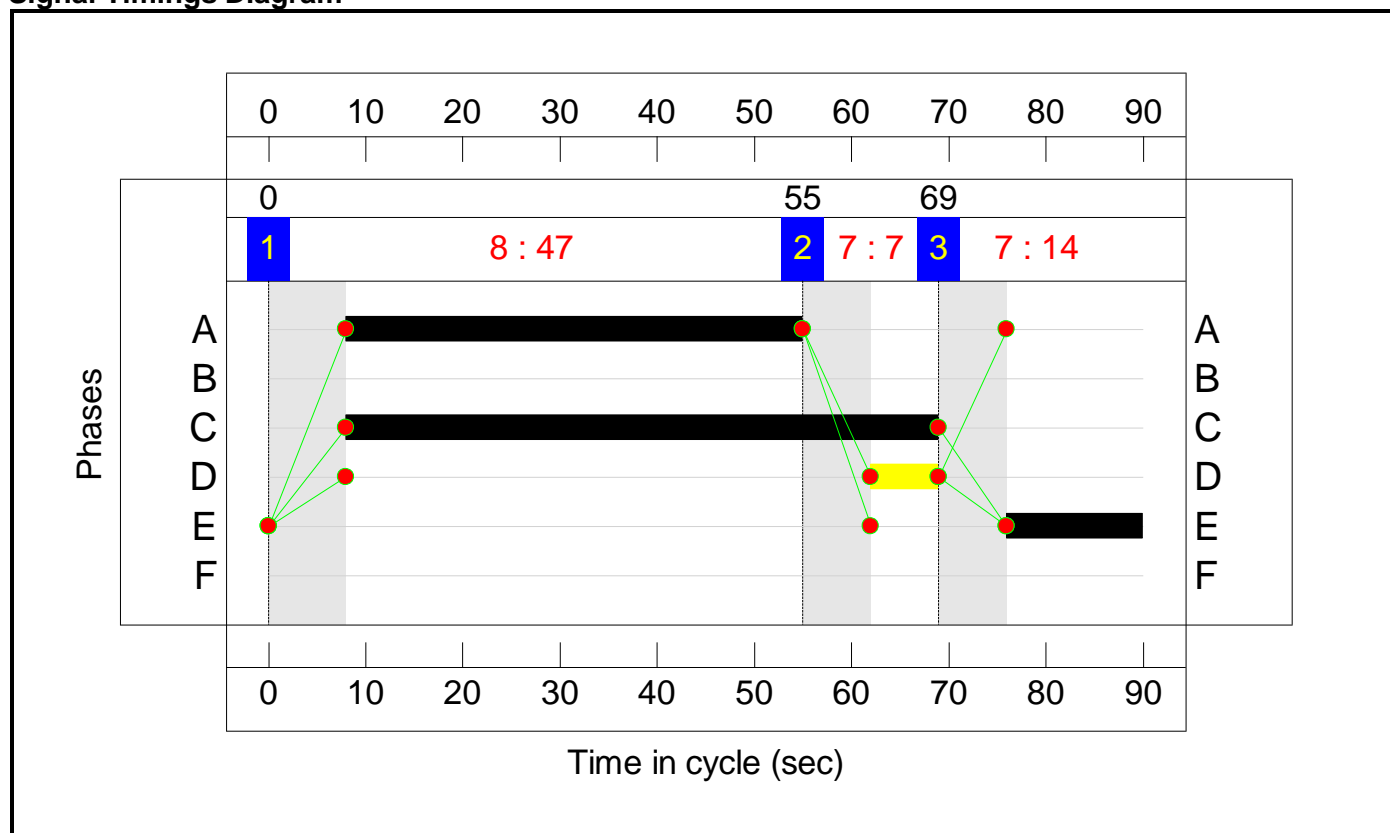
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	47	7	14
Change Point	0	55	69

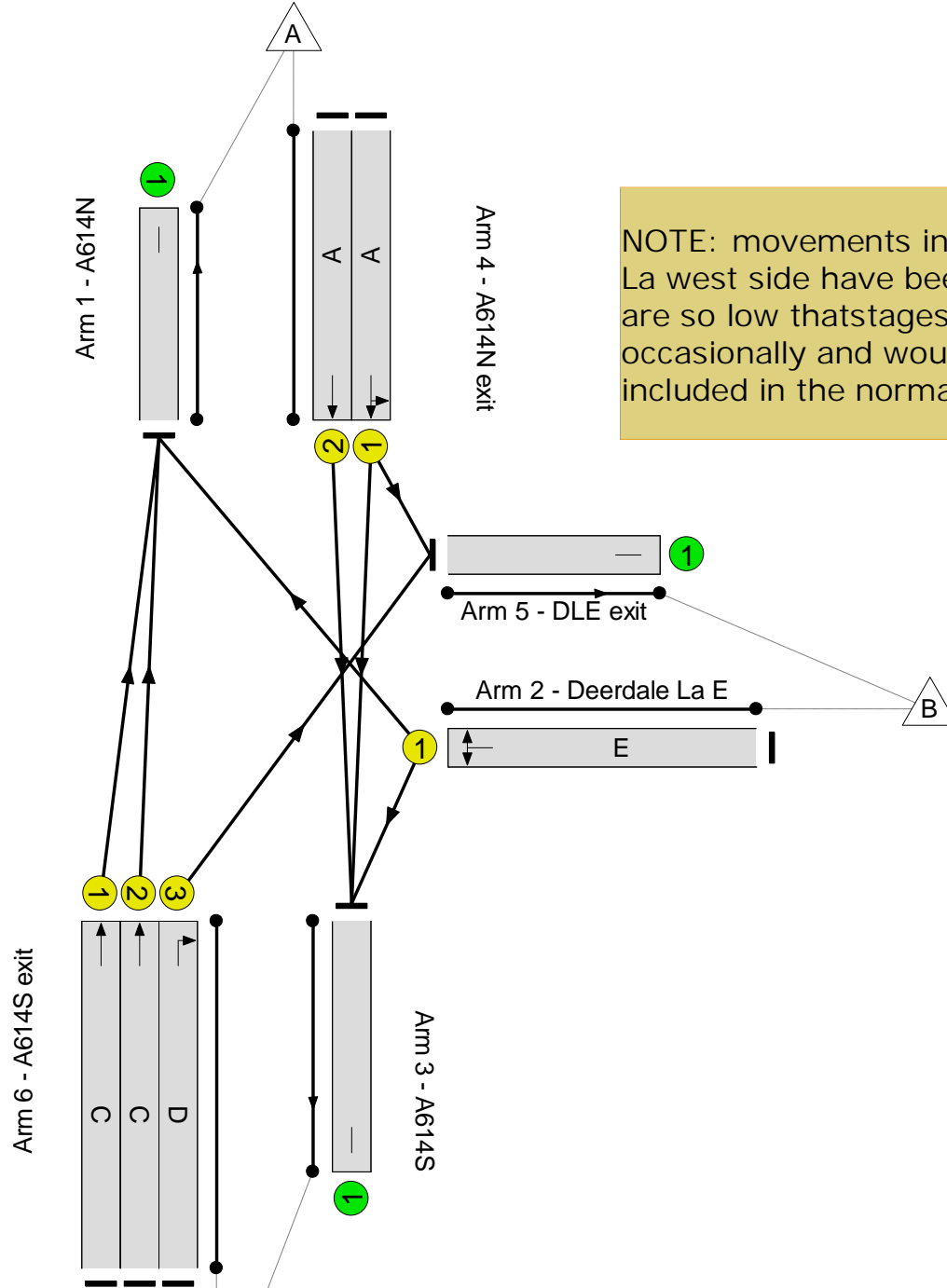

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 48.1 %  
Total Traffic Delay: 12.8 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>60.8%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>60.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	47	-	616	1900	1013	60.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	47	-	616	1900	1013	60.8%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	14	-	180	1800	300	60.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	603	1900	1309	46.1%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	603	1900	1309	46.1%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	56	1800	160	35.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1293	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	134	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1247	Inf	Inf	0.0%

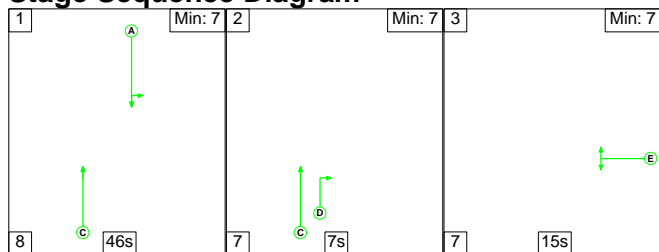
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	9.4	3.4	0.0	12.8	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	9.4	3.4	0.0	12.8	-	-	-	-
1/1	616	616	-	-	-	2.5	0.8	-	3.3	19.0	10.6	0.8	11.4
1/2	616	616	-	-	-	2.5	0.8	-	3.3	19.0	10.6	0.8	11.4
2/1	180	180	-	-	-	1.7	0.7	-	2.5	49.6	4.2	0.7	4.9
3/1	603	603	-	-	-	1.1	0.4	-	1.5	8.9	6.9	0.4	7.3
3/2	603	603	-	-	-	1.1	0.4	-	1.5	8.9	6.9	0.4	7.3
3/3	56	56	-	-	-	0.6	0.3	-	0.9	55.8	1.3	0.3	1.6
4/1	1293	1293	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	134	134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1247	1247	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		48.1	Total Delay for Signalled Lanes (pcuHr):		12.84	Cycle Time (s): 90				
			PRC Over All Lanes (%):		48.1	Total Delay Over All Lanes(pcuHr):		12.84					

Full Input Data And Results

Scenario 27: 'ip2037HG' (FG27: 'ip2037HG', Plan 1: 'normal')

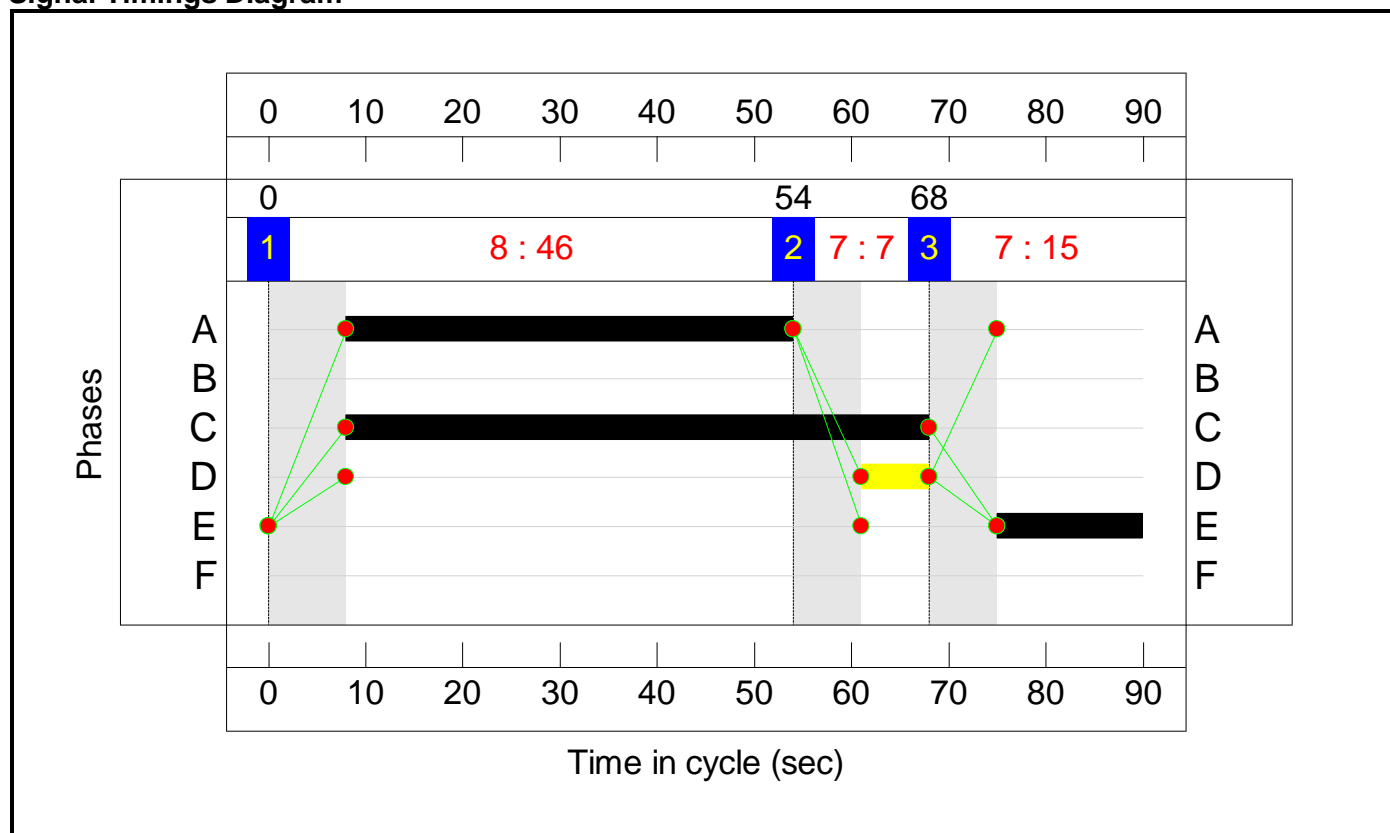
Stage Sequence Diagram



Stage Timings


Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

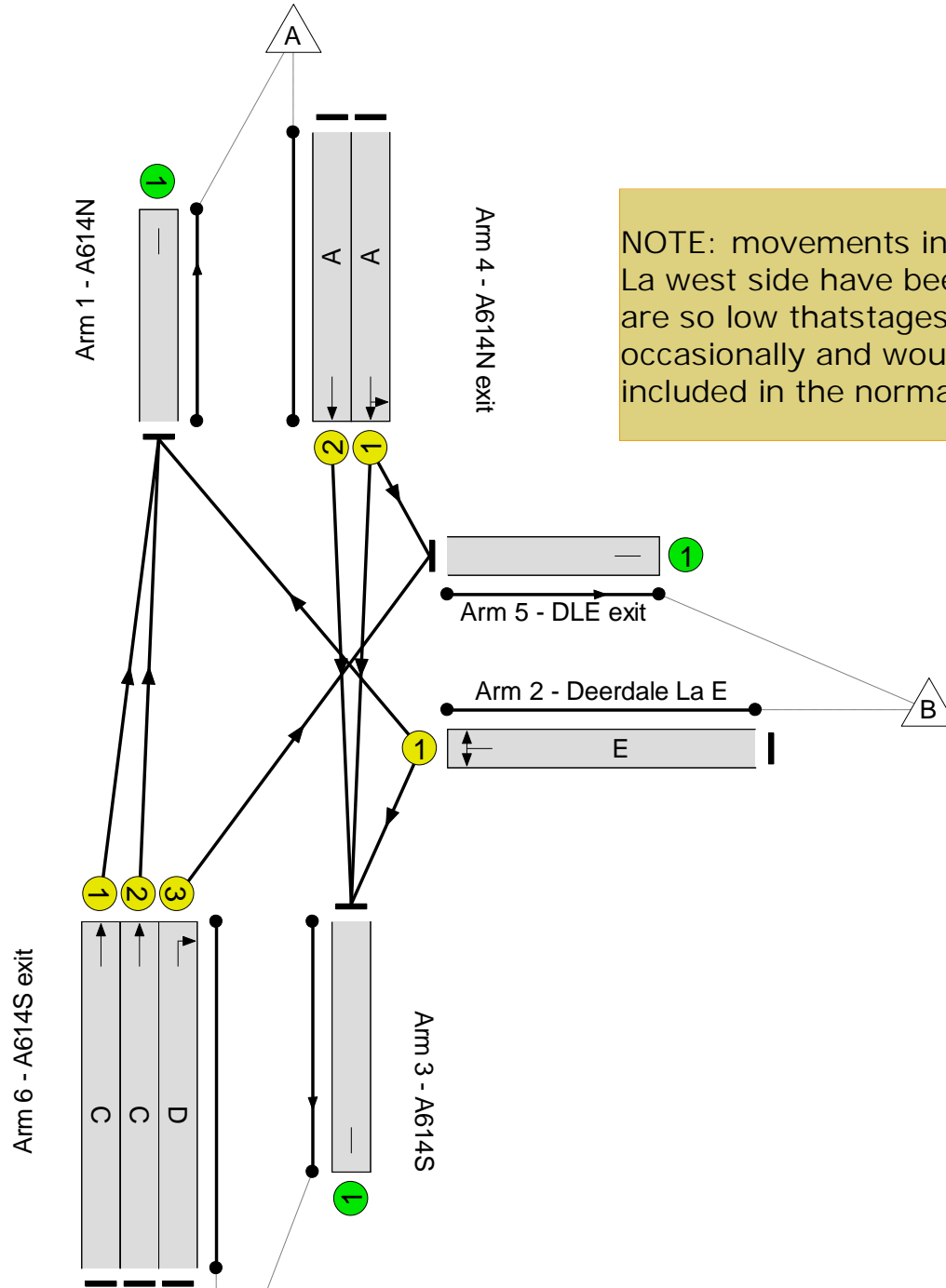
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 A614/ Deerdale Lane  
PRC: 114.9 %  
Total Traffic Delay: 7.8 pcuHr



NOTE: movements into and out of Deerdale La west side have been discounted - they are so low that stages will call only very occasionally and would skew the results if included in the normal stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>41.9%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>41.9%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	410	1900	992	41.3%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	410	1900	992	41.3%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	15	-	134	1800	320	41.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	373	1900	1288	29.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	373	1900	1288	29.0%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	58	1800	160	36.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	815	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	127	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	816	Inf	Inf	0.0%

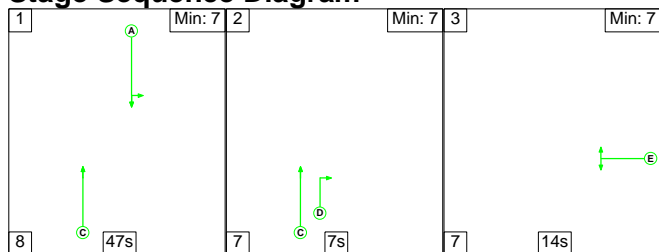
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	0	0	0	6.0	1.8	0.0	7.8	-	-	-	-
<b>A614/ Deerdale Lane</b>	-	-	0	0	0	6.0	1.8	0.0	7.8	-	-	-	-
1/1	410	410	-	-	-	1.5	0.4	-	1.8	16.2	6.2	0.4	6.5
1/2	410	410	-	-	-	1.5	0.4	-	1.8	16.2	6.2	0.4	6.5
2/1	134	134	-	-	-	1.2	0.4	-	1.6	42.5	2.9	0.4	3.3
3/1	373	373	-	-	-	0.6	0.2	-	0.8	7.8	3.7	0.2	3.9
3/2	373	373	-	-	-	0.6	0.2	-	0.8	7.8	3.7	0.2	3.9
3/3	58	58	-	-	-	0.6	0.3	-	0.9	56.2	1.4	0.3	1.6
4/1	815	815	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	127	127	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	816	816	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%):		114.9	Total Delay for Signalled Lanes (pcuHr):		7.79	Cycle Time (s): 90				
			PRC Over All Lanes (%):		114.9	Total Delay Over All Lanes(pcuHr):		7.79					

Full Input Data And Results

Scenario 28: 'op2037HG' (FG28: 'op2037HG', Plan 1: 'normal')

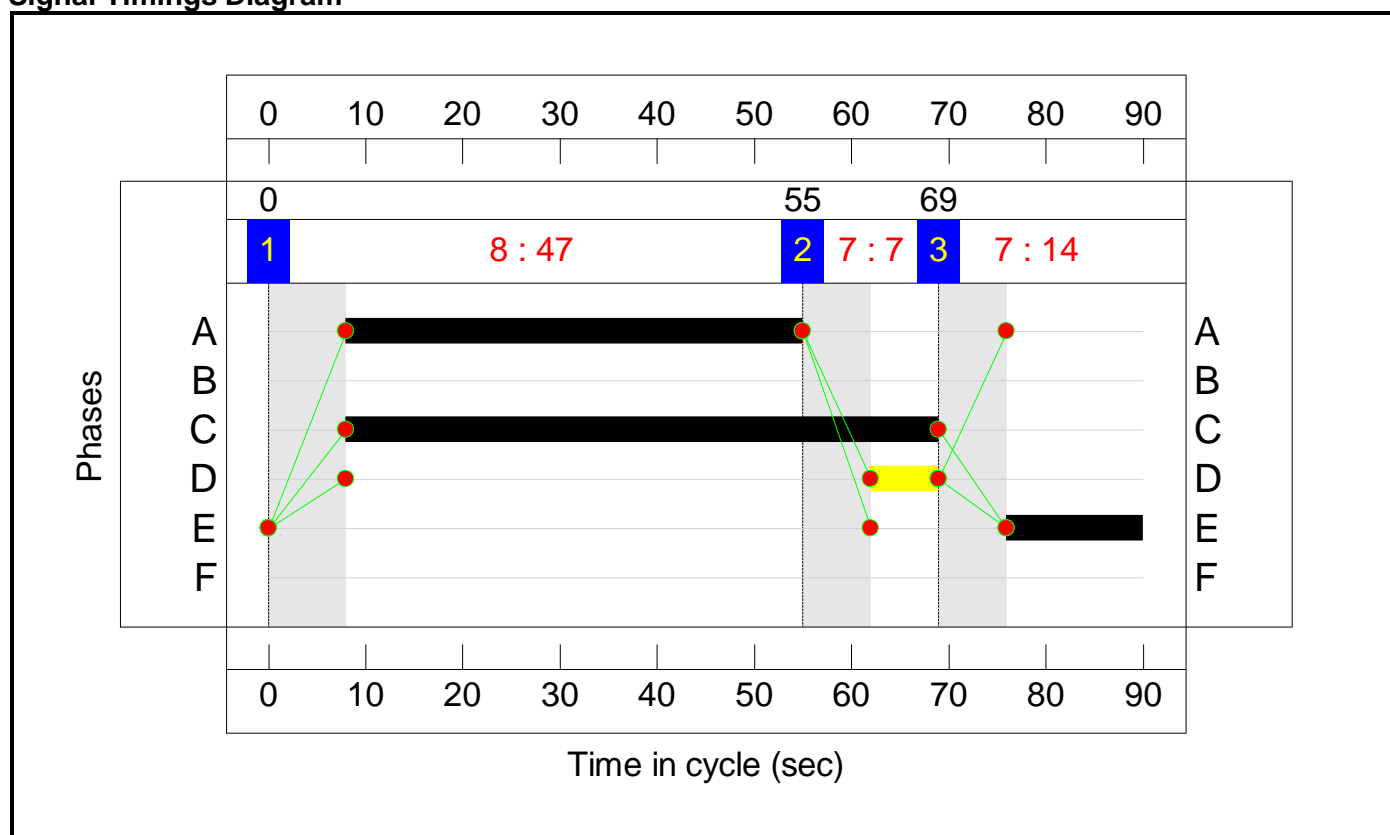
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	47	7	14
Change Point	0	55	69

Signal Timings Diagram

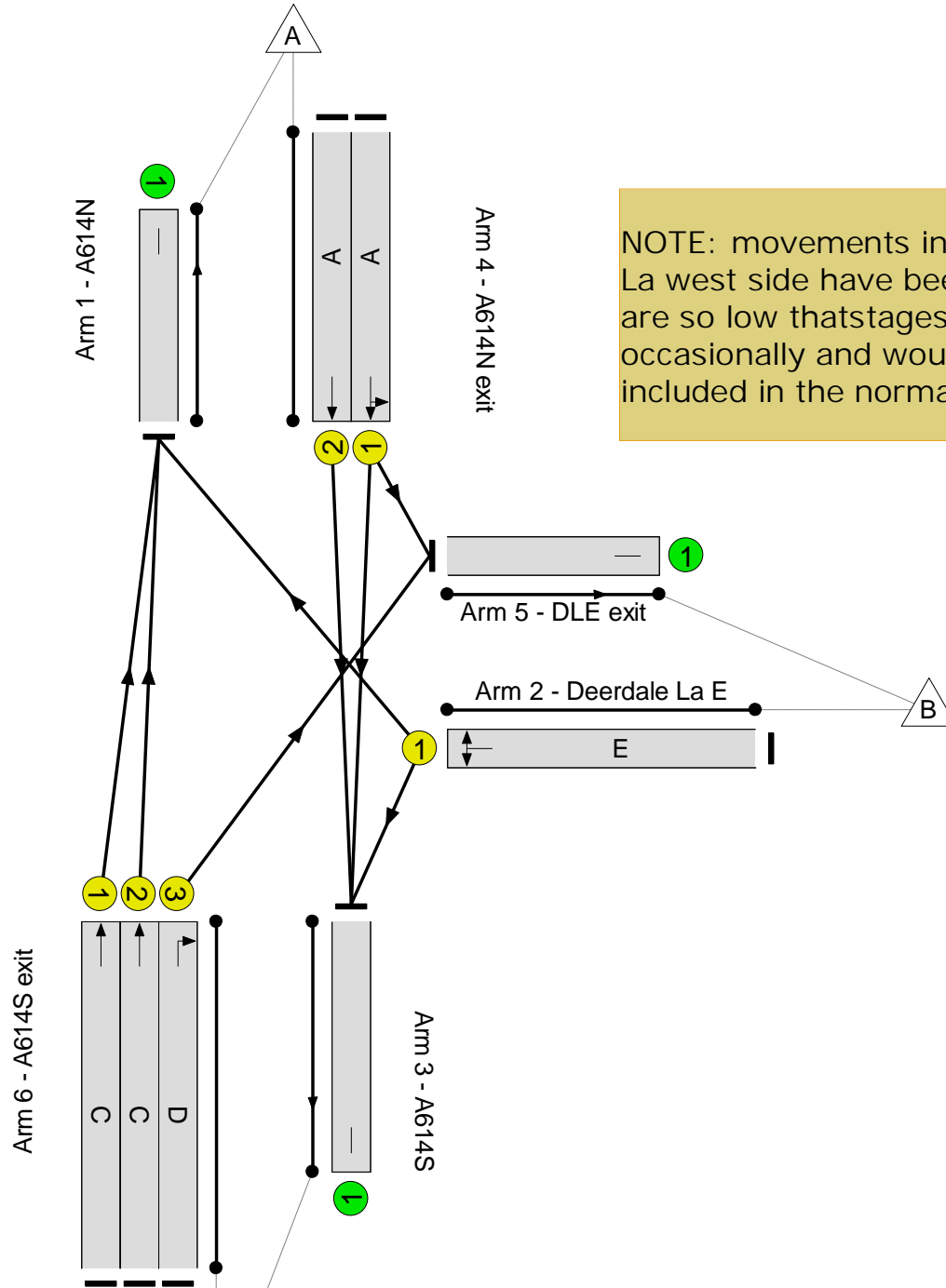




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

A614/ Deerdale Lane  
PRC: 2124.4 %  
Total Traffic Delay: 0.6 pcuHr



Full Input Data And Results

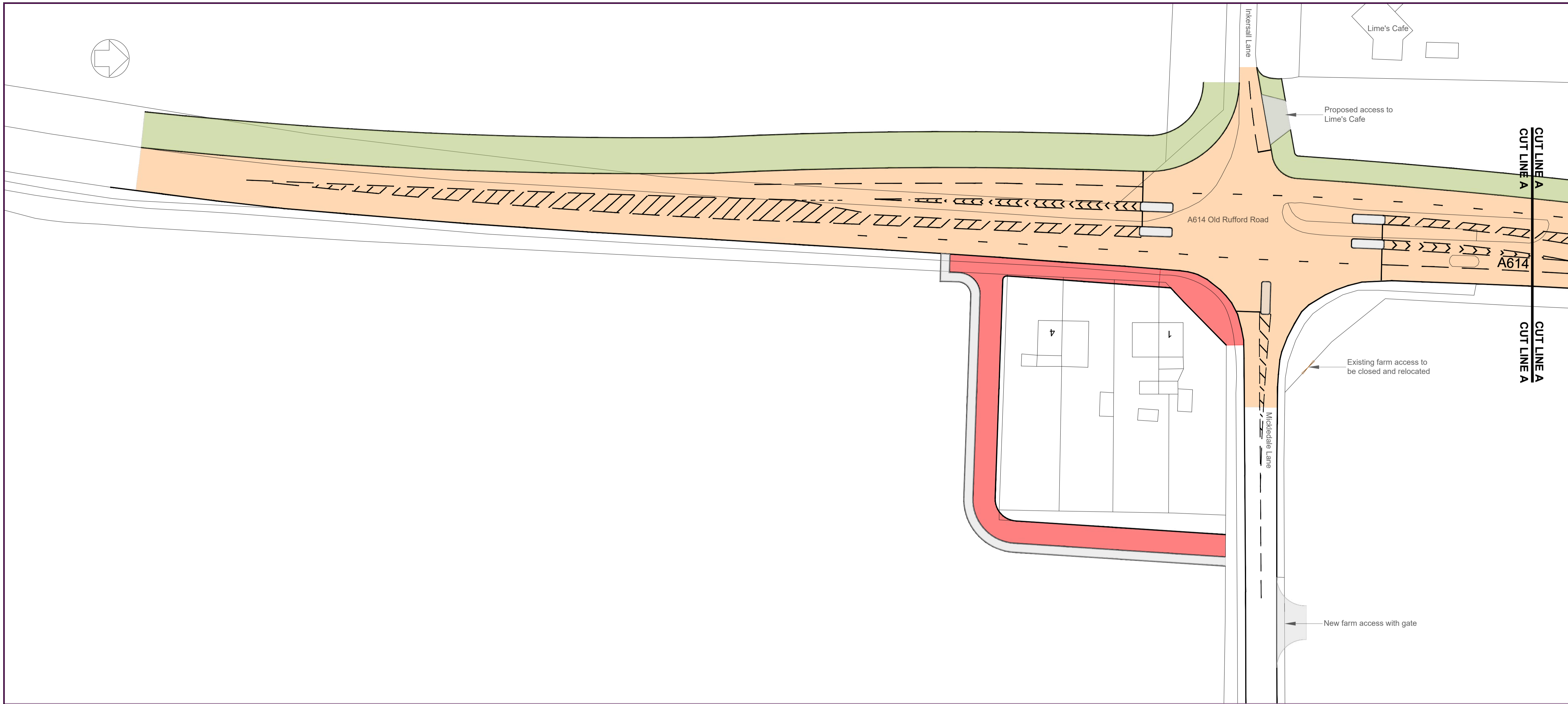
**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Deerdale Lane - minor moves removed 2 lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>4.0%</b>
<b>A614/ Deerdale Lane</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>4.0%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	47	-	39	1900	1013	3.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	47	-	41	1900	1013	4.0%
2/1	Deerdale La E Right Left	U	N/A	N/A	E		1	14	-	12	1800	300	4.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	37	1900	1309	2.8%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	36	1900	1309	2.8%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	6	1800	160	3.8%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	80	Inf	Inf	0.0%
5/1	DLE exit	U	N/A	N/A	-		-	-	-	13	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	78	Inf	Inf	0.0%

Full Input Data And Results

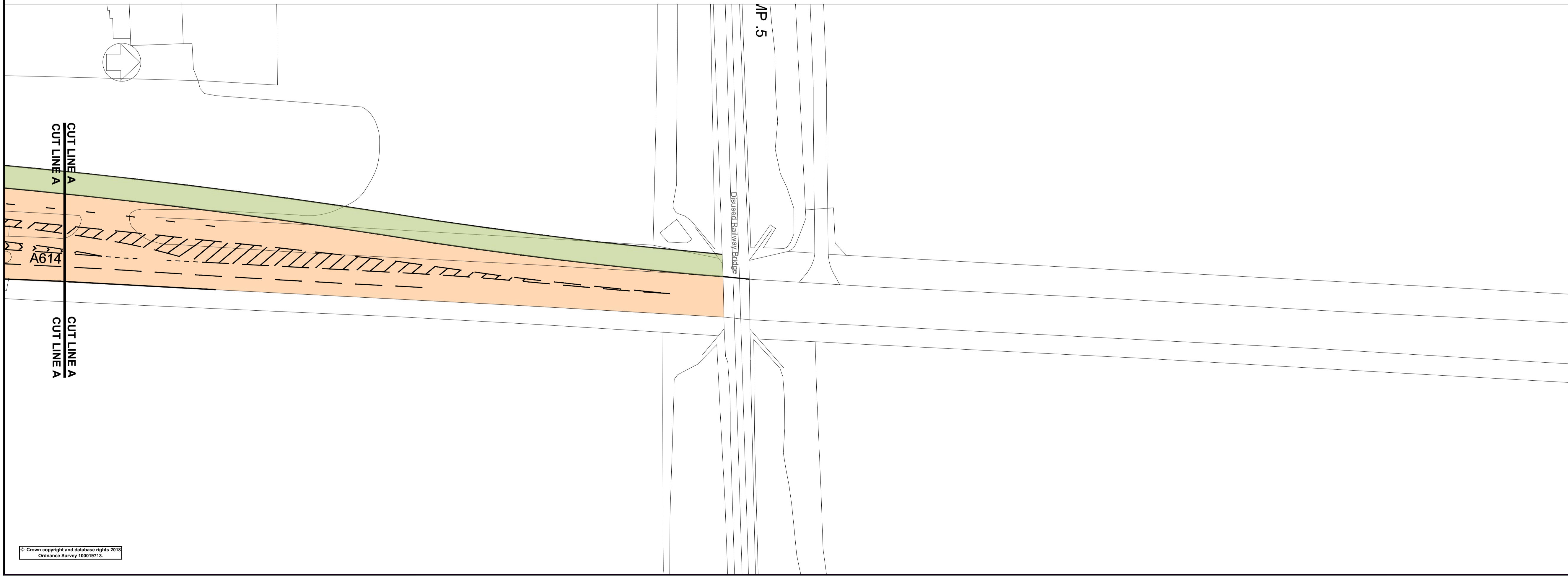
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Deerdale Lane - minor moves removed 2 lane	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
A614/ Deerdale Lane	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
1/1	39	39	-	-	-	0.1	0.0	-	0.1	11.9	0.5	0.0	0.5
1/2	41	41	-	-	-	0.1	0.0	-	0.1	11.9	0.5	0.0	0.5
2/1	12	12	-	-	-	0.1	0.0	-	0.1	37.9	0.2	0.0	0.3
3/1	37	37	-	-	-	0.0	0.0	-	0.1	5.9	0.3	0.0	0.3
3/2	36	36	-	-	-	0.0	0.0	-	0.1	5.9	0.3	0.0	0.3
3/3	6	6	-	-	-	0.1	0.0	-	0.1	49.5	0.1	0.0	0.2
4/1	80	80	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	13	13	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	78	78	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Deerdale Lane			PRC for Signalled Lanes (%): 2124.4		PRC Over All Lanes (%): 2124.4		Total Delay for Signalled Lanes (pcuHr): 0.59		Total Delay Over All Lanes(pcuHr): 0.59		Cycle Time (s): 90		

# Appendix U – Mickledale Lane Scheme Drawing and PICADY/LINSIG Outputs



- NOTES**
1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
  2. Do not scale from this drawing.
  3. All measurements are given in metres unless otherwise stated.
  4. This drawing shows the draft general arrangement for the proposed upgrade of the existing right turn ghost island junction arrangement to a signalised junction. Tracking movements have been included on this drawing to show the relevant and suggested arrangements for access and egress to the 4 houses SE of the junction and to the Lime's Cafe. These proposals are only indicative in nature and actual arrangements are to be confirmed following further discussions with affected property owners, affected land owners, AIU, traffic signals and the District Manager.
  5. The existing carriageway is to be widened to accommodate additional lanes and traffic islands. It is suggested the widening is restricted to the western side. The adjoining land affected is of agricultural and car park (Lime's Cafe) use.
  6. New verges up to 3.0m wide are to be constructed alongside the carriageway widening, affected underground services could be diverted in to these areas. These areas of private land are to be acquired by the Local Highway Authority for the proposed highway improvements.

- KEY**
- Carriageway Construction
  - Proposed Traffic Islands
  - Footway Construction
  - Proposed Verges
  - Proposed Access Road for the 4 Properties



Rev.	Description	Drawn	Ch'kd	Auth	Date
Project					
<b>A614/A6097 CORRIDOR IMPROVEMENTS MICKLEDALE LANE JUNCTION</b>					
Status		Project No.			
FOR INFO.		HW20949			
Drawing Title					
<b>GENERAL ARRANGEMENT</b>					
Scale		Drawn		Date	
1:500 @A1		JD		11.02.20	
		Auth		Date	
		23/03/20			
Drawing No.		Rev.			
HW20949/GEN/M003/001		0			

DRAFT

in partnership with

**via** **Nottinghamshire  
County Council**

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Bilthorpe Depot, Bilthorpe Business Park, Bilthorpe,  
Nottinghamshire, NG22 8ST

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# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462  
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+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** V4.1\_J1 A614-mickle existing.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\3-Mickledale

**Report generation date:** 07/12/2020 09:37:23

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2037, AM
- »2037, PM
- »2037, IP
- »2037, OP
- »2037 final, AM
- »2037 final, PM
- »2037 final, IP
- »2037 final, OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP
- »2037LG, AM
- »2037LG, PM
- »2037LG, IP
- »2037LG, OP
- »2023HG, AM
- »2023HG, PM
- »2023HG, IP
- »2023G, OP
- »2037HG, AM
- »2037HG, PM
- »2037HG, IP
- »2037HG, OP

### Summary of junction performance

	AM							PM							IP							OP						
	Set ID	Queue	95%Q	Delay	RF	LOS	Junct	Junct	Networ	Set ID	Queue	95%Q	Delay	RF	LOS	Junct	Junct	Networ	Set ID	Queue	95%Q	Delay	RF	LOS	Junct	Junct	Networ	

	e (PCU)	uee (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity	e (PCU)	uee (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity	e (PCU)	uee (PCU)	y (s)	ion Delay (s)	ion LOS	k Residual Capacity
<b>2023</b>																		
Stream B-CD	0.6	3.0	13.53	0.39	B		0.5	2.0	11.20	0.32	B		0.2	1.8	8.40	0.18	A	
Stream B-AD	0.4	1.5	3.85	0.26	D	1%	0.3	1.3	3.31	0.22	D	1%	0.2	0.5	6.02	0.14	C	43%
Stream A-BCD	0.0	0.5	8.59	0.00	A	1.86	0.0	0.5	9.01	0.01	A	2.00	0.0	0.5	6.90	0.00	A	1.51
Stream D-ABC	0.0	0.5	1.95	0.03	C	[Stream B-A D]	0.0	~1	0.00	0.00	A	[Stream B-A D]	0.0	0.5	1.26	0.03	B	[Stream B-A D]
Stream C-ABD	0.2	0.5	1.01	0.17	B		0.6	2.7	12.35	0.36	B		0.2	0.5	8.56	0.17	A	
<b>2037</b>																		
Stream B-CD	0.7	4.4	14.57	0.41	B		0.5	2.2	11.61	0.33	B		0.3	1.2	8.57	0.19	A	
Stream B-AD	0.4	1.3	3.92	0.29	E	-2%	0.3	1.4	3.61	0.24	E	-1%	0.2	0.5	6.67	0.15	C	39%
Stream A-BCD	0.0	0.5	8.77	0.00	A	1.99	0.0	0.5	9.02	0.01	A	2.07	0.0	0.5	6.98	0.00	A	1.55
Stream D-ABC	0.0	0.5	2.14	0.04	C	[Stream B-A D]	0.0	~1	0.00	0.00	A	[Stream B-A D]	0.0	0.5	1.32	0.04	B	[Stream B-A D]
Stream C-ABD	0.2	0.9	1.03	0.18	B		0.6	2.8	12.66	0.37	B		0.2	0.8	8.70	0.17	A	
<b>2037 final</b>																		
Stream B-CD	1.2	6.3	25.34	0.55	D	3.47	0.7	3.5	16.45	0.42	C	-1.2%	0.3	1.3	9.21	0.20	A	2.6%
Stream	1.1	4.7	9.5	0.0	F	[Stream	0.8	3.0	8.0	0.0	F	2.90	0.2	1.1	1.9	0.0	C	1.57
<b>2037 final</b>																		
Stream B-CD	1.2	6.3	25.34	0.55	D	3.47	0.7	3.5	16.45	0.42	C	-1.2%	0.3	1.3	9.21	0.20	A	2.6%
Stream	1.1	4.7	9.5	0.0	F	[Stream	0.8	3.0	8.0	0.0	F	2.90	0.2	1.1	1.9	0.0	C	1.57



B-AD			50	54			am B-A D]			24	45			am B-A D]			39	18			m B-A D]			01	01					
Stream A-BCD	00	05	93	00	A				00	05	10	00	B			00	05	72	00	A			00	01	00	00	A			
Stream D-ABC	01	05	31	00	D				00	~1	00	00	A			00	05	14	00	B			00	~1	00	00	A			
Stream C-ABD	03	12	11	02	B				03	34	10	04	B			02	11	91	01	A			00	05	52	02	A			

2023LG

Stream B-CD	06	26	12	03	B				04	16	10	02	B			02	06	81	01	A			00	05	47	05	A						
Stream B-AD	03	03	28	02	D		6%	[Stream B-A D]	02	10	27	02	D		8%	02	05	05	10	C		51%	00	05	69	06	A						
Stream A-BCD	D13	00	05	83	00	A	1.68	A	D14	00	05	90	00	A	1.81	A	D15	00	05	67	00	A	1.46	A	D16	00	~1	00	00	A	0.77	A	900%
Stream D-ABC	00	05	17	00	C				00	~1	00	00	A			00	05	12	00	B			00	~1	00	00	A						
Stream C-ABD	02	05	94	01	A				05	23	11	03	B			02	05	83	03	A			00	05	51	08	A						

2037LG

Stream B-CD	05	24	11	08	B				04	15	94	02	A			02	05	80	03	A			00	05	47	05	A						
Stream B-AD	03	07	26	02	D		8%	[Stream B-A D]	02	06	05	04	D		10%	02	05	04	07	B		54%	00	05	69	06	A						
Stream A-BCD	D17	00	05	83	00	A	1.59	A	D18	00	05	90	00	A	1.74	A	D19	00	05	67	00	A	1.44	A	D20	00	~1	00	00	A	0.78	A	900%
Stream D-ABC	00	05	17	00	C				00	~1	00	00	A			00	05	12	04	B			00	~1	00	00	A						
Stream C-ABD	02	05	94	01	A				05	21	11	03	B			02	05	82	07	A			00	05	51	08	A						

2023HG

Stream	D21	08	37	15	00	C	2.16	A	-4%	D22	06	26	12	00	B	2.29	A	-4%	D23	03	12	80	00	A	1.58	A	36%						
--------	-----	----	----	----	----	---	------	---	-----	-----	----	----	----	----	---	------	---	-----	-----	----	----	----	----	---	------	---	-----	--	--	--	--	--	--



There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

## File summary

### File Description

<b>Title</b>	A614/ A617 impts
<b>Location</b>	A614/ Mickledale Lane
<b>Site number</b>	
<b>Date</b>	22/11/2017
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	NCCADMIN\br18
<b>Description</b>	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

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The junction diagram reflects the last run of Junctions.

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓
D10	2037 final	PM	ONE HOUR	16:45	18:15	15	✓
D11	2037 final	IP	ONE HOUR	12:45	14:15	15	✓
D12	2037 final	OP	ONE HOUR	22:45	00:15	15	✓
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓
D24	2023G	OP	ONE HOUR	22:45	00:15	15	✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

## Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2023, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

# Junction Network

## Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.86	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	1	Stream B-AD

# Arms

## Arms

Arm	Name	Description	Arm type
A	A614N		Major
B	Mickledale Lane E		Minor
C	A614S		Major
D	Mickledale Lane W		Minor

## Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	10.00		✓	3.00	150.0	✓	8.00
C	10.00		✓	3.00	150.0	✓	20.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

## Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare		10.00	8.00	5.00	3.90	3.70		1.00	60	85
D	One lane	3.00								150	65

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
A-D	718	-	-	-	-	-	-	0.230	0.328	0.230	-	-	-
B-A	538	0.081	0.205	0.205	-	-	-	0.129	0.292	-	0.205	0.205	0.102
B-C	768	0.097	0.246	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	611	0.092	0.232	0.232	-	-	-	0.146	0.332	0.146	-	-	-
B-D, offside lane	538	0.081	0.205	0.205	-	-	-	0.129	0.292	0.129	-	-	-
C-B	718	0.230	0.230	0.328	-	-	-	-	-	-	-	-	-
D-A	665	-	-	-	-	-	-	0.213	-	0.084	-	-	-
D-B, nearside lane	560	0.134	0.134	0.304	-	-	-	0.213	0.213	0.084	-	-	-
D-B, offside lane	560	0.134	0.134	0.304	-	-	-	0.213	0.213	0.084	-	-	-
D-C	560	-	0.134	0.304	0.106	0.213	0.213	0.213	0.213	0.084	-	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

# Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1046	100.000
B		ONE HOUR	✓	192	100.000
C		ONE HOUR	✓	983	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	33	1012	1
	B	35	0	156	1
	C	899	69	0	15
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.39	13.53	0.6	3.0	B	144	216
B-AD	0.26	33.85	0.4	1.5	D	32	49
A-BCD	0.00	8.59	0.0	0.5	A	0.92	1
A-B						30	45
A-C						929	1393
D-ABC	0.03	19.59	0.0	0.5	C	6	8
C-ABD	0.17	10.01	0.2	0.5	B	63	95
C-D						14	21
C-A						825	1237

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	118	29	562	0.210	117	0.0	0.3	8.235	A
B-AD	27	7	275	0.097	26	0.0	0.1	14.755	B
A-BCD	0.75	0.19	543	0.001	0.75	0.0	0.0	7.300	A
A-B	25	6			25				
A-C	762	190			762				
D-ABC	5	1	336	0.013	4	0.0	0.0	11.440	B
C-ABD	52	13	537	0.097	52	0.0	0.1	7.774	A
C-D	11	3			11				
C-A	677	169			677				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	141	35	517	0.272	140	0.3	0.4	9.736	A
B-AD	32	8	222	0.144	32	0.1	0.2	19.271	C
A-BCD	0.90	0.22	509	0.002	0.90	0.0	0.0	7.794	A
A-B	30	7			30				
A-C	910	227			910				
D-ABC	5	1	281	0.019	5	0.0	0.0	13.752	B
C-ABD	62	16	502	0.124	62	0.1	0.1	8.584	A
C-D	13	3			13				
C-A	808	202			808				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	172	43	445	0.388	171	0.4	0.6	13.375	B
B-AD	39	10	148	0.264	38	0.2	0.3	33.371	D
A-BCD	1	0.28	462	0.002	1	0.0	0.0	8.593	A
A-B	36	9			36				
A-C	1114	279			1114				
D-ABC	7	2	200	0.033	7	0.0	0.0	19.552	C
C-ABD	76	19	453	0.168	76	0.1	0.2	10.000	A
C-D	17	4			17				
C-A	990	247			990				

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	172	43	444	0.389	172	0.6	0.6	13.528	B
B-AD	39	10	147	0.264	39	0.3	0.4	33.852	D
A-BCD	1	0.28	462	0.002	1	0.0	0.0	8.595	A
A-B	36	9			36				
A-C	1114	279			1114				

D-ABC	7	2	200	0.033	7	0.0	0.0	19.590	C
C-ABD	76	19	453	0.168	76	0.2	0.2	10.012	B
C-D	17	4			17				
C-A	990	247			990				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	141	35	516	0.273	142	0.6	0.4	9.831	A
B-AD	32	8	222	0.144	33	0.4	0.2	19.482	C
A-BCD	0.90	0.22	509	0.002	0.90	0.0	0.0	7.797	A
A-B	30	7			30				
A-C	910	227			910				
D-ABC	5	1	281	0.019	5	0.0	0.0	13.773	B
C-ABD	62	16	502	0.124	62	0.2	0.1	8.598	A
C-D	13	3			13				
C-A	808	202			808				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	118	29	561	0.210	118	0.4	0.3	8.301	A
B-AD	27	7	274	0.097	27	0.2	0.1	14.849	B
A-BCD	0.75	0.19	543	0.001	0.75	0.0	0.0	7.303	A
A-B	25	6			25				
A-C	762	190			762				
D-ABC	5	1	335	0.013	5	0.0	0.0	11.457	B
C-ABD	52	13	537	0.097	52	0.1	0.1	7.793	A
C-D	11	3			11				
C-A	677	169			677				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.27	0.00	0.00	0.27	0.27			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.38	0.00	0.00	0.38	0.38			N/A	N/A
B-AD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.02	0.02	0.26	0.48	0.50			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

#### 08:15 - 08:30



Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.63	0.03	0.26	0.63	0.63			N/A	N/A
B-AD	0.35	0.03	0.27	0.49	1.04			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.21	0.03	0.27	0.49	0.51			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.64	0.03	0.31	1.51	3.02			N/A	N/A
B-AD	0.36	0.03	0.33	1.20	1.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.21	0.03	0.28	0.50	0.52			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.39	0.03	0.27	0.48	0.51			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.27	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.11	0.03	0.25	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

## 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.00	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
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A-C						824	1236
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.36	12.35	0.6	2.7	B	141	212
C-D						4	6
C-A						860	1290

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	105	26	586	0.180	105	0.0	0.2	7.619	A
B-AD	22	5	269	0.081	21	0.0	0.1	14.808	B
A-BCD	2	0.38	517	0.003	1	0.0	0.0	7.674	A
A-B	44	11			44				
A-C	676	169			676				
D-ABC	0	0	317	0.000	0	0.0	0.0	0.000	A
C-ABD	116	29	552	0.210	115	0.0	0.3	8.617	A
C-D	3	0.75			3				
C-A	705	176			705				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	126	31	546	0.230	126	0.2	0.3	8.727	A
B-AD	26	7	216	0.121	26	0.1	0.1	19.288	C
A-BCD	2	0.45	478	0.004	2	0.0	0.0	8.314	A
A-B	52	13			52				
A-C	807	202			807				
D-ABC	0	0	261	0.000	0	0.0	0.0	0.000	A
C-ABD	138	35	520	0.266	138	0.3	0.4	9.881	A
C-D	4	0.90			4				
C-A	842	211			842				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	154	39	483	0.319	153	0.3	0.5	11.120	B
B-AD	32	8	142	0.224	31	0.1	0.3	32.907	D
A-BCD	2	0.55	424	0.005	2	0.0	0.0	9.387	A
A-B	64	16			64				
A-C	989	247			989				
D-ABC	0	0	181	0.000	0	0.0	0.0	0.000	A
C-ABD	170	42	476	0.356	169	0.4	0.6	12.285	B
C-D	4	1			4				
C-A	1032	258			1032				

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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B-CD	154	39	482	0.320	154	0.5	0.5	11.197	B
B-AD	32	8	142	0.225	32	0.3	0.3	33.307	D
A-BCD	2	0.55	424	0.005	2	0.0	0.0	9.393	A
A-B	64	16			64				
A-C	989	247			989				
D-ABC	0	0	181	0.000	0	0.0	0.0	0.000	A
C-ABD	170	42	476	0.356	170	0.6	0.6	12.345	B
C-D	4	1			4				
C-A	1032	258			1032				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	126	31	545	0.231	127	0.5	0.3	8.778	A
B-AD	26	7	216	0.121	27	0.3	0.1	19.476	C
A-BCD	2	0.45	478	0.004	2	0.0	0.0	8.323	A
A-B	52	13			52				
A-C	807	202			807				
D-ABC	0	0	261	0.000	0	0.0	0.0	0.000	A
C-ABD	138	35	520	0.266	139	0.6	0.4	9.942	A
C-D	4	0.90			4				
C-A	842	211			842				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	105	26	585	0.180	106	0.3	0.2	7.667	A
B-AD	22	5	269	0.081	22	0.1	0.1	14.901	B
A-BCD	2	0.38	517	0.003	2	0.0	0.0	7.684	A
A-B	44	11			44				
A-C	676	169			676				
D-ABC	0	0	317	0.000	0	0.0	0.0	0.000	A
C-ABD	116	29	552	0.210	116	0.4	0.3	8.676	A
C-D	3	0.75			3				
C-A	705	176			705				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.00	0.00	0.22	0.22			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.28	0.00	0.00	0.28	0.28			N/A	N/A

#### 17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.30	0.00	0.00	0.30	0.30			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A

D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.38	0.00	0.00	0.38	0.38			N/A	N/A

### 17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.47	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.28	0.03	0.27	0.49	0.97			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.57	0.03	0.27	0.57	0.57			N/A	N/A

### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.47	0.03	0.32	1.42	1.99			N/A	N/A
B-AD	0.29	0.03	0.31	0.99	1.29			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.58	0.03	0.32	1.47	2.69			N/A	N/A

### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.31	0.00	0.00	0.31	0.31			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.39	0.00	0.00	0.39	0.39			N/A	N/A

### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.28	0.00	0.00	0.28	0.28			N/A	N/A

# 2023, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
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1	untitled	Crossroads	Two-way		1.51	A
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## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	43	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	645	100.000
B		ONE HOUR	✓	133	100.000
C		ONE HOUR	✓	696	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	42	602	1
	B	36	0	94	3
	C	602	84	0	10
	D	2	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
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B-CD	0.18	8.40	0.2	1.0	A	88	132
B-AD	0.14	16.02	0.2	0.5	C	34	51
A-BCD	0.00	6.90	0.0	0.5	A	0.92	1
A-B						39	58
A-C						552	829
D-ABC	0.03	12.67	0.0	0.5	B	8	12
C-ABD	0.17	8.56	0.2	0.5	A	77	116
C-D						9	14
C-A						552	829

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	72	18	644	0.112	71	0.0	0.1	6.895	A
B-AD	28	7	371	0.076	28	0.0	0.1	11.493	B
A-BCD	0.75	0.19	592	0.001	0.75	0.0	0.0	6.213	A
A-B	32	8			32				
A-C	453	113			453				
D-ABC	7	2	404	0.017	7	0.0	0.0	9.852	A
C-ABD	63	16	607	0.104	63	0.0	0.1	7.274	A
C-D	8	2			8				
C-A	453	113			453				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	86	21	617	0.139	86	0.1	0.2	7.446	A
B-AD	34	8	336	0.100	33	0.1	0.1	13.040	B
A-BCD	0.90	0.22	567	0.002	0.90	0.0	0.0	6.486	A
A-B	38	9			38				
A-C	541	135			541				
D-ABC	8	2	369	0.022	8	0.0	0.0	10.859	B
C-ABD	76	19	585	0.129	75	0.1	0.2	7.769	A
C-D	9	2			9				
C-A	541	135			541				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	105	26	576	0.183	105	0.2	0.2	8.384	A
B-AD	41	10	287	0.143	41	0.1	0.2	15.980	C
A-BCD	1	0.28	533	0.002	1	0.0	0.0	6.904	A
A-B	46	12			46				
A-C	663	166			663				
D-ABC	10	2	319	0.031	10	0.0	0.0	12.665	B
C-ABD	92	23	555	0.167	92	0.2	0.2	8.553	A
C-D	11	3			11				
C-A	663	166			663				

13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	105	26	576	0.183	105	0.2	0.2	8.396	A
B-AD	41	10	287	0.143	41	0.2	0.2	16.018	C
A-BCD	1	0.28	533	0.002	1	0.0	0.0	6.905	A
A-B	46	12			46				
A-C	663	166			663				
D-ABC	10	2	319	0.031	10	0.0	0.0	12.671	B
C-ABD	92	23	555	0.167	92	0.2	0.2	8.561	A
C-D	11	3			11				
C-A	663	166			663				

13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	86	21	616	0.140	86	0.2	0.2	7.463	A
B-AD	34	8	336	0.100	34	0.2	0.1	13.078	B
A-BCD	0.90	0.22	567	0.002	0.90	0.0	0.0	6.490	A
A-B	38	9			38				
A-C	541	135			541				
D-ABC	8	2	369	0.022	8	0.0	0.0	10.868	B
C-ABD	76	19	585	0.129	76	0.2	0.2	7.780	A
C-D	9	2			9				
C-A	541	135			541				

14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	72	18	644	0.112	72	0.2	0.1	6.917	A
B-AD	28	7	371	0.076	28	0.1	0.1	11.529	B
A-BCD	0.75	0.19	591	0.001	0.75	0.0	0.0	6.218	A
A-B	32	8			32				
A-C	453	113			453				
D-ABC	7	2	404	0.017	7	0.0	0.0	9.864	A
C-ABD	63	16	607	0.104	63	0.2	0.1	7.293	A
C-D	8	2			8				
C-A	453	113			453				

Queue Variation Results for each time segment

12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
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B-CD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.02	0.02	0.27	0.49	0.52			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.18	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.22	0.03	0.28	0.51	0.54			N/A	N/A

### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.03	0.30	0.54	1.04			N/A	N/A
B-AD	0.18	0.03	0.28	0.50	0.53			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.22	0.03	0.29	0.52	0.55			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

## 2023, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

## Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.78	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	63	100.000
B		ONE HOUR	✓	13	100.000
C		ONE HOUR	✓	68	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	4	59	0
	B	4	0	9	0
	C	59	8	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.80	0.0	0.5	A	8	12
B-AD	0.01	6.93	0.0	0.5	A	4	6
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						4	6
A-C						54	81
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.19	0.0	0.5	A	7	11
C-D						0.92	1
C-A						54	81

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	766	0.009	7	0.0	0.0	4.742	A
B-AD	3	0.75	532	0.006	3	0.0	0.0	6.805	A
A-BCD	0	0	1447	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	44	11			44				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	707	0.009	6	0.0	0.0	5.131	A
C-D	0.75	0.19			0.75				
C-A	44	11			44				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	763	0.011	8	0.0	0.0	4.765	A
B-AD	4	0.90	529	0.007	4	0.0	0.0	6.856	A
A-BCD	0	0	1442	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	53	13			53				
D-ABC	0	0	563	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.155	A
C-D	0.90	0.22			0.90				
C-A	53	13			53				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	760	0.013	10	0.0	0.0	4.798	A
B-AD	4	1	524	0.008	4	0.0	0.0	6.927	A
A-BCD	0	0	1436	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	65	16			65				
D-ABC	0	0	559	0.000	0	0.0	0.0	0.000	A
C-ABD	9	2	702	0.013	9	0.0	0.0	5.189	A

C-D	1	0.28			1				
C-A	65	16			65				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	760	0.013	10	0.0	0.0	4.798	A
B-AD	4	1	524	0.008	4	0.0	0.0	6.927	A
A-BCD	0	0	1436	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	65	16			65				
D-ABC	0	0	559	0.000	0	0.0	0.0	0.000	A
C-ABD	9	2	702	0.013	9	0.0	0.0	5.189	A
C-D	1	0.28			1				
C-A	65	16			65				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	763	0.011	8	0.0	0.0	4.768	A
B-AD	4	0.90	529	0.007	4	0.0	0.0	6.859	A
A-BCD	0	0	1442	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	53	13			53				
D-ABC	0	0	563	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.158	A
C-D	0.90	0.22			0.90				
C-A	53	13			53				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	766	0.009	7	0.0	0.0	4.742	A
B-AD	3	0.75	532	0.006	3	0.0	0.0	6.805	A
A-BCD	0	0	1447	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	44	11			44				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	707	0.009	6	0.0	0.0	5.133	A
C-D	0.75	0.19			0.75				
C-A	44	11			44				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

# 2037, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.99	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-2	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1085	100.000
B		ONE HOUR	✓	195	100.000
C		ONE HOUR	✓	1019	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	34	1050	1
	B	35	0	159	1
	C	932	71	0	16
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.41	14.57	0.7	3.4	B	146	220
B-AD	0.29	39.12	0.4	1.3	E	32	49
A-BCD	0.00	8.77	0.0	0.5	A	0.92	1
A-B						31	47
A-C						963	1445
D-ABC	0.04	21.43	0.0	0.5	C	6	8
C-ABD	0.18	10.34	0.2	0.9	B	65	98
C-D						15	22
C-A						855	1283

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	120	30	554	0.217	119	0.0	0.3	8.417	A
B-AD	27	7	265	0.101	26	0.0	0.1	15.360	C
A-BCD	0.75	0.19	537	0.001	0.75	0.0	0.0	7.387	A
A-B	26	6			26				
A-C	790	198			790				
D-ABC	5	1	326	0.014	4	0.0	0.0	11.791	B
C-ABD	53	13	531	0.101	53	0.0	0.1	7.909	A
C-D	12	3			12				
C-A	702	175			702				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	143	36	508	0.283	143	0.3	0.4	10.056	B
B-AD	32	8	210	0.152	32	0.1	0.2	20.535	C
A-BCD	0.90	0.22	501	0.002	0.90	0.0	0.0	7.912	A
A-B	31	8			31				
A-C	944	236			944				
D-ABC	5	1	269	0.020	5	0.0	0.0	14.394	B
C-ABD	64	16	494	0.129	64	0.1	0.2	8.780	A
C-D	14	4			14				
C-A	838	209			838				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	176	44	429	0.410	175	0.4	0.7	14.354	B
B-AD	39	10	133	0.293	38	0.2	0.4	38.352	E
A-BCD	1	0.28	453	0.002	1	0.0	0.0	8.771	A
A-B	37	9			37				
A-C	1156	289			1156				
D-ABC	7	2	184	0.036	7	0.0	0.0	21.390	C

C-ABD	78	20	444	0.176	78	0.2	0.2	10.328	B
C-D	18	4			18				
C-A	1026	257			1026				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	176	44	428	0.411	176	0.7	0.7	14.573	B
B-AD	39	10	133	0.294	39	0.4	0.4	39.121	E
A-BCD	1	0.28	452	0.002	1	0.0	0.0	8.773	A
A-B	37	9			37				
A-C	1156	289			1156				
D-ABC	7	2	183	0.036	7	0.0	0.0	21.435	C
C-ABD	78	20	444	0.176	78	0.2	0.2	10.343	B
C-D	18	4			18				
C-A	1026	257			1026				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	143	36	506	0.283	145	0.7	0.4	10.182	B
B-AD	32	8	210	0.152	33	0.4	0.2	20.823	C
A-BCD	0.90	0.22	501	0.002	0.90	0.0	0.0	7.916	A
A-B	31	8			31				
A-C	944	236			944				
D-ABC	5	1	268	0.020	5	0.0	0.0	14.427	B
C-ABD	64	16	494	0.129	64	0.2	0.2	8.798	A
C-D	14	4			14				
C-A	838	209			838				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	120	30	554	0.217	121	0.4	0.3	8.491	A
B-AD	27	7	265	0.101	27	0.2	0.1	15.467	C
A-BCD	0.75	0.19	537	0.001	0.75	0.0	0.0	7.393	A
A-B	26	6			26				
A-C	790	198			790				
D-ABC	5	1	325	0.014	5	0.0	0.0	11.810	B
C-ABD	53	13	530	0.101	54	0.2	0.1	7.930	A
C-D	12	3			12				
C-A	702	175			702				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.28	0.00	0.00	0.28	0.28			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A



**08:00 - 08:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.40	0.00	0.00	0.40	0.40			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.02	0.02	0.26	0.48	0.50			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

**08:15 - 08:30**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.69	0.03	0.26	0.69	0.69			N/A	N/A
B-AD	0.40	0.03	0.27	0.49	1.30			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.26	0.47	0.50			N/A	N/A
C-ABD	0.22	0.03	0.27	0.49	0.51			N/A	N/A

**08:30 - 08:45**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.70	0.03	0.31	1.03	3.37			N/A	N/A
B-AD	0.41	0.03	0.34	1.29	1.29			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.22	0.03	0.28	0.51	0.88			N/A	N/A

**08:45 - 09:00**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.41	0.03	0.30	0.79	1.16			N/A	N/A
B-AD	0.19	0.03	0.26	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

**09:00 - 09:15**

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.29	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.12	0.03	0.26	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

# 2037, PM

**Data Errors and Warnings**

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.07	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-1	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	979	100.000
B		ONE HOUR	✓	172	100.000
C		ONE HOUR	✓	1117	100.000
D		ONE HOUR	✓	3	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	58	919	2
	B	29	0	143	0
	C	957	156	0	4
	D	0	1	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.33	11.61	0.5	2.2	B	131	197
B-AD	0.24	36.11	0.3	1.4	E	27	40
A-BCD	0.01	9.52	0.0	0.5	A	2	3
A-B						53	80
A-C						843	1265
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.37	12.66	0.6	2.8	B	143	215
C-D						4	6
C-A						878	1317

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	108	27	582	0.185	107	0.0	0.2	7.718	A
B-AD	22	5	263	0.083	21	0.0	0.1	15.162	C
A-BCD	2	0.38	513	0.003	1	0.0	0.0	7.734	A
A-B	44	11			44				
A-C	692	173			692				
D-ABC	0	0	311	0.000	0	0.0	0.0	0.000	A
C-ABD	117	29	549	0.214	116	0.0	0.3	8.718	A
C-D	3	0.75			3				
C-A	720	180			720				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	129	32	541	0.238	128	0.2	0.3	8.884	A
B-AD	26	7	209	0.125	26	0.1	0.1	20.017	C
A-BCD	2	0.45	473	0.004	2	0.0	0.0	8.397	A
A-B	52	13			52				
A-C	826	207			826				
D-ABC	0	0	254	0.000	0	0.0	0.0	0.000	A
C-ABD	140	35	516	0.272	140	0.3	0.4	10.041	B
C-D	4	0.90			4				
C-A	860	215			860				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	157	39	475	0.332	157	0.3	0.5	11.516	B
B-AD	32	8	134	0.239	31	0.1	0.3	35.817	E
A-BCD	2	0.55	418	0.005	2	0.0	0.0	9.518	A
A-B	64	16			64				
A-C	1012	253			1012				
D-ABC	0	0	172	0.000	0	0.0	0.0	0.000	A

C-ABD	172	43	470	0.365	171	0.4	0.6	12.589	B
C-D	4	1			4				
C-A	1054	263			1054				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	157	39	474	0.332	157	0.5	0.5	11.610	B
B-AD	32	8	134	0.239	32	0.3	0.3	36.106	E
A-BCD	2	0.55	418	0.005	2	0.0	0.0	9.525	A
A-B	64	16			64				
A-C	1012	253			1012				
D-ABC	0	0	171	0.000	0	0.0	0.0	0.000	A
C-ABD	172	43	470	0.365	172	0.6	0.6	12.656	B
C-D	4	1			4				
C-A	1054	263			1054				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	129	32	540	0.238	129	0.5	0.3	8.951	A
B-AD	26	7	209	0.125	27	0.3	0.1	20.242	C
A-BCD	2	0.45	473	0.004	2	0.0	0.0	8.405	A
A-B	52	13			52				
A-C	826	207			826				
D-ABC	0	0	254	0.000	0	0.0	0.0	0.000	A
C-ABD	140	35	516	0.272	141	0.6	0.4	10.106	B
C-D	4	0.90			4				
C-A	860	215			860				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	108	27	581	0.185	108	0.3	0.2	7.768	A
B-AD	22	5	263	0.083	22	0.1	0.1	15.265	C
A-BCD	2	0.38	513	0.003	2	0.0	0.0	7.742	A
A-B	44	11			44				
A-C	692	173			692				
D-ABC	0	0	311	0.000	0	0.0	0.0	0.000	A
C-ABD	117	29	549	0.214	118	0.4	0.3	8.782	A
C-D	3	0.75			3				
C-A	720	180			720				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.28	0.00	0.00	0.28	0.28			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.31	0.00	0.00	0.31	0.31			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.39	0.00	0.00	0.39	0.39			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.50	0.03	0.26	0.50	0.50			N/A	N/A
B-AD	0.30	0.03	0.27	0.49	1.08			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.59	0.03	0.27	0.59	0.59			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.50	0.03	0.32	1.45	2.21			N/A	N/A
B-AD	0.31	0.03	0.32	1.08	1.35			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.60	0.03	0.31	1.47	2.81			N/A	N/A

17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.32	0.00	0.00	0.32	0.32			N/A	N/A
B-AD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.40	0.00	0.00	0.40	0.40			N/A	N/A

18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.29	0.03	0.26	0.47	0.50			N/A	N/A

# 2037, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.55	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	39	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	666	100.000
B		ONE HOUR	✓	136	100.000
C		ONE HOUR	✓	718	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	42	623	1
	B	37	0	96	3
	C	621	86	0	11
	D	2	2	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.19	8.57	0.3	1.2	A	90	134
B-AD	0.15	16.67	0.2	0.5	C	35	53
A-BCD	0.00	6.98	0.0	0.5	A	0.92	1
A-B						39	58
A-C						572	858
D-ABC	0.04	13.28	0.0	0.5	B	9	14
C-ABD	0.17	8.70	0.2	0.8	A	79	118
C-D						10	15
C-A						570	855

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	73	18	640	0.115	73	0.0	0.1	6.966	A
B-AD	29	7	365	0.079	29	0.0	0.1	11.712	B
A-BCD	0.75	0.19	588	0.001	0.75	0.0	0.0	6.255	A
A-B	32	8			32				
A-C	469	117			469				
D-ABC	8	2	395	0.019	7	0.0	0.0	10.121	B
C-ABD	65	16	603	0.107	64	0.0	0.1	7.344	A
C-D	8	2			8				
C-A	468	117			468				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	88	22	611	0.144	88	0.1	0.2	7.552	A
B-AD	34	9	329	0.105	34	0.1	0.1	13.384	B
A-BCD	0.90	0.22	562	0.002	0.90	0.0	0.0	6.541	A
A-B	38	9			38				
A-C	560	140			560				
D-ABC	9	2	358	0.025	9	0.0	0.0	11.238	B
C-ABD	77	19	581	0.133	77	0.1	0.2	7.862	A
C-D	10	2			10				
C-A	558	140			558				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	108	27	569	0.189	107	0.2	0.3	8.557	A
B-AD	42	11	279	0.151	42	0.1	0.2	16.626	C
A-BCD	1	0.28	527	0.002	1	0.0	0.0	6.980	A
A-B	46	12			46				
A-C	686	171			686				
D-ABC	11	3	306	0.036	11	0.0	0.0	13.277	B

C-ABD	95	24	550	0.172	94	0.2	0.2	8.694	A
C-D	12	3			12				
C-A	684	171			684				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	108	27	569	0.189	108	0.3	0.3	8.572	A
B-AD	42	11	279	0.151	42	0.2	0.2	16.667	C
A-BCD	1	0.28	527	0.002	1	0.0	0.0	6.981	A
A-B	46	12			46				
A-C	686	171			686				
D-ABC	11	3	306	0.036	11	0.0	0.0	13.285	B
C-ABD	95	24	550	0.172	95	0.2	0.2	8.703	A
C-D	12	3			12				
C-A	684	171			684				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	88	22	611	0.144	88	0.3	0.2	7.567	A
B-AD	34	9	329	0.105	35	0.2	0.1	13.423	B
A-BCD	0.90	0.22	562	0.002	0.90	0.0	0.0	6.545	A
A-B	38	9			38				
A-C	560	140			560				
D-ABC	9	2	358	0.025	9	0.0	0.0	11.249	B
C-ABD	77	19	581	0.133	78	0.2	0.2	7.876	A
C-D	10	2			10				
C-A	558	140			558				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	73	18	639	0.115	74	0.2	0.1	6.992	A
B-AD	29	7	365	0.079	29	0.1	0.1	11.755	B
A-BCD	0.75	0.19	587	0.001	0.75	0.0	0.0	6.257	A
A-B	32	8			32				
A-C	469	117			469				
D-ABC	8	2	395	0.019	8	0.0	0.0	10.136	B
C-ABD	65	16	603	0.107	65	0.2	0.1	7.362	A
C-D	8	2			8				
C-A	468	117			468				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A



13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.03	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.19	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.23	0.03	0.28	0.51	0.54			N/A	N/A

13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.03	0.31	0.65	1.16			N/A	N/A
B-AD	0.19	0.03	0.28	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.23	0.03	0.29	0.53	0.79			N/A	N/A

13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

# 2037, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.76	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	65	100.000
B		ONE HOUR	✓	13	100.000
C		ONE HOUR	✓	70	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	4	61	0
	B	4	0	9	0
	C	61	8	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.80	0.0	0.5	A	8	12
B-AD	0.01	6.94	0.0	0.5	A	4	6
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						4	6
A-C						56	84
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.19	0.0	0.5	A	7	11
C-D						0.92	1
C-A						56	84

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	765	0.009	7	0.0	0.0	4.744	A
B-AD	3	0.75	531	0.006	3	0.0	0.0	6.812	A
A-BCD	0	0	1447	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	46	11			46				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	707	0.009	6	0.0	0.0	5.134	A
C-D	0.75	0.19			0.75				
C-A	46	11			46				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	763	0.011	8	0.0	0.0	4.768	A
B-AD	4	0.90	528	0.007	4	0.0	0.0	6.864	A
A-BCD	0	0	1442	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	55	14			55				
D-ABC	0	0	563	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.159	A
C-D	0.90	0.22			0.90				
C-A	55	14			55				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	759	0.013	10	0.0	0.0	4.802	A
B-AD	4	1	523	0.008	4	0.0	0.0	6.937	A
A-BCD	0	0	1435	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	67	17			67				
D-ABC	0	0	558	0.000	0	0.0	0.0	0.000	A

C-ABD	9	2	702	0.013	9	0.0	0.0	5.193	A
C-D	1	0.28			1				
C-A	67	17			67				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	759	0.013	10	0.0	0.0	4.802	A
B-AD	4	1	523	0.008	4	0.0	0.0	6.937	A
A-BCD	0	0	1435	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	67	17			67				
D-ABC	0	0	558	0.000	0	0.0	0.0	0.000	A
C-ABD	9	2	702	0.013	9	0.0	0.0	5.193	A
C-D	1	0.28			1				
C-A	67	17			67				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	763	0.011	8	0.0	0.0	4.770	A
B-AD	4	0.90	528	0.007	4	0.0	0.0	6.864	A
A-BCD	0	0	1442	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	55	14			55				
D-ABC	0	0	563	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.161	A
C-D	0.90	0.22			0.90				
C-A	55	14			55				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	765	0.009	7	0.0	0.0	4.746	A
B-AD	3	0.75	531	0.006	3	0.0	0.0	6.814	A
A-BCD	0	0	1447	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	46	11			46				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	707	0.009	6	0.0	0.0	5.136	A
C-D	0.75	0.19			0.75				
C-A	46	11			46				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

# 2037 final, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		3.47	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1239	100.000
B		ONE HOUR	✓	201	100.000
C		ONE HOUR	✓	1124	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	38	1200	1
	B	39	0	161	1
	C	1035	73	0	16
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.55	25.34	1.2	6.2	D	148	222
B-AD	0.54	95.50	1.1	4.7	F	36	54
A-BCD	0.00	9.33	0.0	0.5	A	0.92	1
A-B						35	52
A-C						1101	1652
D-ABC	0.05	31.98	0.1	0.5	D	6	8
C-ABD	0.20	11.66	0.3	1.2	B	67	100
C-D						15	22
C-A						950	1425

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	122	30	521	0.233	120	0.0	0.3	9.128	A
B-AD	30	7	231	0.128	29	0.0	0.1	18.105	C
A-BCD	0.75	0.19	518	0.001	0.75	0.0	0.0	7.648	A
A-B	29	7			29				
A-C	903	226			903				
D-ABC	5	1	293	0.015	4	0.0	0.0	13.138	B
C-ABD	55	14	504	0.109	54	0.0	0.1	8.402	A
C-D	12	3			12				
C-A	779	195			779				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	145	36	464	0.313	145	0.3	0.5	11.466	B
B-AD	35	9	170	0.209	35	0.1	0.3	27.183	D
A-BCD	0.90	0.22	479	0.002	0.90	0.0	0.0	8.274	A
A-B	34	9			34				
A-C	1079	270			1079				
D-ABC	5	1	227	0.024	5	0.0	0.0	17.108	C
C-ABD	66	16	462	0.142	65	0.1	0.2	9.523	A
C-D	14	4			14				
C-A	930	233			930				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	178	45	333	0.534	175	0.5	1.1	22.879	C
B-AD	43	11	82	0.530	40	0.3	1.0	84.641	F
A-BCD	1	0.28	426	0.003	1	0.0	0.0	9.325	A
A-B	42	10			42				
A-C	1321	330			1321				
D-ABC	7	2	126	0.052	6	0.0	0.1	31.698	D

C-ABD	80	20	405	0.199	80	0.2	0.3	11.633	B
C-D	18	4			18				
C-A	1140	285			1140				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	178	45	322	0.553	178	1.1	1.2	25.341	D
B-AD	43	11	80	0.537	43	1.0	1.1	95.498	F
A-BCD	1	0.28	426	0.003	1	0.0	0.0	9.328	A
A-B	42	10			42				
A-C	1321	330			1321				
D-ABC	7	2	125	0.053	7	0.1	0.1	31.983	D
C-ABD	80	20	405	0.199	80	0.3	0.3	11.656	B
C-D	18	4			18				
C-A	1140	285			1140				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	145	36	460	0.316	148	1.2	0.5	11.901	B
B-AD	35	9	169	0.209	39	1.1	0.3	28.718	D
A-BCD	0.90	0.22	479	0.002	0.90	0.0	0.0	8.279	A
A-B	34	9			34				
A-C	1079	270			1079				
D-ABC	5	1	226	0.024	6	0.1	0.0	17.197	C
C-ABD	66	16	462	0.142	66	0.3	0.2	9.548	A
C-D	14	4			14				
C-A	930	233			930				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	122	30	520	0.234	122	0.5	0.3	9.235	A
B-AD	30	7	231	0.128	30	0.3	0.2	18.319	C
A-BCD	0.75	0.19	518	0.001	0.75	0.0	0.0	7.652	A
A-B	29	7			29				
A-C	903	226			903				
D-ABC	5	1	292	0.015	5	0.0	0.0	13.169	B
C-ABD	55	14	504	0.109	55	0.2	0.1	8.429	A
C-D	12	3			12				
C-A	779	195			779				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.31	0.00	0.00	0.31	0.31			N/A	N/A
B-AD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A



08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.46	0.00	0.00	0.46	0.46			N/A	N/A
B-AD	0.26	0.00	0.00	0.26	0.26			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.03	0.03	0.26	0.48	0.50			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	1.11	0.03	0.28	1.11	2.79			N/A	N/A
B-AD	0.96	0.03	0.31	1.51	4.74			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.06	0.03	0.27	0.48	0.51			N/A	N/A
C-ABD	0.26	0.03	0.27	0.49	0.51			N/A	N/A

08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	1.21	0.03	0.32	2.25	6.16			N/A	N/A
B-AD	1.06	0.04	0.40	2.66	4.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.06	0.00	0.00	0.06	0.06			N/A	N/A
C-ABD	0.26	0.03	0.30	0.82	1.21			N/A	N/A

08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.48	0.04	0.41	1.27	1.41			N/A	N/A
B-AD	0.28	0.03	0.31	0.93	1.24			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.18	0.00	0.00	0.18	0.18			N/A	N/A

09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.32	0.03	0.31	0.98	1.26			N/A	N/A
B-AD	0.15	0.03	0.28	0.50	0.87			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

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## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.90	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-12	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037 final	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1108	100.000
B		ONE HOUR	✓	180	100.000
C		ONE HOUR	✓	1274	100.000
D		ONE HOUR	✓	3	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	65	1041	2
	B	33	0	147	0
	C	1108	161	0	5
	D	0	1	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.42	16.45	0.7	3.5	C	135	202
B-AD	0.45	80.24	0.8	3.0	F	30	45
A-BCD	0.01	10.55	0.0	0.5	B	2	3
A-B						60	89
A-C						955	1433
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.41	14.51	0.7	3.3	B	148	222
C-D						5	7
C-A						1017	1525

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	111	28	554	0.200	110	0.0	0.3	8.245	A
B-AD	25	6	229	0.109	24	0.0	0.1	17.919	C
A-BCD	2	0.38	486	0.003	1	0.0	0.0	8.174	A
A-B	49	12			49				
A-C	784	196			784				
D-ABC	0	0	272	0.000	0	0.0	0.0	0.000	A
C-ABD	121	30	526	0.230	120	0.0	0.3	9.272	A
C-D	4	0.94			4				
C-A	834	209			834				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	505	0.262	132	0.3	0.4	9.837	A
B-AD	30	7	168	0.177	29	0.1	0.2	26.493	D
A-BCD	2	0.45	440	0.004	2	0.0	0.0	9.028	A
A-B	58	15			58				
A-C	936	234			936				
D-ABC	0	0	206	0.000	0	0.0	0.0	0.000	A
C-ABD	145	36	489	0.296	144	0.3	0.4	10.941	B
C-D	4	1			4				
C-A	996	249			996				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	162	40	393	0.412	161	0.4	0.7	15.696	C
B-AD	36	9	82	0.443	34	0.2	0.7	74.357	F
A-BCD	2	0.55	378	0.006	2	0.0	0.0	10.541	B
A-B	72	18			72				
A-C	1146	287			1146				
D-ABC	0	0	107	0.000	0	0.0	0.0	0.000	A

C-ABD	177	44	438	0.405	176	0.4	0.7	14.397	B
C-D	6	1			6				
C-A	1220	305			1220				

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	162	40	385	0.421	162	0.7	0.7	16.448	C
B-AD	36	9	81	0.446	36	0.7	0.8	80.238	F
A-BCD	2	0.55	378	0.006	2	0.0	0.0	10.550	B
A-B	72	18			72				
A-C	1146	287			1146				
D-ABC	0	0	106	0.000	0	0.0	0.0	0.000	A
C-ABD	177	44	438	0.405	177	0.7	0.7	14.508	B
C-D	6	1			6				
C-A	1220	305			1220				

### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	501	0.264	134	0.7	0.4	10.024	B
B-AD	30	7	167	0.178	32	0.8	0.2	27.519	D
A-BCD	2	0.45	440	0.004	2	0.0	0.0	9.041	A
A-B	58	15			58				
A-C	936	234			936				
D-ABC	0	0	205	0.000	0	0.0	0.0	0.000	A
C-ABD	145	36	489	0.296	146	0.7	0.4	11.040	B
C-D	4	1			4				
C-A	996	249			996				

### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	111	28	553	0.200	111	0.4	0.3	8.316	A
B-AD	25	6	228	0.109	25	0.2	0.1	18.116	C
A-BCD	2	0.38	485	0.003	2	0.0	0.0	8.186	A
A-B	49	12			49				
A-C	784	196			784				
D-ABC	0	0	271	0.000	0	0.0	0.0	0.000	A
C-ABD	121	30	526	0.230	122	0.4	0.3	9.351	A
C-D	4	0.94			4				
C-A	834	209			834				

## Queue Variation Results for each time segment

### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.31	0.00	0.00	0.31	0.31			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.36	0.00	0.00	0.36	0.36			N/A	N/A
B-AD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.43	0.00	0.00	0.43	0.43			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.69	0.03	0.27	0.69	0.69			N/A	N/A
B-AD	0.71	0.03	0.29	1.13	3.00			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.70	0.03	0.27	0.70	0.70			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.73	0.03	0.32	1.38	3.49			N/A	N/A
B-AD	0.76	0.04	0.38	1.78	2.95			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.71	0.03	0.31	1.47	3.31			N/A	N/A

17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.37	0.03	0.27	0.49	0.63			N/A	N/A
B-AD	0.23	0.03	0.27	0.49	0.65			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.45	0.03	0.34	1.11	1.34			N/A	N/A

18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.26	0.03	0.26	0.46	0.49			N/A	N/A
B-AD	0.13	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.32	0.03	0.27	0.49	0.51			N/A	N/A

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## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.57	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	26	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037 final	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	750	100.000
B		ONE HOUR	✓	141	100.000
C		ONE HOUR	✓	796	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	47	702	1
	B	40	0	98	3
	C	698	87	0	11
	D	2	2	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.20	9.21	0.3	1.3	A	91	137
B-AD	0.18	19.39	0.2	1.1	C	38	57
A-BCD	0.00	7.26	0.0	0.5	A	0.92	1
A-B						43	65
A-C						644	966
D-ABC	0.04	14.87	0.0	0.5	B	9	14
C-ABD	0.18	9.15	0.2	1.1	A	80	120
C-D						10	15
C-A						640	961

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	622	0.121	74	0.0	0.1	7.218	A
B-AD	31	8	345	0.090	31	0.0	0.1	12.540	B
A-BCD	0.75	0.19	574	0.001	0.75	0.0	0.0	6.403	A
A-B	35	9			35				
A-C	529	132			529				
D-ABC	8	2	374	0.020	7	0.0	0.0	10.692	B
C-ABD	65	16	588	0.111	65	0.0	0.1	7.556	A
C-D	8	2			8				
C-A	525	131			525				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	589	0.152	89	0.1	0.2	7.917	A
B-AD	37	9	305	0.122	37	0.1	0.1	14.722	B
A-BCD	0.90	0.22	546	0.002	0.90	0.0	0.0	6.735	A
A-B	42	11			42				
A-C	631	158			631				
D-ABC	9	2	333	0.027	9	0.0	0.0	12.104	B
C-ABD	78	20	563	0.139	78	0.1	0.2	8.158	A
C-D	10	2			10				
C-A	627	157			627				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	539	0.204	110	0.2	0.3	9.194	A
B-AD	45	11	249	0.182	45	0.1	0.2	19.315	C
A-BCD	1	0.28	507	0.002	1	0.0	0.0	7.254	A
A-B	52	13			52				
A-C	773	193			773				
D-ABC	11	3	275	0.040	11	0.0	0.0	14.851	B

C-ABD	96	24	528	0.181	96	0.2	0.2	9.142	A
C-D	12	3			12				
C-A	769	192			769				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	539	0.204	110	0.3	0.3	9.209	A
B-AD	45	11	249	0.182	45	0.2	0.2	19.389	C
A-BCD	1	0.28	507	0.002	1	0.0	0.0	7.255	A
A-B	52	13			52				
A-C	773	193			773				
D-ABC	11	3	275	0.040	11	0.0	0.0	14.865	B
C-ABD	96	24	528	0.181	96	0.2	0.2	9.153	A
C-D	12	3			12				
C-A	769	192			769				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	588	0.152	90	0.3	0.2	7.939	A
B-AD	37	9	305	0.122	37	0.2	0.2	14.787	B
A-BCD	0.90	0.22	546	0.002	0.90	0.0	0.0	6.740	A
A-B	42	11			42				
A-C	631	158			631				
D-ABC	9	2	333	0.027	9	0.0	0.0	12.121	B
C-ABD	78	20	563	0.139	78	0.2	0.2	8.173	A
C-D	10	2			10				
C-A	627	157			627				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	621	0.121	75	0.2	0.2	7.246	A
B-AD	31	8	345	0.090	31	0.2	0.1	12.596	B
A-BCD	0.75	0.19	574	0.001	0.75	0.0	0.0	6.408	A
A-B	35	9			35				
A-C	529	132			529				
D-ABC	8	2	374	0.020	8	0.0	0.0	10.707	B
C-ABD	65	16	588	0.111	66	0.2	0.1	7.575	A
C-D	8	2			8				
C-A	525	131			525				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A



13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B-AD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.03	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.18	0.00	0.00	0.18	0.18			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.28	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.24	0.03	0.29	0.52	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.28	0.50	0.52			N/A	N/A
C-ABD	0.24	0.03	0.28	0.51	0.54			N/A	N/A

13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.28	0.03	0.32	0.92	1.30			N/A	N/A
B-AD	0.24	0.03	0.31	0.60	1.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.05	0.00	0.00	0.05	0.05			N/A	N/A
C-ABD	0.24	0.03	0.30	0.55	1.06			N/A	N/A

13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B-AD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.18	0.00	0.00	0.18	0.18			N/A	N/A

14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

# 2037 final, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.74	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2037 final	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	74	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	78	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	5	69	0
	B	4	0	10	0
	C	68	9	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.81	0.0	0.5	A	9	14
B-AD	0.01	7.01	0.0	0.5	A	4	6
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						5	7
A-C						63	95
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.22	0.0	0.5	A	8	12
C-D						0.92	1
C-A						62	94

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	766	0.010	7	0.0	0.0	4.743	A
B-AD	3	0.75	527	0.006	3	0.0	0.0	6.866	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	52	13			52				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.151	A
C-D	0.75	0.19			0.75				
C-A	51	13			51				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	763	0.012	9	0.0	0.0	4.770	A
B-AD	4	0.90	523	0.007	4	0.0	0.0	6.924	A
A-BCD	0	0	1438	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	62	16			62				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	703	0.012	8	0.0	0.0	5.179	A
C-D	0.90	0.22			0.90				
C-A	61	15			61				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	11	3	760	0.014	11	0.0	0.0	4.808	A
B-AD	4	1	518	0.009	4	0.0	0.0	7.007	A
A-BCD	0	0	1430	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	76	19			76				
D-ABC	0	0	555	0.000	0	0.0	0.0	0.000	A

C-ABD	10	2	700	0.014	10	0.0	0.0	5.218	A
C-D	1	0.28			1				
C-A	75	19			75				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	11	3	760	0.015	11	0.0	0.0	4.808	A
B-AD	4	1	518	0.009	4	0.0	0.0	7.007	A
A-BCD	0	0	1430	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	76	19			76				
D-ABC	0	0	555	0.000	0	0.0	0.0	0.000	A
C-ABD	10	2	700	0.014	10	0.0	0.0	5.218	A
C-D	1	0.28			1				
C-A	75	19			75				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	763	0.012	9	0.0	0.0	4.771	A
B-AD	4	0.90	523	0.007	4	0.0	0.0	6.924	A
A-BCD	0	0	1438	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	62	16			62				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	703	0.012	8	0.0	0.0	5.179	A
C-D	0.90	0.22			0.90				
C-A	61	15			61				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	766	0.010	8	0.0	0.0	4.746	A
B-AD	3	0.75	527	0.006	3	0.0	0.0	6.866	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	52	13			52				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.151	A
C-D	0.75	0.19			0.75				
C-A	51	13			51				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

# 2023LG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.68	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	6	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	994	100.000
B		ONE HOUR	✓	184	100.000
C		ONE HOUR	✓	933	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	32	961	1
	B	34	0	149	1
	C	853	66	0	14
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.35	12.23	0.6	2.6	B	137	206
B-AD	0.23	28.26	0.3	1.3	D	32	47
A-BCD	0.00	8.36	0.0	0.5	A	0.92	1
A-B						29	44
A-C						882	1323
D-ABC	0.03	17.52	0.0	0.5	C	6	8
C-ABD	0.16	9.59	0.2	0.5	A	61	91
C-D						13	19
C-A						783	1174

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	113	28	572	0.197	112	0.0	0.2	7.960	A
B-AD	26	6	288	0.090	26	0.0	0.1	13.958	B
A-BCD	0.75	0.19	552	0.001	0.75	0.0	0.0	7.182	A
A-B	24	6			24				
A-C	723	181			723				
D-ABC	5	1	349	0.013	4	0.0	0.0	10.986	B
C-ABD	50	12	546	0.091	49	0.0	0.1	7.599	A
C-D	11	3			11				
C-A	642	161			642				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	134	34	530	0.253	134	0.2	0.3	9.256	A
B-AD	31	8	238	0.130	31	0.1	0.1	17.679	C
A-BCD	0.90	0.22	520	0.002	0.90	0.0	0.0	7.634	A
A-B	29	7			29				
A-C	864	216			864				
D-ABC	5	1	298	0.018	5	0.0	0.0	12.949	B
C-ABD	59	15	513	0.116	59	0.1	0.1	8.331	A
C-D	13	3			13				
C-A	767	192			767				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	165	41	466	0.354	164	0.3	0.5	12.131	B
B-AD	38	9	168	0.226	37	0.1	0.3	28.003	D
A-BCD	1	0.28	475	0.002	1	0.0	0.0	8.358	A
A-B	35	9			35				
A-C	1058	265			1058				
D-ABC	7	2	223	0.030	7	0.0	0.0	17.501	C

C-ABD	73	18	467	0.156	72	0.1	0.2	9.584	A
C-D	15	4			15				
C-A	939	235			939				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	165	41	465	0.354	165	0.5	0.6	12.225	B
B-AD	38	9	168	0.226	38	0.3	0.3	28.260	D
A-BCD	1	0.28	475	0.002	1	0.0	0.0	8.359	A
A-B	35	9			35				
A-C	1058	265			1058				
D-ABC	7	2	223	0.030	7	0.0	0.0	17.524	C
C-ABD	73	18	467	0.156	73	0.2	0.2	9.593	A
C-D	15	4			15				
C-A	939	235			939				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	134	34	530	0.254	135	0.6	0.4	9.327	A
B-AD	31	8	238	0.130	31	0.3	0.2	17.821	C
A-BCD	0.90	0.22	519	0.002	0.90	0.0	0.0	7.638	A
A-B	29	7			29				
A-C	864	216			864				
D-ABC	5	1	298	0.018	5	0.0	0.0	12.964	B
C-ABD	59	15	513	0.116	60	0.2	0.1	8.344	A
C-D	13	3			13				
C-A	767	192			767				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	113	28	571	0.197	113	0.4	0.3	8.016	A
B-AD	26	6	288	0.090	26	0.2	0.1	14.034	B
A-BCD	0.75	0.19	552	0.001	0.75	0.0	0.0	7.185	A
A-B	24	6			24				
A-C	723	181			723				
D-ABC	5	1	349	0.013	5	0.0	0.0	10.999	B
C-ABD	50	12	546	0.091	50	0.1	0.1	7.618	A
C-D	11	3			11				
C-A	642	161			642				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A



08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.34	0.00	0.00	0.34	0.34			N/A	N/A
B-AD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.02	0.02	0.26	0.48	0.50			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.55	0.03	0.26	0.55	0.55			N/A	N/A
B-AD	0.29	0.03	0.27	0.49	0.72			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.19	0.03	0.27	0.49	0.51			N/A	N/A

08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.55	0.03	0.31	1.47	2.56			N/A	N/A
B-AD	0.29	0.03	0.31	1.01	1.31			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.19	0.03	0.27	0.48	0.51			N/A	N/A

08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.35	0.00	0.00	0.35	0.35			N/A	N/A
B-AD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.11	0.00	0.00	0.11	0.11			N/A	N/A

# 2023LG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.81	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	904	100.000
B		ONE HOUR	✓	160	100.000
C		ONE HOUR	✓	1034	100.000
D		ONE HOUR	✓	3	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	55	847	2
	B	27	0	133	0
	C	884	146	0	4
	D	0	1	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.29	10.25	0.4	1.6	B	122	183
B-AD	0.18	27.22	0.2	1.0	D	25	37
A-BCD	0.01	9.04	0.0	0.5	A	2	3
A-B						50	76
A-C						777	1166
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.33	11.50	0.5	2.3	B	134	201
C-D						4	6
C-A						811	1217

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	100	25	597	0.168	99	0.0	0.2	7.369	A
B-AD	20	5	284	0.072	20	0.0	0.1	13.890	B
A-BCD	2	0.38	529	0.003	1	0.0	0.0	7.512	A
A-B	41	10			41				
A-C	638	159			638				
D-ABC	0	0	333	0.000	0	0.0	0.0	0.000	A
C-ABD	110	27	562	0.196	109	0.0	0.3	8.329	A
C-D	3	0.75			3				
C-A	666	166			666				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	120	30	561	0.213	119	0.2	0.3	8.316	A
B-AD	24	6	234	0.104	24	0.1	0.1	17.471	C
A-BCD	2	0.45	491	0.004	2	0.0	0.0	8.087	A
A-B	49	12			49				
A-C	761	190			761				
D-ABC	0	0	281	0.000	0	0.0	0.0	0.000	A
C-ABD	131	33	531	0.247	131	0.3	0.3	9.430	A
C-D	4	0.90			4				
C-A	795	199			795				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	146	37	505	0.290	146	0.3	0.4	10.207	B
B-AD	30	7	165	0.180	29	0.1	0.2	27.021	D
A-BCD	2	0.55	440	0.005	2	0.0	0.0	9.037	A
A-B	61	15			61				
A-C	933	233			933				
D-ABC	0	0	206	0.000	0	0.0	0.0	0.000	A

C-ABD	161	40	489	0.329	160	0.3	0.5	11.458	B
C-D	4	1			4				
C-A	973	243			973				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	146	37	505	0.290	146	0.4	0.4	10.253	B
B-AD	30	7	165	0.181	30	0.2	0.2	27.216	D
A-BCD	2	0.55	440	0.005	2	0.0	0.0	9.042	A
A-B	61	15			61				
A-C	933	233			933				
D-ABC	0	0	206	0.000	0	0.0	0.0	0.000	A
C-ABD	161	40	489	0.329	161	0.5	0.5	11.501	B
C-D	4	1			4				
C-A	973	243			973				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	120	30	560	0.213	120	0.4	0.3	8.358	A
B-AD	24	6	234	0.104	25	0.2	0.1	17.584	C
A-BCD	2	0.45	491	0.004	2	0.0	0.0	8.095	A
A-B	49	12			49				
A-C	761	190			761				
D-ABC	0	0	280	0.000	0	0.0	0.0	0.000	A
C-ABD	131	33	531	0.247	132	0.5	0.3	9.477	A
C-D	4	0.90			4				
C-A	795	199			795				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	100	25	596	0.168	100	0.3	0.2	7.409	A
B-AD	20	5	284	0.072	20	0.1	0.1	13.957	B
A-BCD	2	0.38	528	0.003	2	0.0	0.0	7.518	A
A-B	41	10			41				
A-C	638	159			638				
D-ABC	0	0	332	0.000	0	0.0	0.0	0.000	A
C-ABD	110	27	562	0.196	110	0.3	0.3	8.379	A
C-D	3	0.75			3				
C-A	666	166			666				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.25	0.00	0.00	0.25	0.25			N/A	N/A

### 17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.27	0.00	0.00	0.27	0.27			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.34	0.00	0.00	0.34	0.34			N/A	N/A

### 17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.41	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.22	0.03	0.27	0.49	0.70			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.50	0.03	0.27	0.50	0.51			N/A	N/A

### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.41	0.03	0.32	1.34	1.63			N/A	N/A
B-AD	0.22	0.03	0.28	0.50	0.96			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.51	0.03	0.32	1.45	2.26			N/A	N/A

### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.28	0.00	0.00	0.28	0.28			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.35	0.00	0.00	0.35	0.35			N/A	N/A

### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.21	0.00	0.00	0.21	0.21			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.26	0.00	0.00	0.26	0.26			N/A	N/A

# 2023LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.46	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	51	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	612	100.000
B		ONE HOUR	✓	126	100.000
C		ONE HOUR	✓	661	100.000
D		ONE HOUR	✓	9	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	40	571	1
	B	34	0	89	3
	C	571	80	0	10
	D	2	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.17	8.11	0.2	0.6	A	83	125
B-AD	0.13	15.06	0.2	0.5	C	32	49
A-BCD	0.00	6.79	0.0	0.5	A	0.92	1
A-B						37	55
A-C						524	786
D-ABC	0.03	12.12	0.0	0.5	B	8	12
C-ABD	0.16	8.33	0.2	0.5	A	73	110
C-D						9	14
C-A						524	786

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	68	17	651	0.105	68	0.0	0.1	6.770	A
B-AD	27	7	380	0.070	26	0.0	0.1	11.149	B
A-BCD	0.75	0.19	598	0.001	0.75	0.0	0.0	6.147	A
A-B	30	8			30				
A-C	430	107			430				
D-ABC	7	2	414	0.016	7	0.0	0.0	9.630	A
C-ABD	60	15	612	0.098	60	0.0	0.1	7.159	A
C-D	8	2			8				
C-A	430	107			430				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	625	0.130	81	0.1	0.2	7.268	A
B-AD	32	8	347	0.092	32	0.1	0.1	12.515	B
A-BCD	0.90	0.22	575	0.002	0.90	0.0	0.0	6.400	A
A-B	36	9			36				
A-C	513	128			513				
D-ABC	8	2	380	0.021	8	0.0	0.0	10.534	B
C-ABD	72	18	592	0.122	72	0.1	0.2	7.613	A
C-D	9	2			9				
C-A	513	128			513				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	100	25	588	0.170	100	0.2	0.2	8.096	A
B-AD	39	10	301	0.129	39	0.1	0.2	15.020	C
A-BCD	1	0.28	542	0.002	1	0.0	0.0	6.785	A
A-B	44	11			44				
A-C	629	157			629				
D-ABC	10	2	333	0.030	10	0.0	0.0	12.119	B

C-ABD	88	22	563	0.156	88	0.2	0.2	8.325	A
C-D	11	3			11				
C-A	629	157			629				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	100	25	587	0.170	100	0.2	0.2	8.107	A
B-AD	39	10	301	0.129	39	0.2	0.2	15.058	C
A-BCD	1	0.28	542	0.002	1	0.0	0.0	6.786	A
A-B	44	11			44				
A-C	629	157			629				
D-ABC	10	2	333	0.030	10	0.0	0.0	12.125	B
C-ABD	88	22	563	0.156	88	0.2	0.2	8.331	A
C-D	11	3			11				
C-A	629	157			629				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	625	0.130	82	0.2	0.2	7.283	A
B-AD	32	8	347	0.092	32	0.2	0.1	12.542	B
A-BCD	0.90	0.22	574	0.002	0.90	0.0	0.0	6.402	A
A-B	36	9			36				
A-C	513	128			513				
D-ABC	8	2	380	0.021	8	0.0	0.0	10.542	B
C-ABD	72	18	592	0.122	72	0.2	0.2	7.622	A
C-D	9	2			9				
C-A	513	128			513				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	68	17	651	0.105	68	0.2	0.1	6.788	A
B-AD	27	7	380	0.070	27	0.1	0.1	11.182	B
A-BCD	0.75	0.19	598	0.001	0.75	0.0	0.0	6.149	A
A-B	30	8			30				
A-C	430	107			430				
D-ABC	7	2	413	0.016	7	0.0	0.0	9.639	A
C-ABD	60	15	612	0.098	60	0.2	0.1	7.174	A
C-D	8	2			8				
C-A	430	107			430				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A



### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.02	0.02	0.27	0.49	0.52			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.03	0.28	0.51	0.54			N/A	N/A
B-AD	0.16	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.03	0.28	0.51	0.54			N/A	N/A

### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.03	0.29	0.52	0.55			N/A	N/A
B-AD	0.16	0.03	0.27	0.49	0.52			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.03	0.28	0.51	0.53			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

# 2023LG, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.77	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	60	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	65	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	4	56	0
	B	3	0	9	0
	C	56	8	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.75	0.0	0.5	A	8	12
B-AD	0.01	6.96	0.0	0.5	A	3	4
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						4	6
A-C						51	77
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.18	0.0	0.5	A	7	11
C-D						0.92	1
C-A						51	77

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	773	0.009	7	0.0	0.0	4.697	A
B-AD	2	0.56	528	0.004	2	0.0	0.0	6.851	A
A-BCD	0	0	1448	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	42	11			42				
D-ABC	0	0	567	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	708	0.009	6	0.0	0.0	5.128	A
C-D	0.75	0.19			0.75				
C-A	42	11			42				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	771	0.011	8	0.0	0.0	4.719	A
B-AD	3	0.67	525	0.005	3	0.0	0.0	6.898	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	50	13			50				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.151	A
C-D	0.90	0.22			0.90				
C-A	50	13			50				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	768	0.013	10	0.0	0.0	4.750	A
B-AD	3	0.83	520	0.006	3	0.0	0.0	6.964	A
A-BCD	0	0	1437	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	62	15			62				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A

C-ABD	9	2	703	0.013	9	0.0	0.0	5.184	A
C-D	1	0.28			1				
C-A	62	15			62				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	768	0.013	10	0.0	0.0	4.750	A
B-AD	3	0.83	520	0.006	3	0.0	0.0	6.964	A
A-BCD	0	0	1437	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	62	15			62				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A
C-ABD	9	2	703	0.013	9	0.0	0.0	5.184	A
C-D	1	0.28			1				
C-A	62	15			62				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	771	0.011	8	0.0	0.0	4.719	A
B-AD	3	0.67	525	0.005	3	0.0	0.0	6.898	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	50	13			50				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.151	A
C-D	0.90	0.22			0.90				
C-A	50	13			50				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	773	0.009	7	0.0	0.0	4.699	A
B-AD	2	0.56	528	0.004	2	0.0	0.0	6.853	A
A-BCD	0	0	1448	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	42	11			42				
D-ABC	0	0	567	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	708	0.009	6	0.0	0.0	5.128	A
C-D	0.75	0.19			0.75				
C-A	42	11			42				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

# 2037LG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.59	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	980	100.000
B		ONE HOUR	✓	179	100.000
C		ONE HOUR	✓	921	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	30	949	1
	B	32	0	146	1
	C	842	65	0	14
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.34	11.80	0.5	2.4	B	134	202
B-AD	0.21	26.74	0.3	1.2	D	30	45
A-BCD	0.00	8.30	0.0	0.5	A	0.92	1
A-B						28	41
A-C						871	1306
D-ABC	0.03	17.06	0.0	0.5	C	6	8
C-ABD	0.15	9.48	0.2	0.5	A	60	89
C-D						13	19
C-A						773	1159

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	28	576	0.192	109	0.0	0.2	7.861	A
B-AD	24	6	291	0.084	24	0.0	0.1	13.722	B
A-BCD	0.75	0.19	554	0.001	0.75	0.0	0.0	7.155	A
A-B	23	6			23				
A-C	714	179			714				
D-ABC	5	1	353	0.013	4	0.0	0.0	10.875	B
C-ABD	49	12	549	0.089	49	0.0	0.1	7.551	A
C-D	11	3			11				
C-A	634	158			634				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	535	0.246	131	0.2	0.3	9.086	A
B-AD	29	7	242	0.120	29	0.1	0.1	17.211	C
A-BCD	0.90	0.22	522	0.002	0.90	0.0	0.0	7.596	A
A-B	27	7			27				
A-C	853	213			853				
D-ABC	5	1	302	0.018	5	0.0	0.0	12.758	B
C-ABD	58	15	516	0.113	58	0.1	0.1	8.262	A
C-D	13	3			13				
C-A	757	189			757				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	161	40	473	0.341	161	0.3	0.5	11.724	B
B-AD	36	9	173	0.206	35	0.1	0.3	26.538	D
A-BCD	1	0.28	478	0.002	1	0.0	0.0	8.303	A
A-B	33	8			33				
A-C	1045	261			1045				
D-ABC	7	2	229	0.029	7	0.0	0.0	17.044	C

C-ABD	72	18	470	0.152	71	0.1	0.2	9.472	A
C-D	15	4			15				
C-A	927	232			927				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	161	40	472	0.342	161	0.5	0.5	11.803	B
B-AD	36	9	173	0.206	36	0.3	0.3	26.738	D
A-BCD	1	0.28	478	0.002	1	0.0	0.0	8.304	A
A-B	33	8			33				
A-C	1045	261			1045				
D-ABC	7	2	229	0.029	7	0.0	0.0	17.065	C
C-ABD	72	18	470	0.152	72	0.2	0.2	9.482	A
C-D	15	4			15				
C-A	927	232			927				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	535	0.246	132	0.5	0.3	9.149	A
B-AD	29	7	242	0.121	30	0.3	0.1	17.326	C
A-BCD	0.90	0.22	522	0.002	0.90	0.0	0.0	7.598	A
A-B	27	7			27				
A-C	853	213			853				
D-ABC	5	1	302	0.018	5	0.0	0.0	12.775	B
C-ABD	58	15	516	0.113	59	0.2	0.1	8.273	A
C-D	13	3			13				
C-A	757	189			757				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	28	575	0.192	111	0.3	0.2	7.911	A
B-AD	24	6	291	0.084	25	0.1	0.1	13.788	B
A-BCD	0.75	0.19	554	0.001	0.75	0.0	0.0	7.160	A
A-B	23	6			23				
A-C	714	179			714				
D-ABC	5	1	353	0.013	5	0.0	0.0	10.889	B
C-ABD	49	12	549	0.089	49	0.1	0.1	7.569	A
C-D	11	3			11				
C-A	634	158			634				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.00	0.00	0.24	0.24			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A



08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.33	0.00	0.00	0.33	0.33			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.02	0.02	0.26	0.48	0.50			N/A	N/A
C-ABD	0.13	0.00	0.00	0.13	0.13			N/A	N/A

08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.52	0.03	0.26	0.52	0.52			N/A	N/A
B-AD	0.26	0.03	0.27	0.48	0.65			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.19	0.03	0.27	0.49	0.51			N/A	N/A

08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.52	0.03	0.31	1.46	2.38			N/A	N/A
B-AD	0.26	0.03	0.30	0.86	1.21			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.19	0.03	0.27	0.48	0.51			N/A	N/A

08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.34	0.00	0.00	0.34	0.34			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.00	0.00	0.24	0.24			N/A	N/A
B-AD	0.09	0.00	0.00	0.09	0.09			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.10	0.00	0.00	0.10	0.10			N/A	N/A

# 2037LG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.74	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	10	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	883	100.000
B		ONE HOUR	✓	156	100.000
C		ONE HOUR	✓	1010	100.000
D		ONE HOUR	✓	3	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	52	829	2
	B	26	0	130	0
	C	863	143	0	4
	D	0	1	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.28	9.94	0.4	1.5	A	119	179
B-AD	0.17	25.41	0.2	0.6	D	24	36
A-BCD	0.00	8.91	0.0	0.5	A	2	3
A-B						48	72
A-C						761	1141
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.32	11.21	0.5	2.1	B	131	197
C-D						4	6
C-A						792	1188

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	98	24	601	0.163	97	0.0	0.2	7.276	A
B-AD	20	5	290	0.068	19	0.0	0.1	13.565	B
A-BCD	2	0.38	533	0.003	1	0.0	0.0	7.450	A
A-B	39	10			39				
A-C	624	156			624				
D-ABC	0	0	339	0.000	0	0.0	0.0	0.000	A
C-ABD	108	27	565	0.190	107	0.0	0.2	8.223	A
C-D	3	0.75			3				
C-A	650	162			650				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	117	29	566	0.206	117	0.2	0.3	8.166	A
B-AD	23	6	241	0.097	23	0.1	0.1	16.855	C
A-BCD	2	0.45	497	0.004	2	0.0	0.0	8.002	A
A-B	47	12			47				
A-C	745	186			745				
D-ABC	0	0	288	0.000	0	0.0	0.0	0.000	A
C-ABD	129	32	536	0.240	128	0.2	0.3	9.269	A
C-D	4	0.90			4				
C-A	776	194			776				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	143	36	513	0.279	143	0.3	0.4	9.900	A
B-AD	29	7	173	0.165	28	0.1	0.2	25.263	D
A-BCD	2	0.55	447	0.005	2	0.0	0.0	8.907	A
A-B	57	14			57				
A-C	913	228			913				
D-ABC	0	0	216	0.000	0	0.0	0.0	0.000	A

C-ABD	157	39	495	0.318	157	0.3	0.5	11.168	B
C-D	4	1			4				
C-A	950	238			950				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	143	36	513	0.279	143	0.4	0.4	9.939	A
B-AD	29	7	173	0.165	29	0.2	0.2	25.411	D
A-BCD	2	0.55	447	0.005	2	0.0	0.0	8.911	A
A-B	57	14			57				
A-C	913	228			913				
D-ABC	0	0	216	0.000	0	0.0	0.0	0.000	A
C-ABD	157	39	495	0.318	157	0.5	0.5	11.207	B
C-D	4	1			4				
C-A	950	238			950				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	117	29	565	0.207	117	0.4	0.3	8.204	A
B-AD	23	6	241	0.097	24	0.2	0.1	16.951	C
A-BCD	2	0.45	496	0.004	2	0.0	0.0	8.007	A
A-B	47	12			47				
A-C	745	186			745				
D-ABC	0	0	288	0.000	0	0.0	0.0	0.000	A
C-ABD	129	32	536	0.240	129	0.5	0.3	9.313	A
C-D	4	0.90			4				
C-A	776	194			776				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	98	24	601	0.163	98	0.3	0.2	7.309	A
B-AD	20	5	289	0.068	20	0.1	0.1	13.627	B
A-BCD	2	0.38	533	0.003	2	0.0	0.0	7.456	A
A-B	39	10			39				
A-C	624	156			624				
D-ABC	0	0	338	0.000	0	0.0	0.0	0.000	A
C-ABD	108	27	565	0.190	108	0.3	0.2	8.270	A
C-D	3	0.75			3				
C-A	650	162			650				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B-AD	0.07	0.00	0.00	0.07	0.07			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.24	0.00	0.00	0.24	0.24			N/A	N/A

17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.26	0.00	0.00	0.26	0.26			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.33	0.00	0.00	0.33	0.33			N/A	N/A

17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.39	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.20	0.03	0.27	0.48	0.63			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.48	0.03	0.27	0.48	0.51			N/A	N/A

17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.39	0.03	0.32	1.30	1.47			N/A	N/A
B-AD	0.20	0.03	0.27	0.48	0.55			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.49	0.03	0.32	1.44	2.08			N/A	N/A

17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.27	0.00	0.00	0.27	0.27			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.34	0.00	0.00	0.34	0.34			N/A	N/A

18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.20	0.00	0.00	0.20	0.20			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.25	0.00	0.00	0.25	0.25			N/A	N/A

# 2037LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.44	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	54	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	602	100.000
B		ONE HOUR	✓	124	100.000
C		ONE HOUR	✓	649	100.000
D		ONE HOUR	✓	8	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	38	563	1
	B	33	0	88	3
	C	561	79	0	9
	D	1	2	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.17	8.03	0.2	0.5	A	82	123
B-AD	0.12	14.77	0.2	0.5	B	32	47
A-BCD	0.00	6.75	0.0	0.5	A	0.92	1
A-B						35	52
A-C						517	775
D-ABC	0.03	12.47	0.0	0.5	B	7	11
C-ABD	0.15	8.27	0.2	0.5	A	72	109
C-D						8	12
C-A						515	772

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	653	0.103	67	0.0	0.1	6.733	A
B-AD	26	6	382	0.068	26	0.0	0.1	11.046	B
A-BCD	0.75	0.19	600	0.001	0.75	0.0	0.0	6.125	A
A-B	29	7			29				
A-C	424	106			424				
D-ABC	6	2	403	0.015	6	0.0	0.0	9.867	A
C-ABD	59	15	614	0.097	59	0.0	0.1	7.127	A
C-D	7	2			7				
C-A	422	106			422				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	628	0.128	80	0.1	0.2	7.218	A
B-AD	31	8	350	0.088	31	0.1	0.1	12.356	B
A-BCD	0.90	0.22	577	0.002	0.90	0.0	0.0	6.372	A
A-B	34	9			34				
A-C	506	127			506				
D-ABC	7	2	369	0.019	7	0.0	0.0	10.814	B
C-ABD	71	18	594	0.120	71	0.1	0.1	7.570	A
C-D	8	2			8				
C-A	504	126			504				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	99	25	591	0.167	99	0.2	0.2	8.018	A
B-AD	38	9	305	0.124	38	0.1	0.2	14.749	B
A-BCD	1	0.28	545	0.002	1	0.0	0.0	6.746	A
A-B	42	10			42				
A-C	620	155			620				
D-ABC	9	2	323	0.027	9	0.0	0.0	12.469	B

C-ABD	87	22	566	0.154	87	0.1	0.2	8.262	A
C-D	10	2			10				
C-A	618	154			618				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	99	25	591	0.167	99	0.2	0.2	8.027	A
B-AD	38	9	305	0.124	38	0.2	0.2	14.773	B
A-BCD	1	0.28	545	0.002	1	0.0	0.0	6.747	A
A-B	42	10			42				
A-C	620	155			620				
D-ABC	9	2	322	0.027	9	0.0	0.0	12.475	B
C-ABD	87	22	566	0.154	87	0.2	0.2	8.268	A
C-D	10	2			10				
C-A	618	154			618				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	628	0.128	81	0.2	0.2	7.232	A
B-AD	31	8	350	0.088	31	0.2	0.1	12.381	B
A-BCD	0.90	0.22	577	0.002	0.90	0.0	0.0	6.373	A
A-B	34	9			34				
A-C	506	127			506				
D-ABC	7	2	369	0.020	7	0.0	0.0	10.822	B
C-ABD	71	18	594	0.120	71	0.2	0.2	7.578	A
C-D	8	2			8				
C-A	504	126			504				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	67	17	653	0.103	68	0.2	0.1	6.754	A
B-AD	26	6	382	0.068	26	0.1	0.1	11.074	B
A-BCD	0.75	0.19	600	0.001	0.75	0.0	0.0	6.129	A
A-B	29	7			29				
A-C	424	106			424				
D-ABC	6	2	402	0.015	6	0.0	0.0	9.879	A
C-ABD	59	15	614	0.097	60	0.2	0.1	7.142	A
C-D	7	2			7				
C-A	422	106			422				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A



13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.02	0.02	0.27	0.49	0.52			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.03	0.28	0.51	0.54			N/A	N/A
B-AD	0.15	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.03	0.28	0.51	0.54			N/A	N/A

13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.03	0.29	0.52	0.54			N/A	N/A
B-AD	0.15	0.03	0.27	0.49	0.52			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.03	0.28	0.50	0.53			N/A	N/A

13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
B-AD	0.11	0.00	0.00	0.11	0.11			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
B-AD	0.08	0.00	0.00	0.08	0.08			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

# 2037LG, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.78	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	59	100.000
B		ONE HOUR	✓	12	100.000
C		ONE HOUR	✓	64	100.000
D		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	4	55	0
	B	3	0	9	0
	C	55	8	0	1
	D	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.75	0.0	0.5	A	8	12
B-AD	0.01	6.96	0.0	0.5	A	3	4
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						4	6
A-C						50	76
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.18	0.0	0.5	A	7	11
C-D						0.92	1
C-A						50	76

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	773	0.009	7	0.0	0.0	4.696	A
B-AD	2	0.56	528	0.004	2	0.0	0.0	6.848	A
A-BCD	0	0	1449	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	41	10			41				
D-ABC	0	0	567	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	708	0.009	6	0.0	0.0	5.126	A
C-D	0.75	0.19			0.75				
C-A	41	10			41				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	771	0.010	8	0.0	0.0	4.718	A
B-AD	3	0.67	525	0.005	3	0.0	0.0	6.894	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	49	12			49				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.149	A
C-D	0.90	0.22			0.90				
C-A	49	12			49				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	768	0.013	10	0.0	0.0	4.748	A
B-AD	3	0.83	521	0.006	3	0.0	0.0	6.959	A
A-BCD	0	0	1438	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	61	15			61				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A

C-ABD	9	2	703	0.013	9	0.0	0.0	5.182	A
C-D	1	0.28			1				
C-A	61	15			61				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	10	2	768	0.013	10	0.0	0.0	4.748	A
B-AD	3	0.83	521	0.006	3	0.0	0.0	6.959	A
A-BCD	0	0	1438	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	61	15			61				
D-ABC	0	0	560	0.000	0	0.0	0.0	0.000	A
C-ABD	9	2	703	0.013	9	0.0	0.0	5.182	A
C-D	1	0.28			1				
C-A	61	15			61				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	771	0.010	8	0.0	0.0	4.718	A
B-AD	3	0.67	525	0.005	3	0.0	0.0	6.896	A
A-BCD	0	0	1444	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	49	12			49				
D-ABC	0	0	564	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	706	0.010	7	0.0	0.0	5.149	A
C-D	0.90	0.22			0.90				
C-A	49	12			49				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	7	2	773	0.009	7	0.0	0.0	4.698	A
B-AD	2	0.56	528	0.004	2	0.0	0.0	6.850	A
A-BCD	0	0	1449	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	41	10			41				
D-ABC	0	0	567	0.000	0	0.0	0.0	0.000	A
C-ABD	6	2	708	0.009	6	0.0	0.0	5.126	A
C-D	0.75	0.19			0.75				
C-A	41	10			41				

## Queue Variation Results for each time segment

### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

# 2023HG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.16	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-4	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1100	100.000
B		ONE HOUR	✓	201	100.000
C		ONE HOUR	✓	1033	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	35	1064	1
	B	37	0	163	1
	C	945	72	0	16
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.43	15.53	0.8	3.7	C	150	225
B-AD	0.33	43.01	0.5	1.7	E	34	51
A-BCD	0.00	8.84	0.0	0.5	A	0.92	1
A-B						32	48
A-C						976	1465
D-ABC	0.04	22.35	0.0	0.5	C	6	8
C-ABD	0.18	10.48	0.2	1.0	B	66	99
C-D						15	22
C-A						867	1301

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	123	31	550	0.224	122	0.0	0.3	8.552	A
B-AD	28	7	261	0.108	28	0.0	0.1	15.699	C
A-BCD	0.75	0.19	534	0.001	0.75	0.0	0.0	7.421	A
A-B	26	7			26				
A-C	801	200			801				
D-ABC	5	1	322	0.014	4	0.0	0.0	11.945	B
C-ABD	54	14	528	0.103	54	0.0	0.1	7.963	A
C-D	12	3			12				
C-A	711	178			711				

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	147	37	502	0.293	147	0.3	0.4	10.310	B
B-AD	34	8	205	0.164	33	0.1	0.2	21.300	C
A-BCD	0.90	0.22	498	0.002	0.90	0.0	0.0	7.960	A
A-B	31	8			31				
A-C	957	239			957				
D-ABC	5	1	263	0.020	5	0.0	0.0	14.686	B
C-ABD	65	16	491	0.132	65	0.1	0.2	8.863	A
C-D	14	4			14				
C-A	850	212			850				

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	180	45	419	0.431	179	0.4	0.7	15.233	C
B-AD	41	10	127	0.325	40	0.2	0.5	41.916	E
A-BCD	1	0.28	449	0.002	1	0.0	0.0	8.843	A
A-B	39	10			39				
A-C	1171	293			1171				
D-ABC	7	2	177	0.037	7	0.0	0.0	22.285	C

C-ABD	79	20	440	0.180	79	0.2	0.2	10.459	B
C-D	18	4			18				
C-A	1040	260			1040				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	180	45	416	0.433	180	0.7	0.8	15.534	C
B-AD	41	10	126	0.326	41	0.5	0.5	43.010	E
A-BCD	1	0.28	449	0.002	1	0.0	0.0	8.845	A
A-B	39	10			39				
A-C	1171	293			1171				
D-ABC	7	2	176	0.038	7	0.0	0.0	22.350	C
C-ABD	79	20	440	0.180	79	0.2	0.2	10.483	B
C-D	18	4			18				
C-A	1040	260			1040				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	147	37	501	0.294	148	0.8	0.4	10.462	B
B-AD	34	8	205	0.164	35	0.5	0.2	21.670	C
A-BCD	0.90	0.22	498	0.002	0.90	0.0	0.0	7.962	A
A-B	31	8			31				
A-C	957	239			957				
D-ABC	5	1	263	0.021	5	0.0	0.0	14.724	B
C-ABD	65	16	491	0.132	65	0.2	0.2	8.879	A
C-D	14	4			14				
C-A	850	212			850				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	123	31	549	0.224	124	0.4	0.3	8.634	A
B-AD	28	7	261	0.108	29	0.2	0.1	15.821	C
A-BCD	0.75	0.19	534	0.001	0.75	0.0	0.0	7.427	A
A-B	26	7			26				
A-C	801	200			801				
D-ABC	5	1	321	0.014	5	0.0	0.0	11.964	B
C-ABD	54	14	528	0.103	54	0.2	0.1	7.986	A
C-D	12	3			12				
C-A	711	178			711				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.29	0.00	0.00	0.29	0.29			N/A	N/A
B-AD	0.12	0.00	0.00	0.12	0.12			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.01	0.00	0.00	0.01	0.01			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A



08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.42	0.00	0.00	0.42	0.42			N/A	N/A
B-AD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.02	0.02	0.26	0.48	0.50			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.75	0.03	0.27	0.75	0.75			N/A	N/A
B-AD	0.46	0.03	0.28	0.50	1.50			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.26	0.48	0.50			N/A	N/A
C-ABD	0.23	0.03	0.27	0.49	0.51			N/A	N/A

08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.77	0.03	0.30	1.09	3.69			N/A	N/A
B-AD	0.48	0.03	0.35	1.44	1.69			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.23	0.03	0.29	0.52	0.98			N/A	N/A

08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.43	0.03	0.33	1.09	1.31			N/A	N/A
B-AD	0.21	0.03	0.26	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.30	0.03	0.26	0.48	0.50			N/A	N/A
B-AD	0.13	0.03	0.25	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.12	0.00	0.00	0.12	0.12			N/A	N/A

# 2023HG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		2.29	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-4	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1013	100.000
B		ONE HOUR	✓	179	100.000
C		ONE HOUR	✓	1157	100.000
D		ONE HOUR	✓	3	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	62	949	2
	B	31	0	148	0
	C	990	162	0	5
	D	0	1	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.36	12.59	0.6	2.6	B	136	204
B-AD	0.29	43.08	0.4	1.4	E	28	43
A-BCD	0.01	9.78	0.0	0.5	A	2	3
A-B						57	85
A-C						871	1306
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.39	13.33	0.7	3.1	B	149	223
C-D						5	7
C-A						908	1363

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	111	28	574	0.194	110	0.0	0.2	7.902	A
B-AD	23	6	254	0.092	23	0.0	0.1	15.868	C
A-BCD	2	0.38	506	0.003	1	0.0	0.0	7.847	A
A-B	47	12			47				
A-C	714	179			714				
D-ABC	0	0	301	0.000	0	0.0	0.0	0.000	A
C-ABD	122	30	543	0.225	121	0.0	0.3	8.930	A
C-D	4	0.94			4				
C-A	745	186			745				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	133	33	531	0.250	133	0.2	0.3	9.202	A
B-AD	28	7	198	0.141	28	0.1	0.2	21.552	C
A-BCD	2	0.45	465	0.004	2	0.0	0.0	8.558	A
A-B	56	14			56				
A-C	853	213			853				
D-ABC	0	0	242	0.000	0	0.0	0.0	0.000	A
C-ABD	146	36	509	0.286	145	0.3	0.4	10.380	B
C-D	4	1			4				
C-A	890	222			890				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	163	41	457	0.357	162	0.3	0.6	12.432	B
B-AD	34	9	120	0.286	33	0.2	0.4	42.138	E
A-BCD	2	0.55	407	0.005	2	0.0	0.0	9.772	A
A-B	68	17			68				
A-C	1045	261			1045				
D-ABC	0	0	155	0.000	0	0.0	0.0	0.000	A

C-ABD	178	45	462	0.386	177	0.4	0.6	13.252	B
C-D	6	1			6				
C-A	1090	273			1090				

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	163	41	455	0.358	163	0.6	0.6	12.585	B
B-AD	34	9	119	0.286	34	0.4	0.4	43.082	E
A-BCD	2	0.55	407	0.005	2	0.0	0.0	9.780	A
A-B	68	17			68				
A-C	1045	261			1045				
D-ABC	0	0	155	0.000	0	0.0	0.0	0.000	A
C-ABD	178	45	462	0.386	178	0.6	0.7	13.333	B
C-D	6	1			6				
C-A	1090	273			1090				

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	133	33	530	0.251	134	0.6	0.3	9.291	A
B-AD	28	7	197	0.141	29	0.4	0.2	21.889	C
A-BCD	2	0.45	464	0.004	2	0.0	0.0	8.566	A
A-B	56	14			56				
A-C	853	213			853				
D-ABC	0	0	241	0.000	0	0.0	0.0	0.000	A
C-ABD	146	36	509	0.286	147	0.7	0.4	10.459	B
C-D	4	1			4				
C-A	890	222			890				

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	111	28	574	0.194	112	0.3	0.2	7.960	A
B-AD	23	6	253	0.092	24	0.2	0.1	15.994	C
A-BCD	2	0.38	506	0.003	2	0.0	0.0	7.858	A
A-B	47	12			47				
A-C	714	179			714				
D-ABC	0	0	301	0.000	0	0.0	0.0	0.000	A
C-ABD	122	30	543	0.225	122	0.4	0.3	9.002	A
C-D	4	0.94			4				
C-A	745	186			745				

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.24	0.00	0.00	0.24	0.24			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.30	0.00	0.00	0.30	0.30			N/A	N/A

### 17:00 - 17:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.34	0.00	0.00	0.34	0.34			N/A	N/A
B-AD	0.16	0.00	0.00	0.16	0.16			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.41	0.00	0.00	0.41	0.41			N/A	N/A

### 17:15 - 17:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.55	0.03	0.26	0.55	0.55			N/A	N/A
B-AD	0.38	0.03	0.27	0.49	1.38			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.65	0.03	0.27	0.65	0.65			N/A	N/A

### 17:30 - 17:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.56	0.03	0.31	1.50	2.61			N/A	N/A
B-AD	0.40	0.03	0.34	1.07	1.07			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.65	0.03	0.31	1.46	3.06			N/A	N/A

### 17:45 - 18:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.35	0.00	0.00	0.35	0.35			N/A	N/A
B-AD	0.17	0.03	0.26	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.43	0.03	0.30	0.72	1.15			N/A	N/A

### 18:00 - 18:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.25	0.00	0.00	0.25	0.25			N/A	N/A
B-AD	0.11	0.03	0.26	0.46	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.31	0.03	0.26	0.48	0.50			N/A	N/A

# 2023HG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.58	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	36	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	678	100.000
B		ONE HOUR	✓	139	100.000
C		ONE HOUR	✓	733	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	44	633	1
	B	38	0	98	3
	C	634	88	0	11
	D	2	2	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.19	8.70	0.3	1.2	A	91	137
B-AD	0.16	17.12	0.2	0.5	C	36	54
A-BCD	0.00	7.03	0.0	0.5	A	0.92	1
A-B						40	61
A-C						581	871
D-ABC	0.04	13.54	0.0	0.5	B	9	14
C-ABD	0.18	8.80	0.2	1.0	A	81	121
C-D						10	15
C-A						582	873

## Main Results for each time segment

### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	637	0.118	74	0.0	0.1	7.017	A
B-AD	30	7	362	0.082	29	0.0	0.1	11.860	B
A-BCD	0.75	0.19	585	0.001	0.75	0.0	0.0	6.284	A
A-B	33	8			33				
A-C	477	119			477				
D-ABC	8	2	391	0.019	7	0.0	0.0	10.218	B
C-ABD	66	17	601	0.110	66	0.0	0.1	7.390	A
C-D	8	2			8				
C-A	477	119			477				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	608	0.147	89	0.1	0.2	7.625	A
B-AD	35	9	325	0.109	35	0.1	0.1	13.615	B
A-BCD	0.90	0.22	559	0.002	0.90	0.0	0.0	6.579	A
A-B	40	10			40				
A-C	569	142			569				
D-ABC	9	2	354	0.025	9	0.0	0.0	11.383	B
C-ABD	79	20	578	0.137	79	0.1	0.2	7.930	A
C-D	10	2			10				
C-A	570	142			570				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	565	0.194	110	0.2	0.3	8.681	A
B-AD	43	11	274	0.158	43	0.1	0.2	17.072	C
A-BCD	1	0.28	523	0.002	1	0.0	0.0	7.034	A
A-B	48	12			48				
A-C	697	174			697				
D-ABC	11	3	301	0.037	11	0.0	0.0	13.533	B

C-ABD	97	24	547	0.177	97	0.2	0.2	8.795	A
C-D	12	3			12				
C-A	698	175			698				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	110	27	564	0.195	110	0.3	0.3	8.696	A
B-AD	43	11	274	0.158	43	0.2	0.2	17.119	C
A-BCD	1	0.28	523	0.002	1	0.0	0.0	7.035	A
A-B	48	12			48				
A-C	697	174			697				
D-ABC	11	3	301	0.037	11	0.0	0.0	13.541	B
C-ABD	97	24	547	0.177	97	0.2	0.2	8.804	A
C-D	12	3			12				
C-A	698	175			698				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	90	22	607	0.148	90	0.3	0.2	7.645	A
B-AD	35	9	325	0.109	36	0.2	0.1	13.662	B
A-BCD	0.90	0.22	559	0.002	0.90	0.0	0.0	6.583	A
A-B	40	10			40				
A-C	569	142			569				
D-ABC	9	2	353	0.025	9	0.0	0.0	11.393	B
C-ABD	79	20	578	0.137	79	0.2	0.2	7.942	A
C-D	10	2			10				
C-A	570	142			570				

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	75	19	637	0.118	75	0.2	0.1	7.043	A
B-AD	30	7	361	0.082	30	0.1	0.1	11.905	B
A-BCD	0.75	0.19	585	0.001	0.75	0.0	0.0	6.287	A
A-B	33	8			33				
A-C	477	119			477				
D-ABC	8	2	391	0.019	8	0.0	0.0	10.234	B
C-ABD	66	17	601	0.110	66	0.2	0.1	7.412	A
C-D	8	2			8				
C-A	477	119			477				

## Queue Variation Results for each time segment

### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A



### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.03	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.17	0.00	0.00	0.17	0.17			N/A	N/A

### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.26	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.20	0.03	0.29	0.51	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.23	0.03	0.28	0.51	0.54			N/A	N/A

### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.26	0.03	0.31	0.77	1.22			N/A	N/A
B-AD	0.20	0.03	0.29	0.52	0.54			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.04	0.00	0.00	0.04	0.04			N/A	N/A
C-ABD	0.24	0.03	0.30	0.54	0.96			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
B-AD	0.14	0.00	0.00	0.14	0.14			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.18	0.00	0.00	0.18	0.18			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.15	0.00	0.00	0.15	0.15			N/A	N/A
B-AD	0.10	0.00	0.00	0.10	0.10			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

# 2023G, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.81	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023G	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	66	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	72	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	4	62	0
	B	4	0	10	0
	C	62	9	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

## Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.80	0.0	0.5	A	9	14
B-AD	0.01	6.97	0.0	0.5	A	4	6
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						4	6
A-C						57	85
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.20	0.0	0.5	A	8	12
C-D						0.92	1
C-A						57	85

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	768	0.010	7	0.0	0.0	4.735	A
B-AD	3	0.75	529	0.006	3	0.0	0.0	6.843	A
A-BCD	0	0	1446	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	47	12			47				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	707	0.010	7	0.0	0.0	5.141	A
C-D	0.75	0.19			0.75				
C-A	47	12			47				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	765	0.012	9	0.0	0.0	4.760	A
B-AD	4	0.90	526	0.007	4	0.0	0.0	6.896	A
A-BCD	0	0	1440	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	56	14			56				
D-ABC	0	0	562	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	705	0.011	8	0.0	0.0	5.167	A
C-D	0.90	0.22			0.90				
C-A	56	14			56				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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B-CD	11	3	762	0.014	11	0.0	0.0	4.795	A
B-AD	4	1	521	0.008	4	0.0	0.0	6.972	A
A-BCD	0	0	1433	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	68	17			68				
D-ABC	0	0	558	0.000	0	0.0	0.0	0.000	A
C-ABD	10	2	702	0.014	10	0.0	0.0	5.203	A
C-D	1	0.28			1				
C-A	68	17			68				

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	11	3	762	0.014	11	0.0	0.0	4.795	A
B-AD	4	1	521	0.008	4	0.0	0.0	6.972	A
A-BCD	0	0	1433	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	68	17			68				
D-ABC	0	0	558	0.000	0	0.0	0.0	0.000	A
C-ABD	10	2	702	0.014	10	0.0	0.0	5.203	A
C-D	1	0.28			1				
C-A	68	17			68				

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	765	0.012	9	0.0	0.0	4.762	A
B-AD	4	0.90	526	0.007	4	0.0	0.0	6.899	A
A-BCD	0	0	1440	0.000	0	0.0	0.0	0.000	A
A-B	4	0.90			4				
A-C	56	14			56				
D-ABC	0	0	562	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	705	0.011	8	0.0	0.0	5.167	A
C-D	0.90	0.22			0.90				
C-A	56	14			56				

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	768	0.010	8	0.0	0.0	4.735	A
B-AD	3	0.75	529	0.006	3	0.0	0.0	6.845	A
A-BCD	0	0	1446	0.000	0	0.0	0.0	0.000	A
A-B	3	0.75			3				
A-C	47	12			47				
D-ABC	0	0	566	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	707	0.010	7	0.0	0.0	5.143	A
C-D	0.75	0.19			0.75				

C-A	47	12			47				
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### Queue Variation Results for each time segment

#### 22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

#### 23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

#### 23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A

C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
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### 00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

## 2037HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		26.72	D

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1344	100.000
B		ONE HOUR	✓	219	100.000
C		ONE HOUR	✓	1222	100.000
D		ONE HOUR	✓	6	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	42	1301	1
	B	43	0	175	1
	C	1125	79	0	18
	D	2	2	2	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	1.21	313.56	19.1	41.4	F	161	242
B-AD	1.12	416.13	5.8	16.4	F	40	60
A-BCD	0.00	9.92	0.0	0.5	A	0.92	1
A-B						39	58
A-C						1194	1791
D-ABC	0.12	74.52	0.1	0.6	F	6	8
C-ABD	0.23	12.98	0.3	1.4	B	72	109
C-D						17	25
C-A						1032	1548

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	498	0.266	131	0.0	0.4	9.968	A
B-AD	33	8	205	0.160	32	0.0	0.2	21.176	C
A-BCD	0.75	0.19	501	0.002	0.75	0.0	0.0	7.915	A
A-B	32	8			32				

A-C	979	245			979				
D-ABC	5	1	264	0.017	4	0.0	0.0	14.583	B
C-ABD	59	15	486	0.122	59	0.0	0.1	8.846	A
C-D	14	3			14				
C-A	847	212			847				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	158	39	428	0.369	157	0.4	0.6	13.528	B
B-AD	39	10	137	0.285	38	0.2	0.4	36.931	E
A-BCD	0.90	0.22	459	0.002	0.90	0.0	0.0	8.651	A
A-B	38	9			38				
A-C	1170	292			1170				
D-ABC	5	1	190	0.028	5	0.0	0.0	20.519	C
C-ABD	71	18	441	0.161	71	0.1	0.2	10.217	B
C-D	16	4			16				
C-A	1011	253			1011				

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	194	48	169	1.144	156	0.6	10.1	161.184	F
B-AD	47	12	42	1.121	34	0.4	3.7	302.506	F
A-BCD	1	0.28	400	0.003	1	0.0	0.0	9.921	A
A-B	46	12			46				
A-C	1432	358			1432				
D-ABC	7	2	70	0.094	6	0.0	0.1	59.043	F
C-ABD	87	22	378	0.230	87	0.2	0.3	12.947	B
C-D	20	5			20				
C-A	1239	310			1239				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	194	48	160	1.207	158	10.1	19.1	313.558	F
B-AD	47	12	43	1.111	39	3.7	5.8	416.127	F
A-BCD	1	0.28	400	0.003	1	0.0	0.0	9.924	A
A-B	46	12			46				
A-C	1432	358			1432				
D-ABC	7	2	57	0.116	7	0.1	0.1	74.518	F
C-ABD	87	22	378	0.230	87	0.3	0.3	12.985	B
C-D	20	5			20				
C-A	1239	310			1239				

#### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
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B-CD	158	39	376	0.420	231	19.1	0.8	40.503	E
B-AD	39	10	118	0.329	60	5.8	0.5	79.693	F
A-BCD	0.90	0.22	458	0.002	0.90	0.0	0.0	8.655	A
A-B	38	9			38				
A-C	1170	292			1170				
D-ABC	5	1	176	0.031	6	0.1	0.0	22.262	C
C-ABD	71	18	441	0.161	71	0.3	0.2	10.255	B
C-D	16	4			16				
C-A	1011	253			1011				

#### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	132	33	495	0.267	134	0.8	0.4	10.197	B
B-AD	33	8	204	0.160	34	0.5	0.2	21.742	C
A-BCD	0.75	0.19	501	0.002	0.75	0.0	0.0	7.921	A
A-B	32	8			32				
A-C	979	245			979				
D-ABC	5	1	264	0.017	5	0.0	0.0	14.634	B
C-ABD	59	15	486	0.122	60	0.2	0.1	8.878	A
C-D	14	3			14				
C-A	847	212			847				

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.36	0.03	0.27	0.49	0.72			N/A	N/A
B-AD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.14	0.00	0.00	0.14	0.14			N/A	N/A

#### 08:00 - 08:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.58	0.03	0.33	1.21	2.58			N/A	N/A
B-AD	0.39	0.03	0.34	1.25	1.50			N/A	N/A
A-BCD	0.00	0.00	0.28	0.50	0.52			N/A	N/A
D-ABC	0.03	0.03	0.26	0.48	0.50			N/A	N/A
C-ABD	0.20	0.00	0.00	0.20	0.20			N/A	N/A

#### 08:15 - 08:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	10.13	1.06	7.84	19.69	24.33			N/A	N/A

B-AD	3.71	0.22	2.15	7.92	10.37			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.10	0.03	0.28	0.50	0.58			N/A	N/A
C-ABD	0.31	0.03	0.27	0.49	0.51			N/A	N/A

#### 08:30 - 08:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	19.11	4.01	16.20	34.55	41.44			N/A	N/A
B-AD	5.76	0.34	3.61	12.58	16.40			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.13	0.03	0.26	0.47	0.50			N/A	N/A
C-ABD	0.31	0.03	0.32	1.09	1.40			N/A	N/A

#### 08:45 - 09:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.77	0.03	0.29	1.01	3.10			N/A	N/A
B-AD	0.55	0.03	0.29	0.99	2.32			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.00	0.00	0.20	0.20			N/A	N/A

#### 09:00 - 09:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.38	0.03	0.27	0.48	0.50			N/A	N/A
B-AD	0.20	0.03	0.26	0.47	0.50			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

## 2037HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		31.38	D

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-21	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1234	100.000
B		ONE HOUR	✓	200	100.000
C		ONE HOUR	✓	1413	100.000
D		ONE HOUR	✓	4	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	73	1158	3
	B	37	0	163	0
	C	1230	178	0	5
	D	0	1	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	2	15	10
	B	2	0	2	0
	C	15	5	0	10
	D	2	0	15	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
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B-CD	1.35	412.53	24.5	47.9	F	150	224
B-AD	1.25	509.33	6.4	17.2	F	34	51
A-BCD	0.01	11.75	0.0	0.5	B	3	4
A-B						67	100
A-C						1063	1594
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.48	18.00	1.0	4.3	C	163	245
C-D						5	7
C-A						1129	1693

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	123	31	526	0.233	121	0.0	0.3	9.040	A
B-AD	28	7	194	0.144	27	0.0	0.2	21.929	C
A-BCD	2	0.56	461	0.005	2	0.0	0.0	8.639	A
A-B	55	14			55				
A-C	872	218			872				
D-ABC	0	0	235	0.000	0	0.0	0.0	0.000	A
C-ABD	134	34	505	0.266	133	0.0	0.4	10.120	B
C-D	4	0.94			4				
C-A	926	232			926				

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	147	37	462	0.317	146	0.3	0.5	11.603	B
B-AD	33	8	125	0.265	33	0.2	0.3	39.225	E
A-BCD	3	0.67	410	0.007	3	0.0	0.0	9.720	A
A-B	66	16			66				
A-C	1041	260			1041				
D-ABC	0	0	158	0.000	0	0.0	0.0	0.000	A
C-ABD	160	40	463	0.346	159	0.4	0.5	12.416	B
C-D	4	1			4				
C-A	1106	276			1106				

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	179	45	140	1.282	131	0.5	12.6	221.442	F
B-AD	41	10	33	1.252	27	0.3	3.9	393.527	F
A-BCD	3	0.83	341	0.010	3	0.0	0.0	11.736	B

A-B	80	20			80				
A-C	1275	319			1275				
D-ABC	0	0	34	0.000	0	0.0	0.0	0.000	A
C-ABD	196	49	406	0.483	194	0.5	0.9	17.750	C
C-D	6	1			6				
C-A	1354	339			1354				

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	179	45	133	1.347	132	12.6	24.5	412.532	F
B-AD	41	10	33	1.249	31	3.9	6.4	509.330	F
A-BCD	3	0.83	340	0.010	3	0.0	0.0	11.755	B
A-B	80	20			80				
A-C	1275	319			1275				
D-ABC	0	0	7	0.000	0	0.0	0.0	0.000	A
C-ABD	196	49	406	0.483	196	0.9	1.0	18.004	C
C-D	6	1			6				
C-A	1354	339			1354				

### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	147	37	393	0.373	242	24.5	0.6	44.856	E
B-AD	33	8	107	0.311	57	6.4	0.5	98.458	F
A-BCD	3	0.67	409	0.007	3	0.0	0.0	9.739	A
A-B	66	16			66				
A-C	1041	260			1041				
D-ABC	0	0	145	0.000	0	0.0	0.0	0.000	A
C-ABD	160	40	463	0.346	162	1.0	0.6	12.605	B
C-D	4	1			4				
C-A	1106	276			1106				

### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	123	31	524	0.234	124	0.6	0.3	9.204	A
B-AD	28	7	193	0.144	29	0.5	0.2	22.532	C
A-BCD	2	0.56	460	0.005	2	0.0	0.0	8.655	A
A-B	55	14			55				
A-C	872	218			872				
D-ABC	0	0	234	0.000	0	0.0	0.0	0.000	A
C-ABD	134	34	505	0.266	135	0.6	0.4	10.242	B
C-D	4	0.94			4				
C-A	926	232			926				

## Queue Variation Results for each time segment



B-CD	0.32	0.03	0.26	0.47	0.50			N/A	N/A
B-AD	0.18	0.03	0.26	0.47	0.49			N/A	N/A
A-BCD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.39	0.03	0.34	1.12	1.35			N/A	N/A

## 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		1.74	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	16	Stream B-AD

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	815	100.000
B		ONE HOUR	✓	153	100.000
C		ONE HOUR	✓	866	100.000
D		ONE HOUR	✓	10	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	51	763	1
	B	44	0	106	3
	C	759	95	0	12
	D	2	2	6	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	5	10	2
	B	10	0	10	0
	C	10	10	0	5
	D	10	5	10	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.23	10.03	0.3	1.5	B	99	148
B-AD	0.22	22.88	0.3	1.4	C	42	62
A-BCD	0.00	7.53	0.0	0.5	A	0.92	1
A-B						47	70
A-C						700	1050
D-ABC	0.04	16.64	0.1	0.5	C	9	14
C-ABD	0.20	9.72	0.3	1.3	A	87	131
C-D						11	17
C-A						696	1045

### Main Results for each time segment

#### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	607	0.133	80	0.0	0.2	7.493	A
B-AD	34	9	327	0.104	34	0.0	0.1	13.422	B
A-BCD	0.75	0.19	561	0.001	0.75	0.0	0.0	6.548	A
A-B	38	10			38				
A-C	574	144			574				



D-ABC	8	2	356	0.021	7	0.0	0.0	11.255	B
C-ABD	72	18	577	0.124	71	0.0	0.2	7.811	A
C-D	9	2			9				
C-A	571	143			571				

### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	97	24	571	0.170	97	0.2	0.2	8.339	A
B-AD	41	10	284	0.144	40	0.1	0.2	16.234	C
A-BCD	0.90	0.22	531	0.002	0.90	0.0	0.0	6.929	A
A-B	46	11			46				
A-C	686	171			686				
D-ABC	9	2	311	0.029	9	0.0	0.0	12.999	B
C-ABD	85	21	550	0.155	85	0.2	0.2	8.519	A
C-D	11	3			11				
C-A	682	171			682				

### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	119	30	513	0.231	118	0.2	0.3	9.995	A
B-AD	50	12	222	0.224	49	0.2	0.3	22.734	C
A-BCD	1	0.28	489	0.002	1	0.0	0.0	7.531	A
A-B	56	14			56				
A-C	840	210			840				
D-ABC	11	3	247	0.045	11	0.0	0.0	16.618	C
C-ABD	105	26	512	0.204	104	0.2	0.3	9.698	A
C-D	13	3			13				
C-A	836	209			836				

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	119	30	513	0.232	119	0.3	0.3	10.031	B
B-AD	50	12	222	0.224	50	0.3	0.3	22.879	C
A-BCD	1	0.28	488	0.002	1	0.0	0.0	7.533	A
A-B	56	14			56				
A-C	840	210			840				
D-ABC	11	3	247	0.045	11	0.0	0.1	16.640	C
C-ABD	105	26	512	0.204	105	0.3	0.3	9.720	A
C-D	13	3			13				
C-A	836	209			836				

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	97	24	570	0.170	97	0.3	0.2	8.374	A

B-AD	41	10	283	0.144	41	0.3	0.2	16.339	C
A-BCD	0.90	0.22	531	0.002	0.90	0.0	0.0	6.931	A
A-B	46	11			46				
A-C	686	171			686				
D-ABC	9	2	310	0.029	9	0.1	0.0	13.021	B
C-ABD	85	21	550	0.155	86	0.3	0.2	8.537	A
C-D	11	3			11				
C-A	682	171			682				

#### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	81	20	607	0.134	81	0.2	0.2	7.529	A
B-AD	34	9	327	0.104	34	0.2	0.1	13.497	B
A-BCD	0.75	0.19	561	0.001	0.75	0.0	0.0	6.554	A
A-B	38	10			38				
A-C	574	144			574				
D-ABC	8	2	356	0.021	8	0.0	0.0	11.276	B
C-ABD	72	18	577	0.124	72	0.2	0.2	7.836	A
C-D	9	2			9				
C-A	571	143			571				

### Queue Variation Results for each time segment

#### 12:45 - 13:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.15	0.00	0.00	0.15	0.15			N/A	N/A

#### 13:00 - 13:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.22	0.00	0.00	0.22	0.22			N/A	N/A
B-AD	0.18	0.00	0.00	0.18	0.18			N/A	N/A
A-BCD	0.00	0.00	0.26	0.46	0.48			N/A	N/A
D-ABC	0.03	0.03	0.27	0.49	0.52			N/A	N/A
C-ABD	0.20	0.00	0.00	0.20	0.20			N/A	N/A

#### 13:15 - 13:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.33	0.03	0.28	0.51	0.53			N/A	N/A
B-AD	0.31	0.03	0.29	0.52	0.55			N/A	N/A

A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.05	0.03	0.28	0.50	0.53			N/A	N/A
C-ABD	0.28	0.03	0.28	0.51	0.54			N/A	N/A

### 13:30 - 13:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.33	0.03	0.34	1.15	1.48			N/A	N/A
B-AD	0.31	0.03	0.34	1.10	1.43			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.05	0.00	0.00	0.05	0.05			N/A	N/A
C-ABD	0.28	0.03	0.32	0.95	1.32			N/A	N/A

### 13:45 - 14:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.23	0.00	0.00	0.23	0.23			N/A	N/A
B-AD	0.19	0.00	0.00	0.19	0.19			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.03	0.00	0.00	0.03	0.03			N/A	N/A
C-ABD	0.20	0.00	0.00	0.20	0.20			N/A	N/A

### 14:00 - 14:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.17	0.00	0.00	0.17	0.17			N/A	N/A
B-AD	0.13	0.00	0.00	0.13	0.13			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.02	0.00	0.00	0.02	0.02			N/A	N/A
C-ABD	0.16	0.00	0.00	0.16	0.16			N/A	N/A

## 2037HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue Variations cannot be calculated for crossroads.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Crossroads	Two-way		0.69	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	80	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	84	100.000
D		ONE HOUR	✓	1	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	5	75	0
	B	4	0	10	0
	C	74	9	0	1
	D	0	0	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	10	0
	B	0	0	0	0
	C	10	0	0	0
	D	0	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.01	4.82	0.0	0.5	A	9	14

B-AD	0.01	7.04	0.0	0.5	A	4	6
A-BCD	0.00	0.00	0.0	~1	A	0	0
A-B						5	7
A-C						69	103
D-ABC	0.00	0.00	0.0	~1	A	0	0
C-ABD	0.01	5.23	0.0	0.5	A	8	12
C-D						0.92	1
C-A						68	102

## Main Results for each time segment

### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	765	0.010	7	0.0	0.0	4.750	A
B-AD	3	0.75	526	0.006	3	0.0	0.0	6.886	A
A-BCD	0	0	1441	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	56	14			56				
D-ABC	0	0	562	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.158	A
C-D	0.75	0.19			0.75				
C-A	56	14			56				

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	762	0.012	9	0.0	0.0	4.779	A
B-AD	4	0.90	522	0.007	4	0.0	0.0	6.949	A
A-BCD	0	0	1435	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	67	17			67				
D-ABC	0	0	559	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	702	0.012	8	0.0	0.0	5.188	A
C-D	0.90	0.22			0.90				
C-A	67	17			67				

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	11	3	758	0.015	11	0.0	0.0	4.819	A
B-AD	4	1	516	0.009	4	0.0	0.0	7.037	A
A-BCD	0	0	1427	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				

A-C	83	21			83				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	10	2	698	0.014	10	0.0	0.0	5.230	A
C-D	1	0.28			1				
C-A	81	20			81				

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	11	3	758	0.015	11	0.0	0.0	4.819	A
B-AD	4	1	516	0.009	4	0.0	0.0	7.037	A
A-BCD	0	0	1427	0.000	0	0.0	0.0	0.000	A
A-B	6	1			6				
A-C	83	21			83				
D-ABC	0	0	553	0.000	0	0.0	0.0	0.000	A
C-ABD	10	2	698	0.014	10	0.0	0.0	5.230	A
C-D	1	0.28			1				
C-A	81	20			81				

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	9	2	762	0.012	9	0.0	0.0	4.779	A
B-AD	4	0.90	522	0.007	4	0.0	0.0	6.951	A
A-BCD	0	0	1435	0.000	0	0.0	0.0	0.000	A
A-B	4	1			4				
A-C	67	17			67				
D-ABC	0	0	559	0.000	0	0.0	0.0	0.000	A
C-ABD	8	2	702	0.012	8	0.0	0.0	5.188	A
C-D	0.90	0.22			0.90				
C-A	67	17			67				

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-CD	8	2	765	0.010	8	0.0	0.0	4.751	A
B-AD	3	0.75	526	0.006	3	0.0	0.0	6.886	A
A-BCD	0	0	1441	0.000	0	0.0	0.0	0.000	A
A-B	4	0.94			4				
A-C	56	14			56				
D-ABC	0	0	562	0.000	0	0.0	0.0	0.000	A
C-ABD	7	2	705	0.010	7	0.0	0.0	5.159	A
C-D	0.75	0.19			0.75				
C-A	56	14			56				

## Queue Variation Results for each time segment

22:45 - 23:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:00 - 23:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
B-AD	0.01	0.01	0.25	0.45	0.48			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.01	0.25	0.45	0.48			N/A	N/A

23:15 - 23:30

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:30 - 23:45

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

23:45 - 00:00

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

00:00 - 00:15

Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
B-CD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
B-AD	0.01	0.00	0.00	0.01	0.01			N/A	N/A
A-BCD	0.00	0.00	0.00	0.00	0.00			N/A	N/A
D-ABC	0.00	0.00	0.00	0.00	0.00			N/A	N/A
C-ABD	0.01	0.00	0.00	0.01	0.01			N/A	N/A

<b>B-CD</b>	0.01	0.00	0.00	0.01	0.01			N/A	N/A
<b>B-AD</b>	0.01	0.00	0.00	0.01	0.01			N/A	N/A
<b>A-BCD</b>	0.00	0.00	0.00	0.00	0.00			N/A	N/A
<b>D-ABC</b>	0.00	0.00	0.00	0.00	0.00			N/A	N/A
<b>C-ABD</b>	0.01	0.00	0.00	0.01	0.01			N/A	N/A

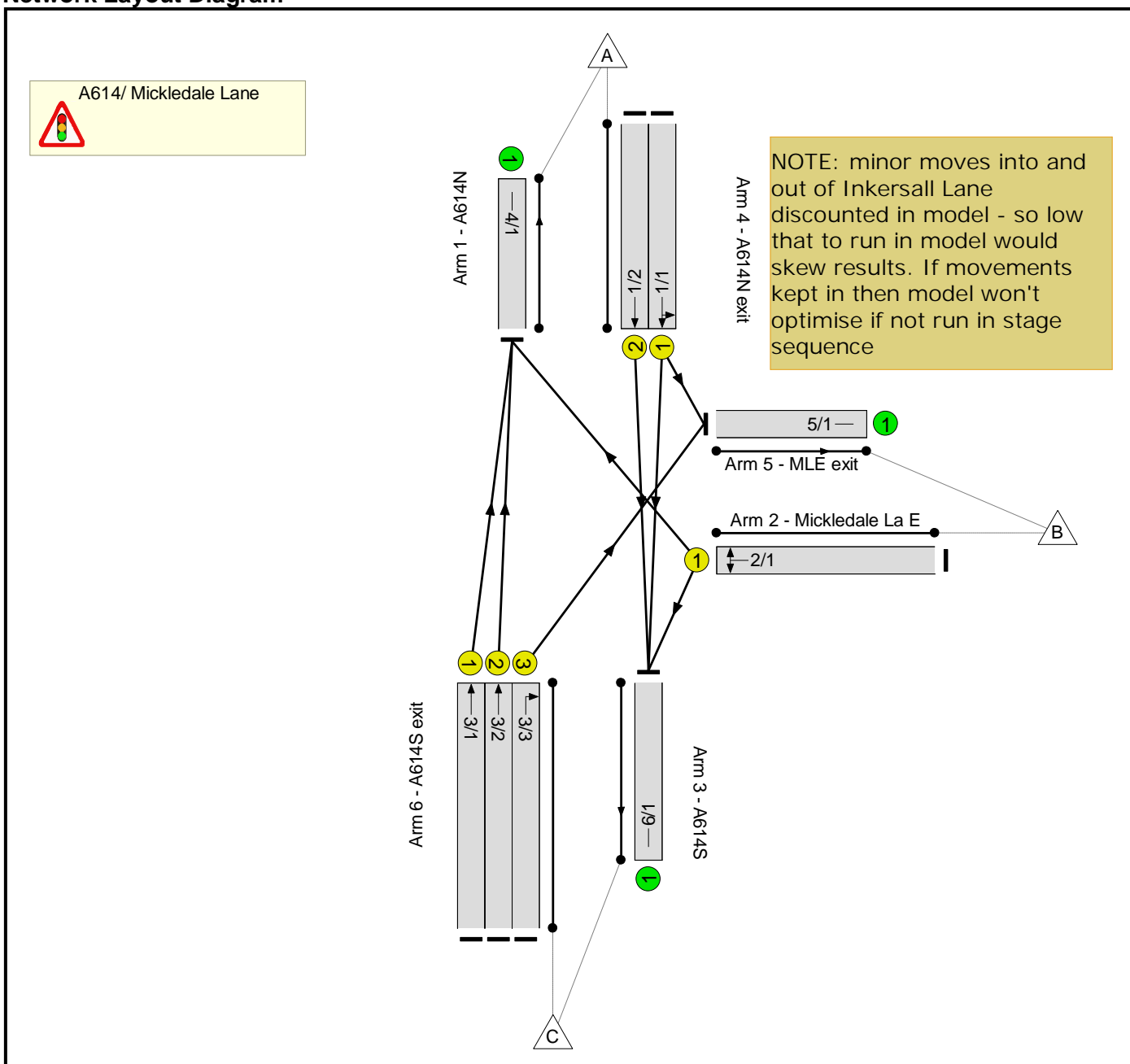


Full Input Data And Results  
**Full Input Data And Results**

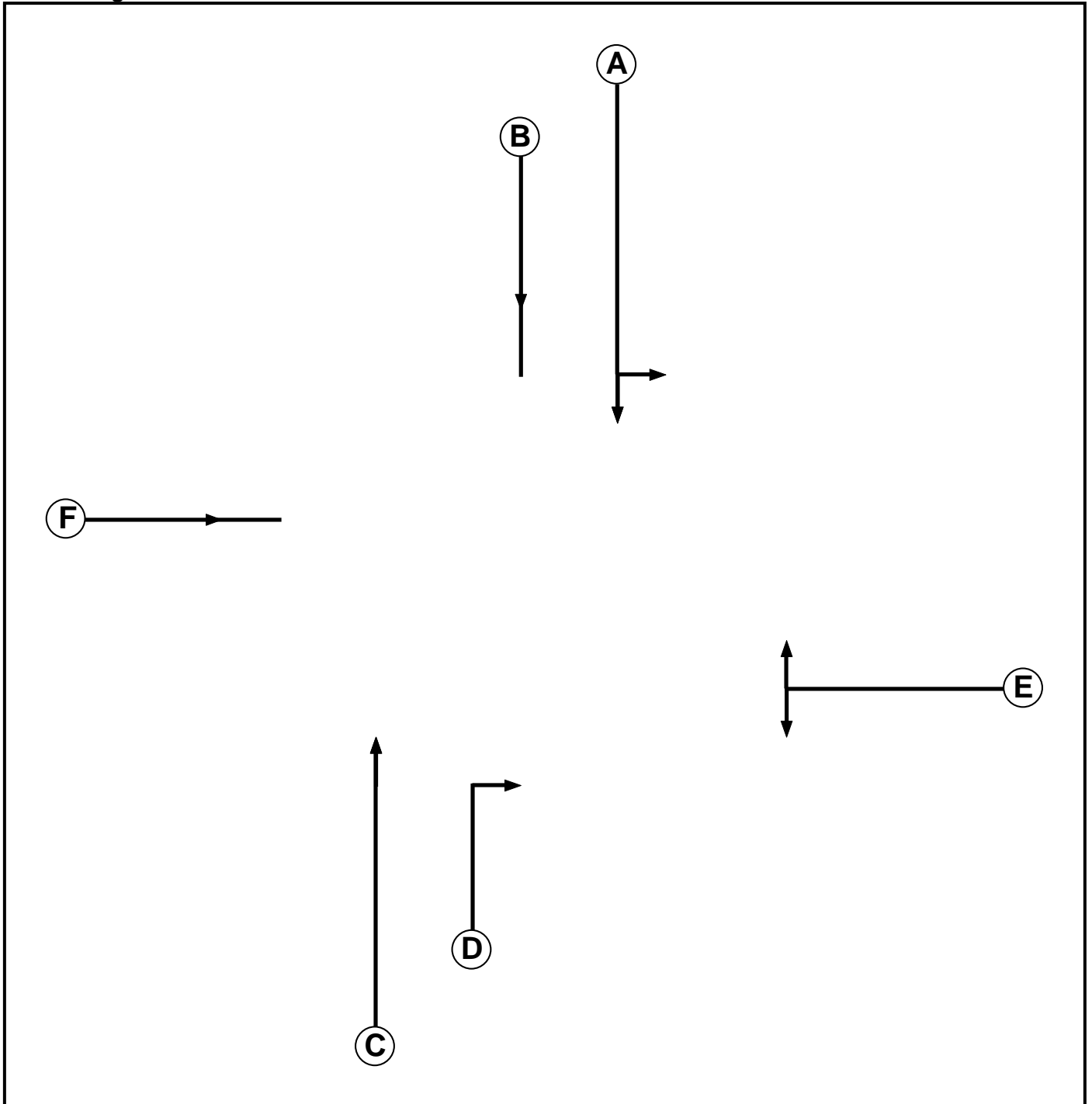
**User and Project Details**

<b>Project:</b>	<b>A614/ A617 tests 2 lanes</b>
<b>Title:</b>	<b>A614/ Mickledale Lane - no minor moves</b>
<b>Location:</b>	
<b>File name:</b>	V4.1_A614-Mickledale 2 lane aheads minor moves removed.lsg3x
<b>Author:</b>	rr
<b>Company:</b>	via
<b>Address:</b>	tbh
<b>Notes:</b>	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7

Full Input Data And Results

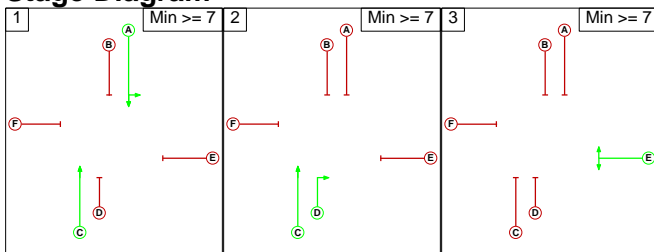
**Phase Intergrens Matrix**

Terminating Phase	Starting Phase						
		A	B	C	D	E	F
	A		-	-	7	7	7
	B	-		7	5	7	7
	C	-	7		-	7	7
	D	7	5	-		7	7
	E	8	8	8	8		8
	F	8	8	8	8	8	

**Phases in Stage**

Stage No.	Phases in Stage
1	A C
2	C D
3	E

**Stage Diagram**



**Phase Delays**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

**Prohibited Stage Change**

From Stage	To Stage			
		1	2	3
	1		7	7
	2	7		7
3	8	8		

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: A614/ Mickledale Lane**

There are no Opposed Lanes in this Junction

## Full Input Data And Results

## Lane Input Data

Junction: A614/ Mickledale Lane												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A614N)	U	A	2	3	60.0	User	1900	-	-	-	-	-
1/2 (A614N)	U	A	2	3	60.0	User	1900	-	-	-	-	-
2/1 (Mickledale La E)	U	E	2	3	60.0	User	1800	-	-	-	-	-
3/1 (A614S)	U	C	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A614S)	U	C	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A614S)	U	D	2	3	60.0	User	1800	-	-	-	-	-
4/1 (A614N exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (MLE exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A614S exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2023am'	08:00	09:00	01:00	
2: '2023pm'	17:00	18:00	01:00	
3: '2023ip'	13:00	14:00	01:00	
4: '2023op'	23:00	00:00	01:00	
5: '2037am'	08:00	09:00	01:00	
6: '2037pm'	17:00	18:00	01:00	
7: '2037ip'	13:00	14:00	01:00	
8: '2037op'	23:00	00:00	01:00	
9: '2037am final'	08:00	09:00	01:00	
10: '2037pm final'	17:00	18:00	01:00	
11: '2037ip final'	13:00	14:00	01:00	
12: '2037op final'	23:00	00:00	01:00	
13: '2023amLG'	08:00	09:00	01:00	
14: '2023pmLG'	17:00	18:00	01:00	
15: '2023ipLG'	13:00	14:00	01:00	
16: '2023opLG'	23:00	00:00	01:00	
17: '2037amLG'	08:00	09:00	01:00	
18: '2037pmLG'	17:00	18:00	01:00	
19: '2037ipLG'	13:00	14:00	01:00	
20: '2037opLG'	23:00	00:00	01:00	
21: '2023amHG'	08:00	09:00	01:00	
22: '2023pmHG'	17:00	18:00	01:00	
23: '2023ipHG'	13:00	14:00	01:00	
24: '2023opHG'	23:00	00:00	01:00	
25: '2037amHG'	08:00	09:00	01:00	
26: '2037pmHG'	17:00	18:00	01:00	
27: '2037ipHG'	13:00	14:00	01:00	
28: '2037opHG'	23:00	00:00	01:00	

## Full Input Data And Results

**Scenario 1: '2023am'** (FG1: '2023am', Plan 1: 'all stages')

### Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	33	1012	1045
	B	35	0	157	192
	C	914	69	0	983
	Tot.	949	102	1169	2220

### Traffic Lane Flows

Lane	Scenario 1: 2023am
<b>Junction: A614/ Mickledale Lane</b>	
1/1	523
1/2	522
2/1	192
3/1	457
3/2	457
3/3	69
4/1	949
5/1	102
6/1	1169

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 2: '2023pm'** (FG2: '2023pm', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	58	898	956
	B	29	0	140	169
	C	941	154	0	1095
	Tot.	970	212	1038	2220

**Traffic Lane Flows**

Lane	Scenario 2: 2023pm
<b>Junction: A614/ Mickledale Lane</b>	
1/1	478
1/2	478
2/1	169
3/1	471
3/2	470
3/3	154
4/1	970
5/1	212
6/1	1038



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 3: '2023ip'** (FG3: '2023ip', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	42	602	644
	B	36	0	97	133
	C	612	84	0	696
	Tot.	648	126	699	1473

**Traffic Lane Flows**

Lane	Scenario 3: 2023ip
<b>Junction: A614/ Mickledale Lane</b>	
1/1	322
1/2	322
2/1	133
3/1	306
3/2	306
3/3	84
4/1	648
5/1	126
6/1	699

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 4: '2023op'** (FG4: '2023op', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	4	59	63
	B	4	0	9	13
	C	60	8	0	68
	Tot.	64	12	68	144

**Traffic Lane Flows**

Lane	Scenario 4: 2023op
<b>Junction: A614/ Mickledale Lane</b>	
1/1	31
1/2	32
2/1	13
3/1	30
3/2	30
3/3	8
4/1	64
5/1	12
6/1	68

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 5: '2037am'** (FG5: '2037am', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	34	1050	1084
	B	35	0	160	195
	C	948	71	0	1019
	Tot.	983	105	1210	2298

**Traffic Lane Flows**

Lane	Scenario 5: 2037am
<b>Junction: A614/ Mickledale Lane</b>	
1/1	542
1/2	542
2/1	195
3/1	474
3/2	474
3/3	71
4/1	983
5/1	105
6/1	1210

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 6: '2037pm'** (FG6: '2037pm', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	58	919	977
	B	29	0	143	172
	C	961	156	0	1117
	Tot.	990	214	1062	2266

**Traffic Lane Flows**

Lane	Scenario 6: 2037pm
<b>Junction: A614/ Mickledale Lane</b>	
1/1	489
1/2	488
2/1	172
3/1	481
3/2	480
3/3	156
4/1	990
5/1	214
6/1	1062

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 7: '2037ip'** (FG7: '2037ip', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	42	623	665
	B	37	0	99	136
	C	632	86	0	718
	Tot.	669	128	722	1519

**Traffic Lane Flows**

Lane	Scenario 7: 2037ip
<b>Junction: A614/ Mickledale Lane</b>	
1/1	332
1/2	333
2/1	136
3/1	316
3/2	316
3/3	86
4/1	669
5/1	128
6/1	722

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 8: '2037op'** (FG8: '2037op', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	4	61	65
	B	4	0	9	13
	C	62	8	0	70
	Tot.	66	12	70	148

**Traffic Lane Flows**

Lane	Scenario 8: 2037op
<b>Junction: A614/ Mickledale Lane</b>	
1/1	32
1/2	33
2/1	13
3/1	31
3/2	31
3/3	8
4/1	66
5/1	12
6/1	70

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 9: '2037am final'** (FG9: '2037am final', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	38	1200	1238
	B	39	0	162	201
	C	1051	73	0	1124
	Tot.	1090	111	1362	2563

**Traffic Lane Flows**

Lane	Scenario 9: 2037am final
<b>Junction: A614/ Mickledale Lane</b>	
1/1	619
1/2	619
2/1	201
3/1	526
3/2	525
3/3	73
4/1	1090
5/1	111
6/1	1362

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 10: '2037pm final'** (FG10: '2037pm final', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	65	1041	1106
	B	33	0	147	180
	C	1113	161	0	1274
	Tot.	1146	226	1188	2560

**Traffic Lane Flows**

Lane	Scenario 10: 2037pm final
<b>Junction: A614/ Mickledale Lane</b>	
1/1	553
1/2	553
2/1	180
3/1	557
3/2	556
3/3	161
4/1	1146
5/1	226
6/1	1188



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 11: '2037ip final'** (FG11: '2037ip final', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	47	702	749
	B	40	0	101	141
	C	709	87	0	796
	Tot.	749	134	803	1686

**Traffic Lane Flows**

Lane	Scenario 11: 2037ip final
<b>Junction: A614/ Mickledale Lane</b>	
1/1	375
1/2	374
2/1	141
3/1	355
3/2	354
3/3	87
4/1	749
5/1	134
6/1	803

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 12: '2037op final'** (FG12: '2037op final', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	5	69	74
	B	4	0	10	14
	C	69	9	0	78
	Tot.	73	14	79	166

**Traffic Lane Flows**

Lane	Scenario 12: 2037op final
<b>Junction: A614/ Mickledale Lane</b>	
1/1	36
1/2	38
2/1	14
3/1	35
3/2	34
3/3	9
4/1	73
5/1	14
6/1	79

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 13: '2023amLG'** (FG13: '2023amLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	32	961	993
	B	34	0	150	184
	C	867	66	0	933
	Tot.	901	98	1111	2110

**Traffic Lane Flows**

Lane	Scenario 13: 2023amLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	496
1/2	497
2/1	184
3/1	434
3/2	433
3/3	66
4/1	901
5/1	98
6/1	1111

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 14: '2023pmLG'** (FG14: '2023pmLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	55	847	902
	B	27	0	133	160
	C	888	146	0	1034
	Tot.	915	201	980	2096

**Traffic Lane Flows**

Lane	Scenario 14: 2023pmLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	451
1/2	451
2/1	160
3/1	444
3/2	444
3/3	146
4/1	915
5/1	201
6/1	980

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 15: '2023ipLG'** (FG15: '2023ipLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	40	571	611
	B	34	0	92	126
	C	581	80	0	661
	Tot.	615	120	663	1398

**Traffic Lane Flows**

Lane	Scenario 15: 2023ipLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	306
1/2	305
2/1	126
3/1	291
3/2	290
3/3	80
4/1	615
5/1	120
6/1	663

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 16: '2023opLG'** (FG16: '2023opLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	4	56	60
	B	3	0	9	12
	C	56	8	0	64
	Tot.	59	12	65	136

**Traffic Lane Flows**

Lane	Scenario 16: 2023opLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	29
1/2	31
2/1	12
3/1	28
3/2	28
3/3	8
4/1	59
5/1	12
6/1	65

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 17: '2037amLG'** (FG17: '2037amLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	30	949	979
	B	32	0	147	179
	C	856	65	0	921
	Tot.	888	95	1096	2079

**Traffic Lane Flows**

Lane	Scenario 17: 2037amLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	489
1/2	490
2/1	179
3/1	428
3/2	428
3/3	65
4/1	888
5/1	95
6/1	1096

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 18: '2037pmLG'** (FG18: '2037pmLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	52	829	881
	B	26	0	130	156
	C	867	143	0	1010
	Tot.	893	195	959	2047

**Traffic Lane Flows**

Lane	Scenario 18: 2037pmLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	440
1/2	441
2/1	156
3/1	434
3/2	433
3/3	143
4/1	893
5/1	195
6/1	959



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 19: '2037ipLG'** (FG19: '2037ipLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	38	563	601
	B	33	0	91	124
	C	570	79	0	649
	Tot.	603	117	654	1374

**Traffic Lane Flows**

Lane	Scenario 19: 2037ipLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	301
1/2	300
2/1	124
3/1	285
3/2	285
3/3	79
4/1	603
5/1	117
6/1	654

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 20: '2037opLG'** (FG20: '2037opLG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	4	55	59
	B	3	0	9	12
	C	56	8	0	64
	Tot.	59	12	64	135

**Traffic Lane Flows**

Lane	Scenario 20: 2037opLG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	29
1/2	30
2/1	12
3/1	28
3/2	28
3/3	8
4/1	59
5/1	12
6/1	64

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 21: '2023amHG' (FG21: '2023amHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

Desired Flow :

	Destination				
		A	B	C	Tot.
Origin	A	0	35	1064	1099
	B	37	0	164	201
	C	961	72	0	1033
	Tot.	998	107	1228	2333

**Traffic Lane Flows**

Lane	Scenario 21: 2023amHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	550
1/2	549
2/1	201
3/1	481
3/2	480
3/3	72
4/1	998
5/1	107
6/1	1228

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 22: '2023pmHG'** (FG22: '2023pmHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	63	949	1012
	B	31	0	148	179
	C	995	162	0	1157
	Tot.	1026	225	1097	2348

**Traffic Lane Flows**

Lane	Scenario 22: 2023pmHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	506
1/2	506
2/1	179
3/1	498
3/2	497
3/3	162
4/1	1026
5/1	225
6/1	1097

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 23: '2023ipHG'** (FG23: '2023ipHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	44	633	677
	B	38	0	101	139
	C	645	88	0	733
	Tot.	683	132	734	1549

**Traffic Lane Flows**

Lane	Scenario 23: 2023ipHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	339
1/2	338
2/1	139
3/1	323
3/2	322
3/3	88
4/1	683
5/1	132
6/1	734

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 24: '2023opHG'** (FG24: '2023opHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	4	62	66
	B	4	0	10	14
	C	63	9	0	72
	Tot.	67	13	72	152

**Traffic Lane Flows**

Lane	Scenario 24: 2023opHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	33
1/2	33
2/1	14
3/1	32
3/2	31
3/3	9
4/1	67
5/1	13
6/1	72

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 25: '2037amHG'** (FG25: '2037amHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	42	1301	1343
	B	43	0	176	219
	C	1143	79	0	1222
	Tot.	1186	121	1477	2784

**Traffic Lane Flows**

Lane	Scenario 25: 2037amHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	672
1/2	671
2/1	219
3/1	572
3/2	571
3/3	79
4/1	1186
5/1	121
6/1	1477

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 26: '2037pmHG'** (FG26: '2037pmHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
	A	B	C	Tot.	
Origin	A	0	73	1158	1231
	B	37	0	163	200
	C	1235	178	0	1413
	Tot.	1272	251	1321	2844

**Traffic Lane Flows**

Lane	Scenario 26: 2037pmHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	616
1/2	615
2/1	200
3/1	618
3/2	617
3/3	178
4/1	1272
5/1	251
6/1	1321



Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 27: '2037ipHG' (FG27: '2037ipHG', Plan 1: 'all stages')**

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	51	763	814
	B	44	0	109	153
	C	771	95	0	866
	Tot.	815	146	872	1833

**Traffic Lane Flows**

Lane	Scenario 27: 2037ipHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	407
1/2	407
2/1	153
3/1	386
3/2	385
3/3	95
4/1	815
5/1	146
6/1	872

Full Input Data And Results

**Lane Saturation Flows**

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

**Scenario 28: '2037opHG'** (FG28: '2037opHG', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination				
		A	B	C	Tot.
Origin	A	0	5	75	80
	B	4	0	10	14
	C	75	9	0	84
	Tot.	79	14	85	178

**Traffic Lane Flows**

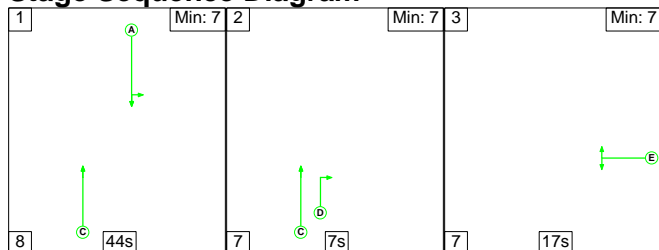
Lane	Scenario 28: 2037opHG
<b>Junction: A614/ Mickledale Lane</b>	
1/1	40
1/2	40
2/1	14
3/1	38
3/2	37
3/3	9
4/1	79
5/1	14
6/1	85

### Lane Saturation Flows

Junction: A614/ Mickledale Lane								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A614N Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A614N Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Mickledale La E Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
3/1 (A614S Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A614S Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A614S Lane 3)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A614N exit Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (MLE exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (A614S exit Lane 1)	Infinite Saturation Flow						Inf	Inf

### Scenario 1: '2023am' (FG1: '2023am', Plan 1: 'all stages')

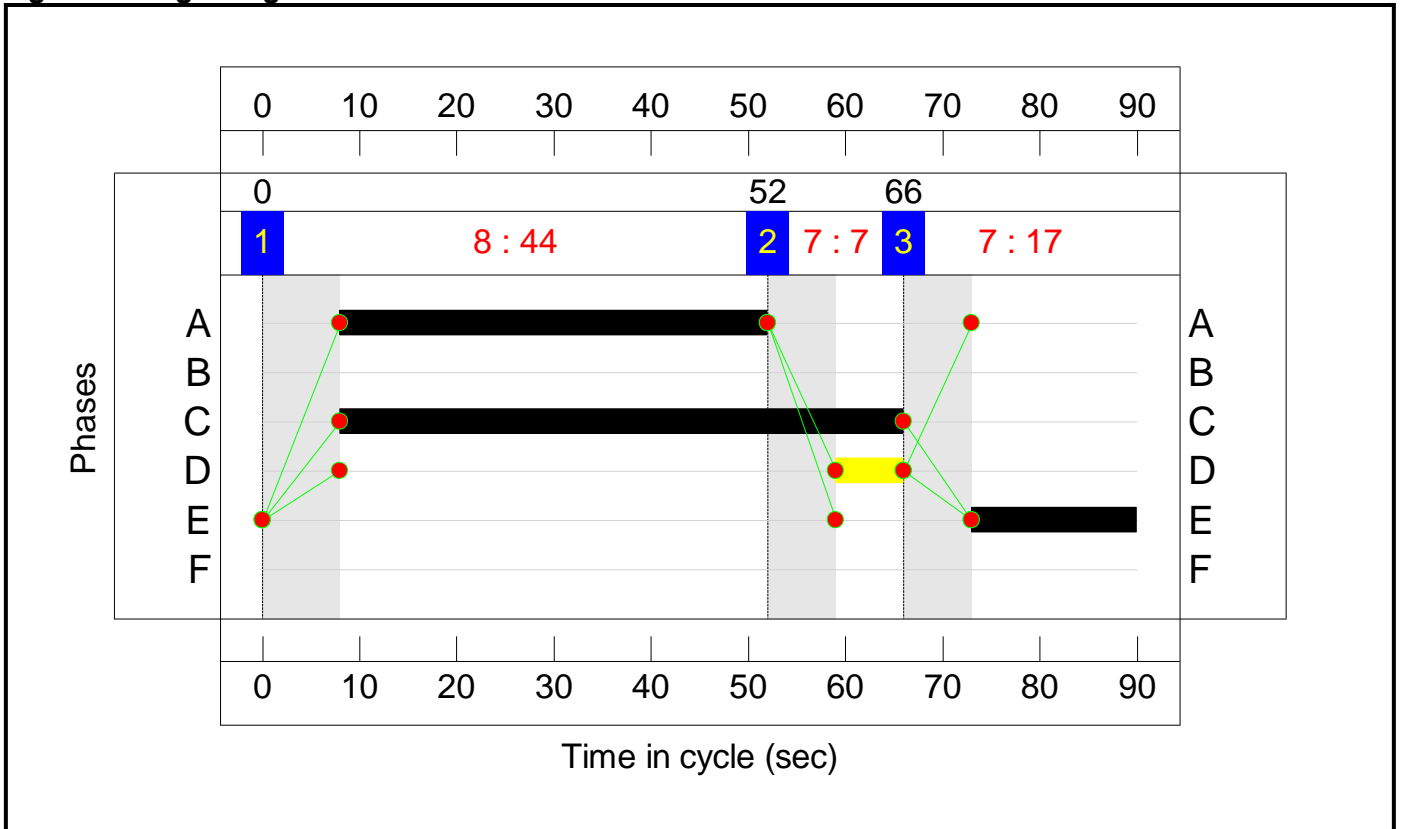
#### Stage Sequence Diagram



#### Stage Timings

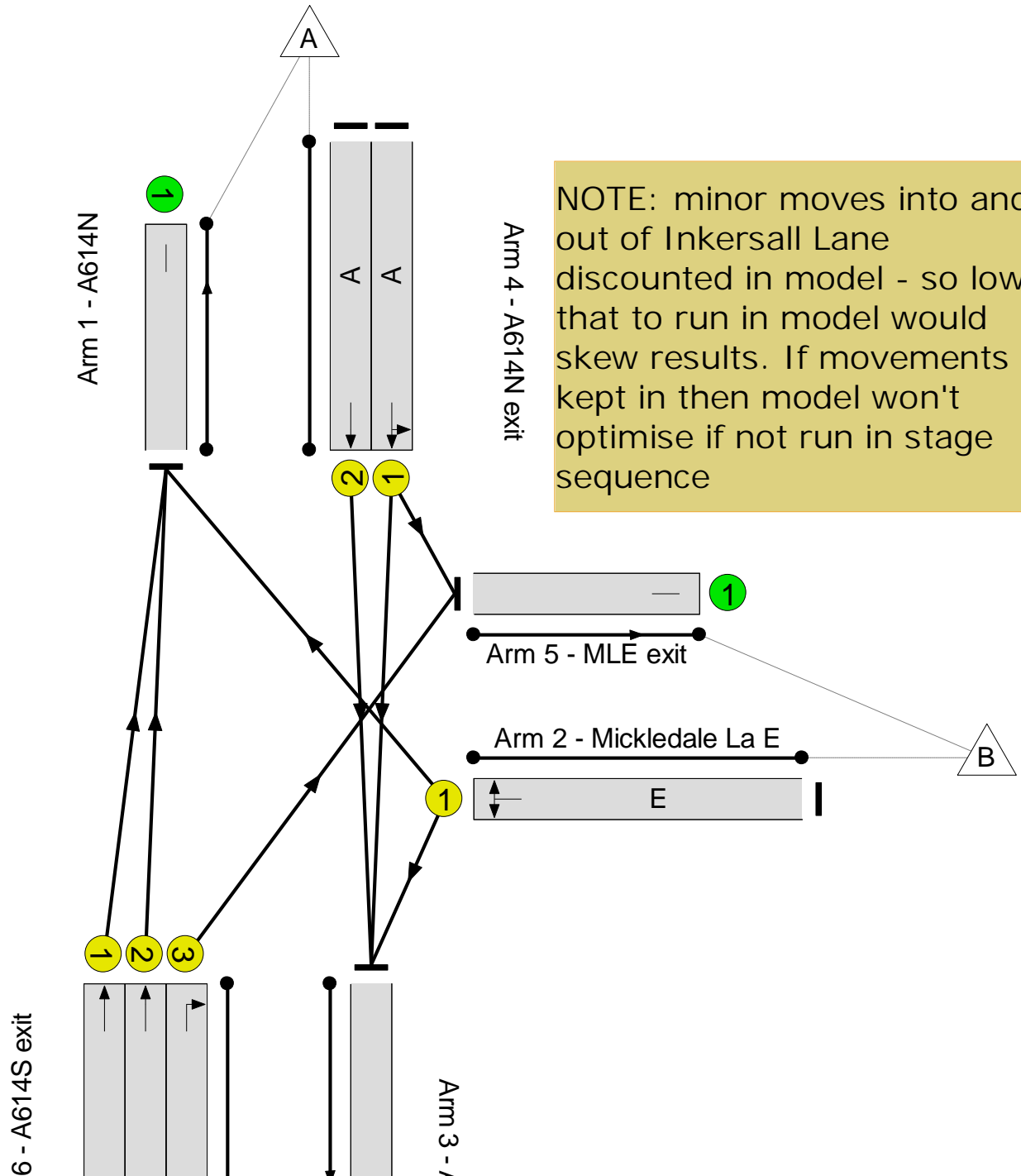
Stage	1	2	3
Duration	44	7	17
Change Point	0	52	66

### Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 63.5 %  
Total Traffic Delay: 11.5 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>55.1%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>55.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	44	-	523	1900	950	55.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	44	-	522	1900	950	54.9%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	192	1800	360	53.3%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	457	1900	1246	36.7%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	457	1900	1246	36.7%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	69	1800	160	43.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	949	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	102	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1169	Inf	Inf	0.0%

Full Input Data And Results

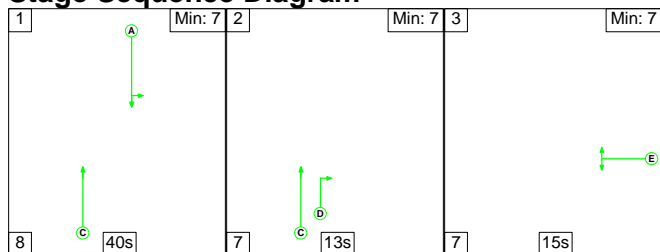
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	8.8	2.7	0.0	11.5	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	8.8	2.7	0.0	11.5	-	-	-	-
1/1	523	523	-	-	-	2.3	0.6	-	2.9	19.7	9.0	0.6	9.6
1/2	522	522	-	-	-	2.2	0.6	-	2.9	19.7	9.0	0.6	9.6
2/1	192	192	-	-	-	1.7	0.6	-	2.3	42.9	4.3	0.6	4.8
3/1	457	457	-	-	-	0.9	0.3	-	1.2	9.3	5.1	0.3	5.4
3/2	457	457	-	-	-	0.9	0.3	-	1.2	9.3	5.1	0.3	5.4
3/3	69	69	-	-	-	0.7	0.4	-	1.1	58.5	1.6	0.4	2.0
4/1	949	949	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	102	102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1169	1169	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		63.5	Total Delay for Signalled Lanes (pcuHr):		11.50	Cycle Time (s):		90		
			PRC Over All Lanes (%):		63.5	Total Delay Over All Lanes(pcuHr):		11.50					



Full Input Data And Results

Scenario 2: '2023pm' (FG2: '2023pm', Plan 1: 'all stages')

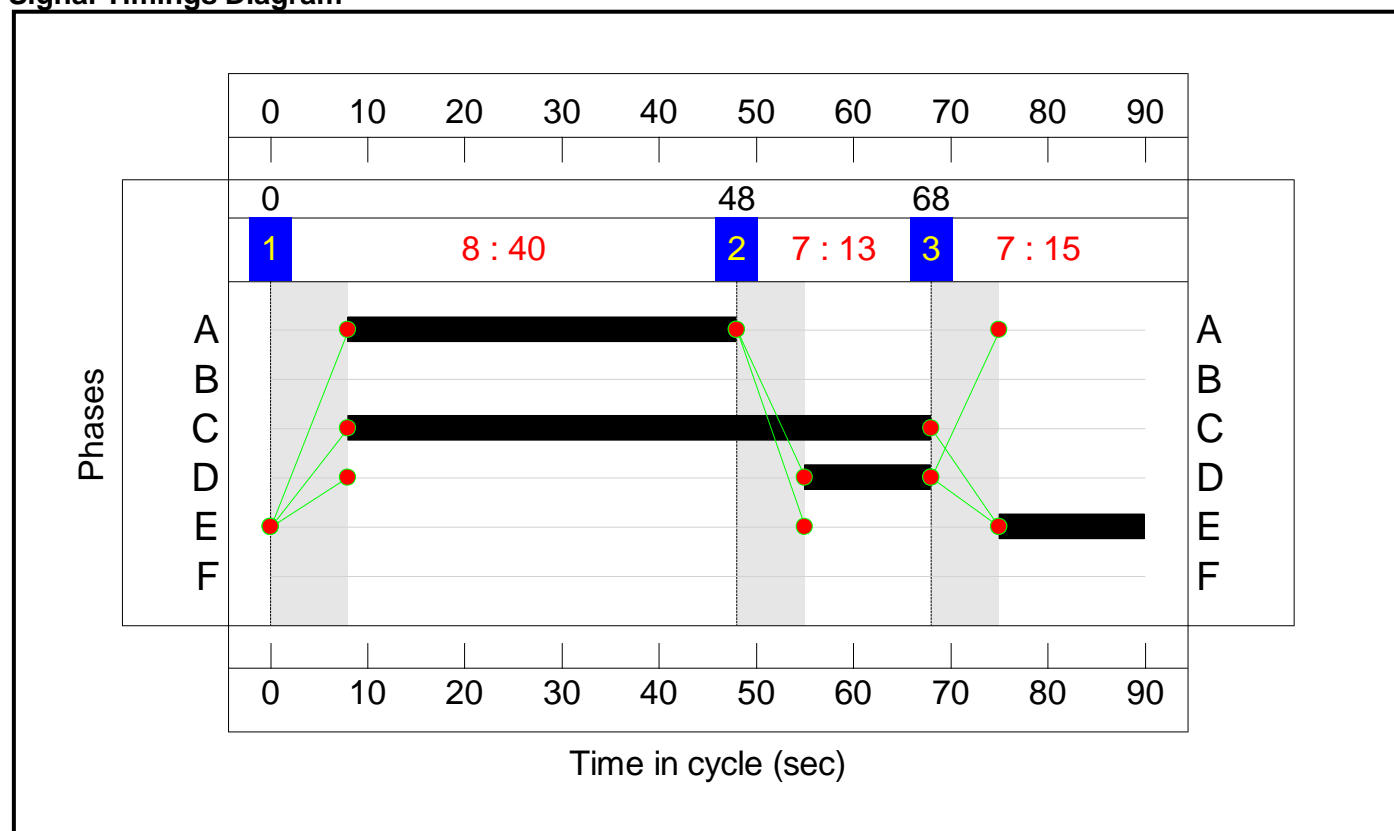
Stage Sequence Diagram



Stage Timings

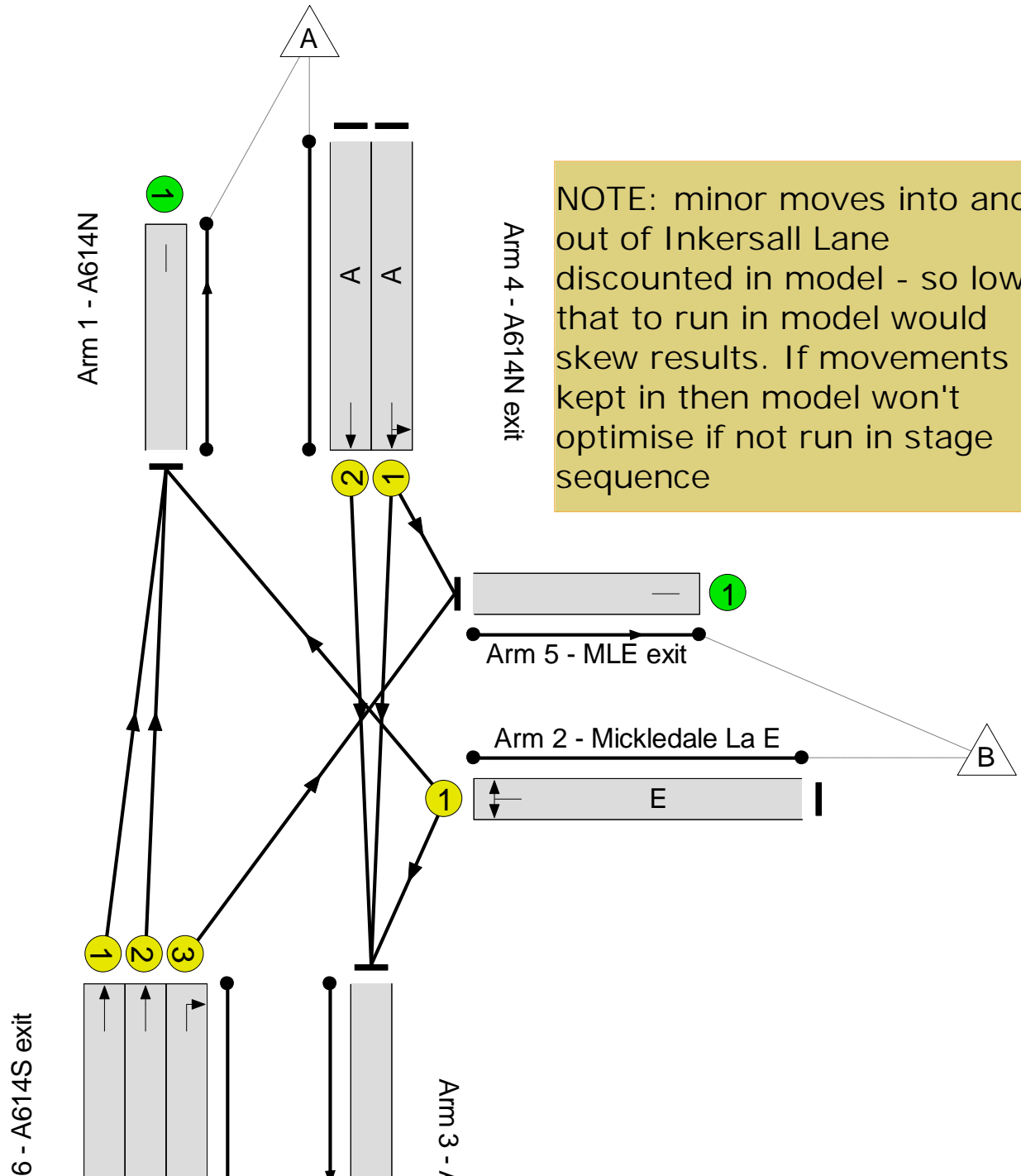
Stage	1	2	3
Duration	40	13	15
Change Point	0	48	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 63.0 %  
Total Traffic Delay: 12.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>55.2%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>55.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	478	1900	866	55.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	478	1900	866	55.2%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	169	1800	320	52.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	471	1900	1288	36.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	470	1900	1288	36.5%
3/3	A614S Right	U	N/A	N/A	D		1	13	-	154	1800	280	55.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	970	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1038	Inf	Inf	0.0%

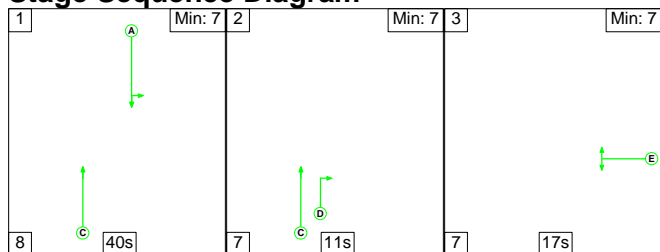
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	9.4	3.0	0.0	12.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	9.4	3.0	0.0	12.4	-	-	-	-
1/1	478	478	-	-	-	2.4	0.6	-	3.0	22.5	8.6	0.6	9.2
1/2	478	478	-	-	-	2.4	0.6	-	3.0	22.5	8.6	0.6	9.2
2/1	169	169	-	-	-	1.6	0.6	-	2.1	45.4	3.8	0.6	4.4
3/1	471	471	-	-	-	0.8	0.3	-	1.1	8.4	5.0	0.3	5.3
3/2	470	470	-	-	-	0.8	0.3	-	1.1	8.4	5.0	0.3	5.2
3/3	154	154	-	-	-	1.5	0.6	-	2.1	49.2	3.6	0.6	4.2
4/1	970	970	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1038	1038	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		63.0	Total Delay for Signalled Lanes (pcuHr):		12.40	Cycle Time (s): 90				
			PRC Over All Lanes (%):		63.0	Total Delay Over All Lanes(pcuHr):		12.40					

Full Input Data And Results

Scenario 3: '2023ip' (FG3: '2023ip', Plan 1: 'all stages')

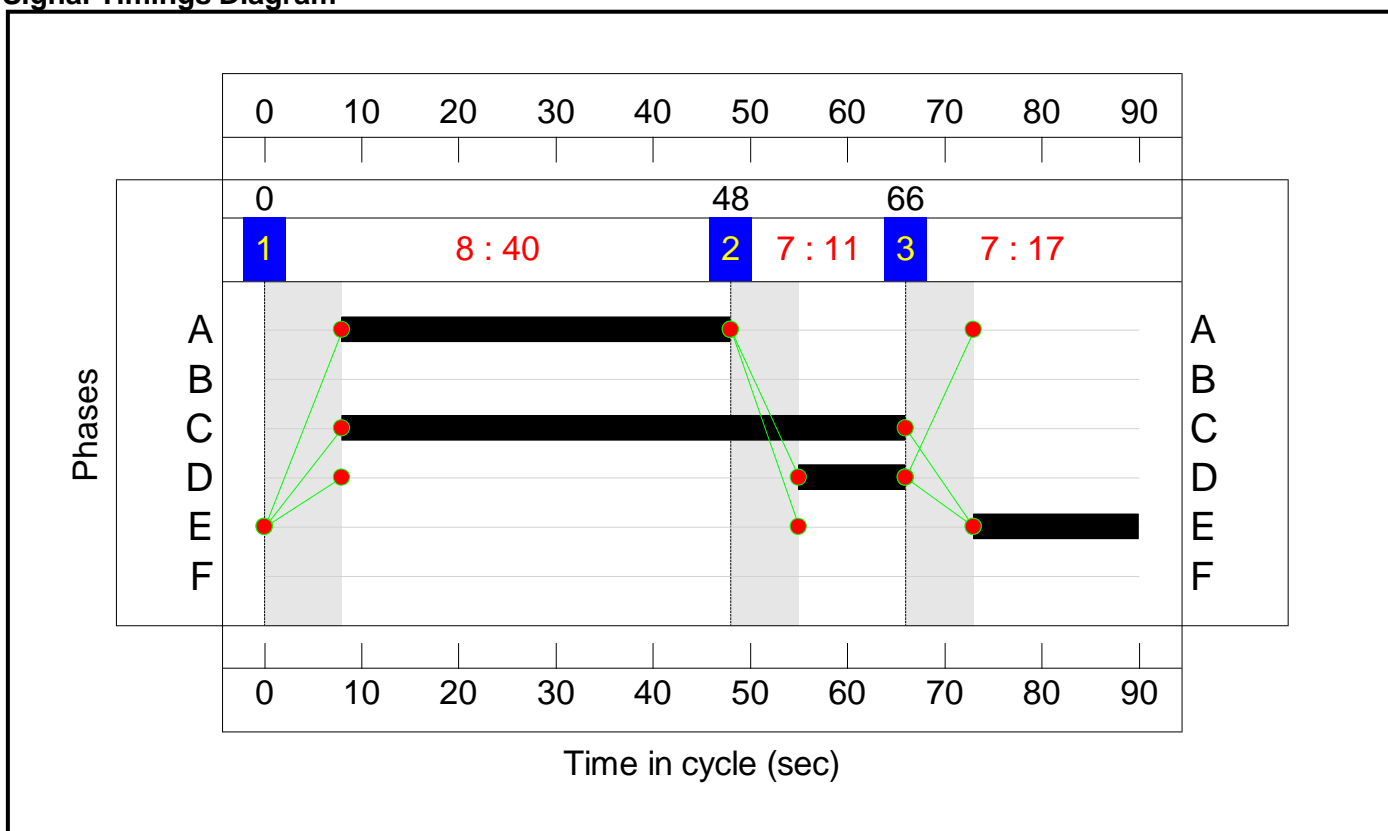
Stage Sequence Diagram



Stage Timings

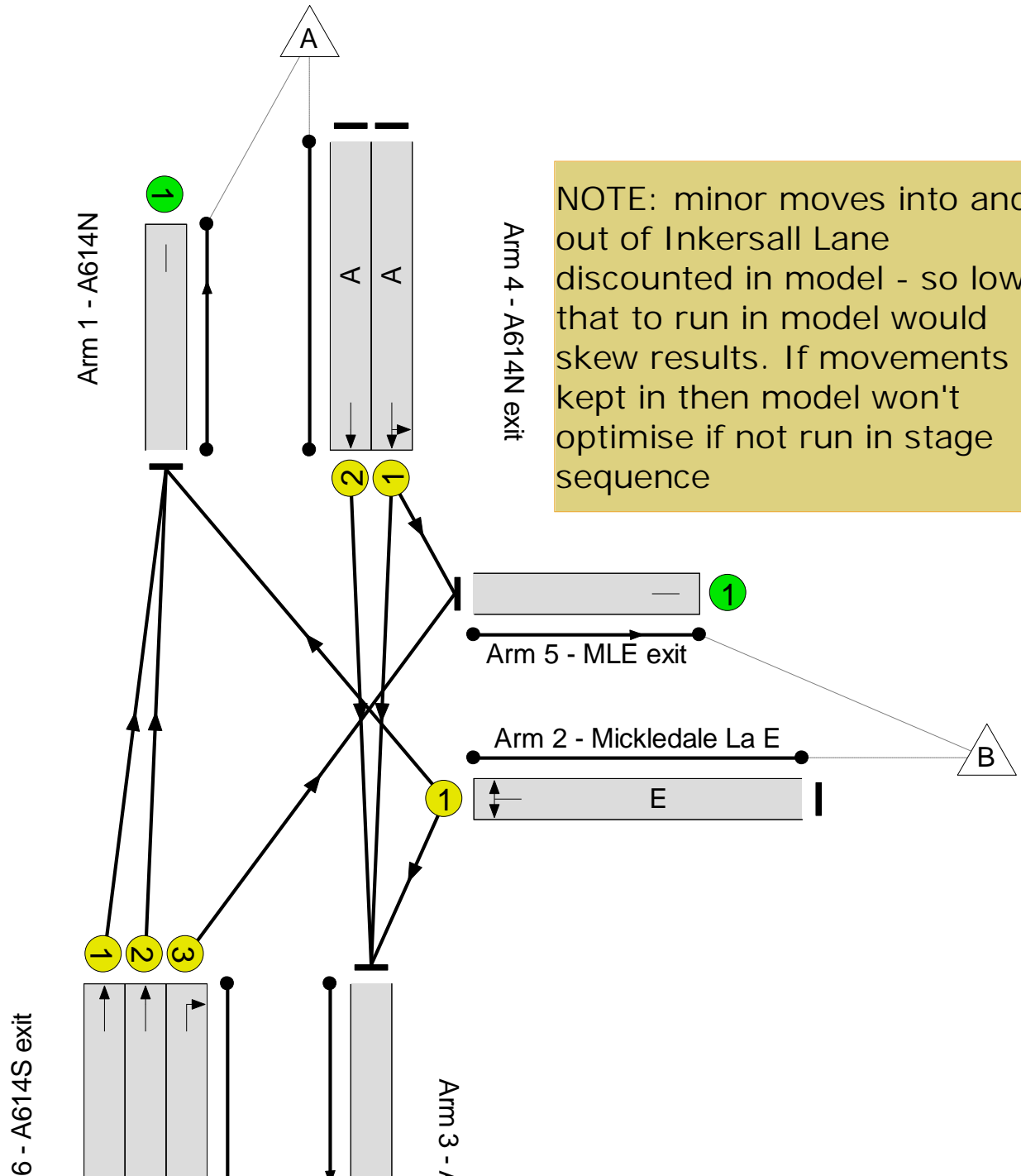

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 141.9 %  
Total Traffic Delay: 7.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>37.2%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>37.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	322	1900	866	37.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	322	1900	866	37.2%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	133	1800	360	36.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	306	1900	1246	24.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	306	1900	1246	24.6%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	84	1800	240	35.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	648	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	126	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	699	Inf	Inf	0.0%

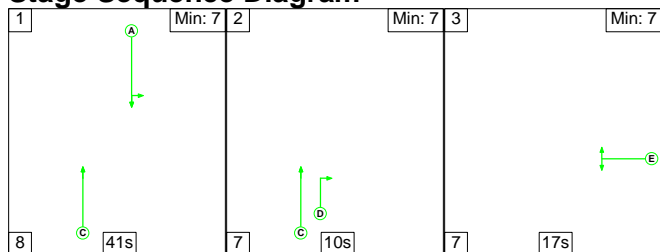
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	5.9	1.5	0.0	7.4	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	5.9	1.5	0.0	7.4	-	-	-	-
1/1	322	322	-	-	-	1.4	0.3	-	1.7	19.4	5.2	0.3	5.5
1/2	322	322	-	-	-	1.4	0.3	-	1.7	19.4	5.2	0.3	5.5
2/1	133	133	-	-	-	1.1	0.3	-	1.4	39.0	2.8	0.3	3.1
3/1	306	306	-	-	-	0.5	0.2	-	0.7	8.3	3.1	0.2	3.2
3/2	306	306	-	-	-	0.5	0.2	-	0.7	8.3	3.1	0.2	3.2
3/3	84	84	-	-	-	0.8	0.3	-	1.1	47.0	1.9	0.3	2.2
4/1	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	699	699	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		141.9	Total Delay for Signalled Lanes (pcuHr):		7.41	Cycle Time (s):		90		
			PRC Over All Lanes (%):		141.9	Total Delay Over All Lanes(pcuHr):		7.41					

Full Input Data And Results

Scenario 4: '2023op' (FG4: '2023op', Plan 1: 'all stages')

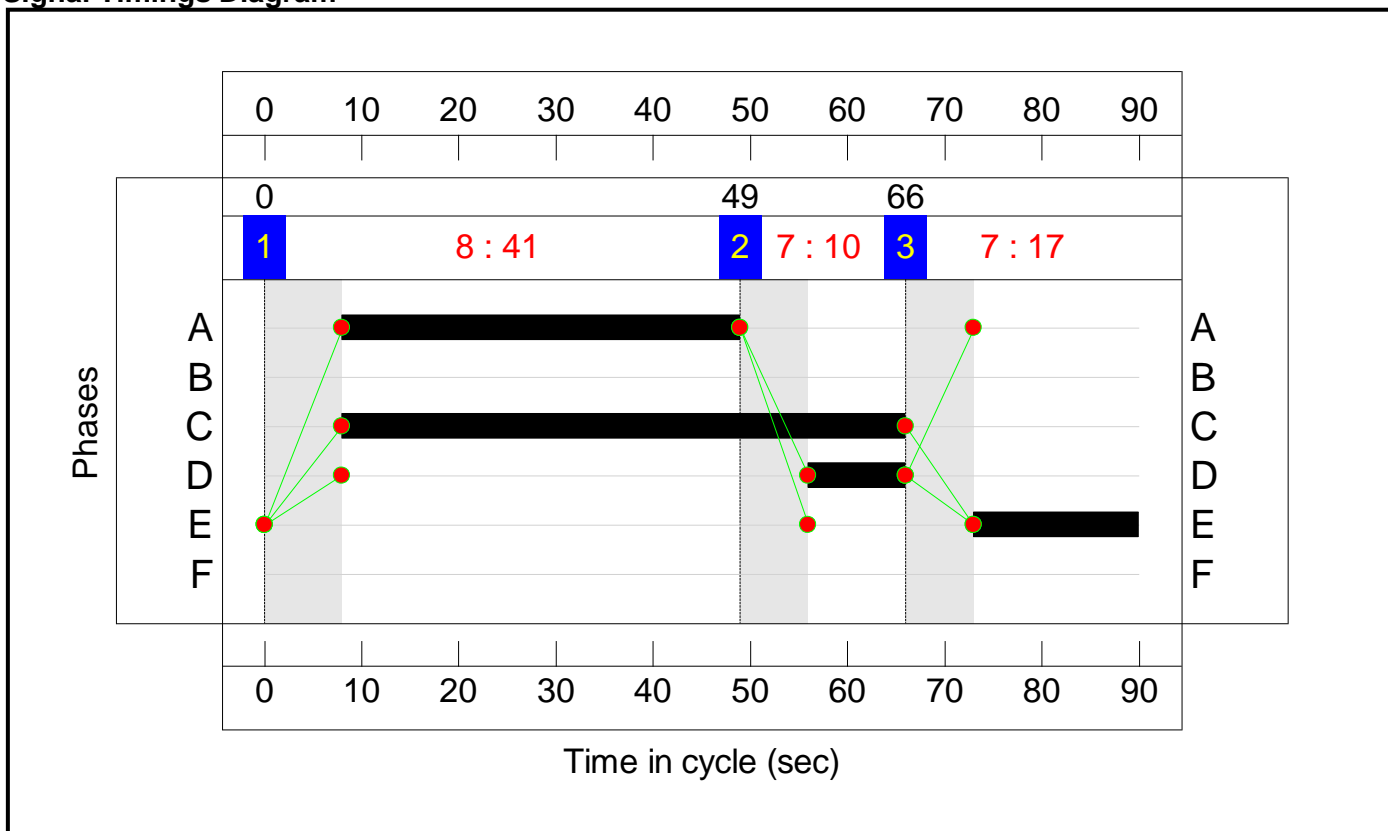
Stage Sequence Diagram



Stage Timings

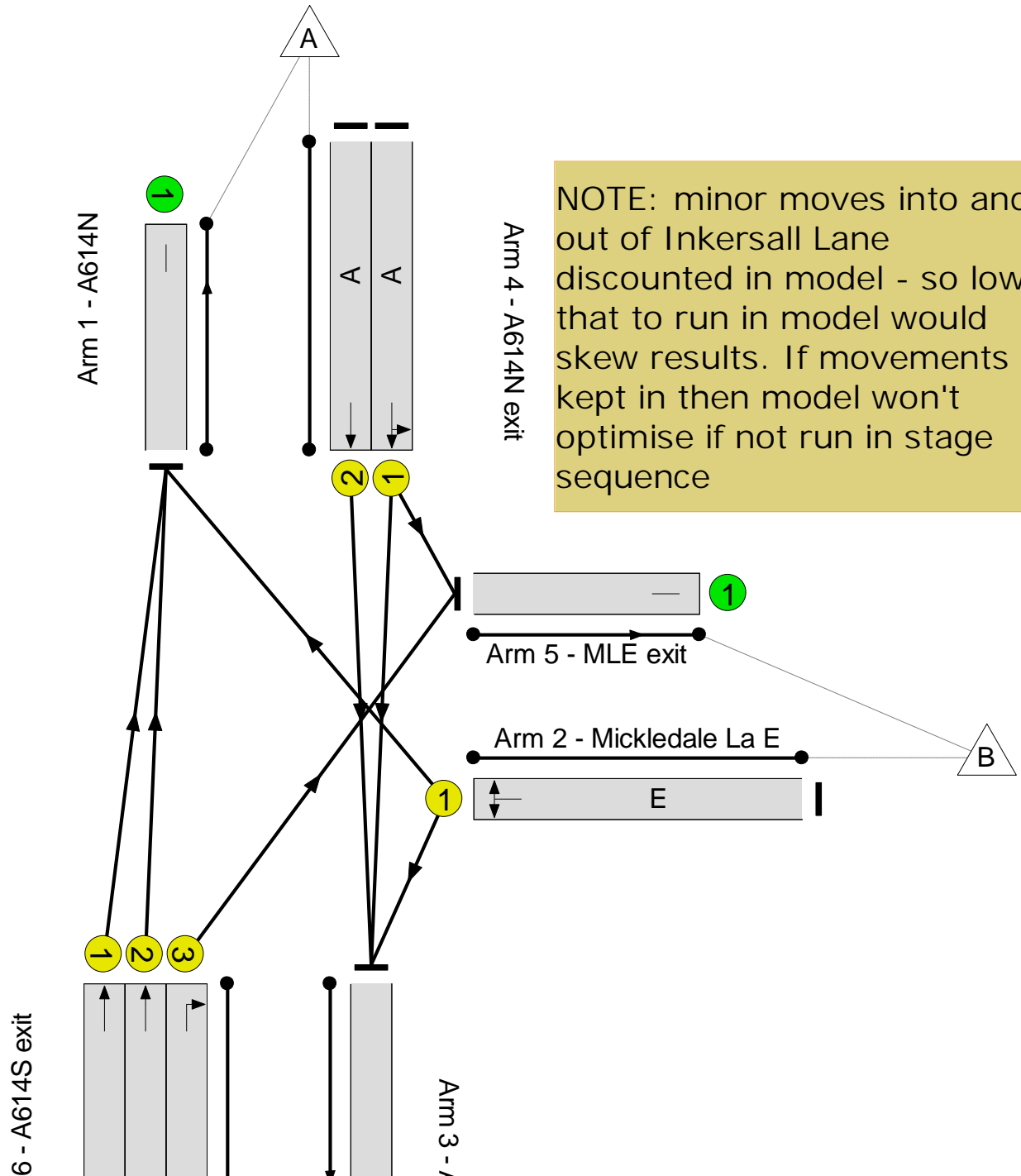

Stage	1	2	3
Duration	41	10	17
Change Point	0	49	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 2375.0 %  
Total Traffic Delay: 0.6 pcuHr



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.6%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.6%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	41	-	31	1900	887	3.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	41	-	32	1900	887	3.6%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	13	1800	360	3.6%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	30	1900	1246	2.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	30	1900	1246	2.4%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	8	1800	220	3.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	64	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	68	Inf	Inf	0.0%

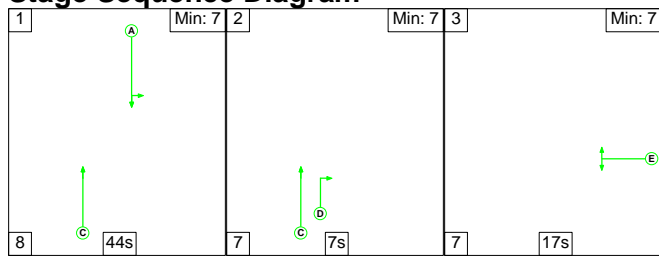
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
1/1	31	31	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.4
1/2	32	32	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.4
2/1	13	13	-	-	-	0.1	0.0	-	0.1	34.4	0.3	0.0	0.3
3/1	30	30	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/2	30	30	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/3	8	8	-	-	-	0.1	0.0	-	0.1	43.6	0.2	0.0	0.2
4/1	64	64	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	68	68	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 2375.0		PRC Over All Lanes (%): 2375.0		Total Delay for Signalled Lanes (pcuHr): 0.60		Total Delay Over All Lanes(pcuHr): 0.60		Cycle Time (s): 90		

Full Input Data And Results

Scenario 5: '2037am' (FG5: '2037am', Plan 1: 'all stages')

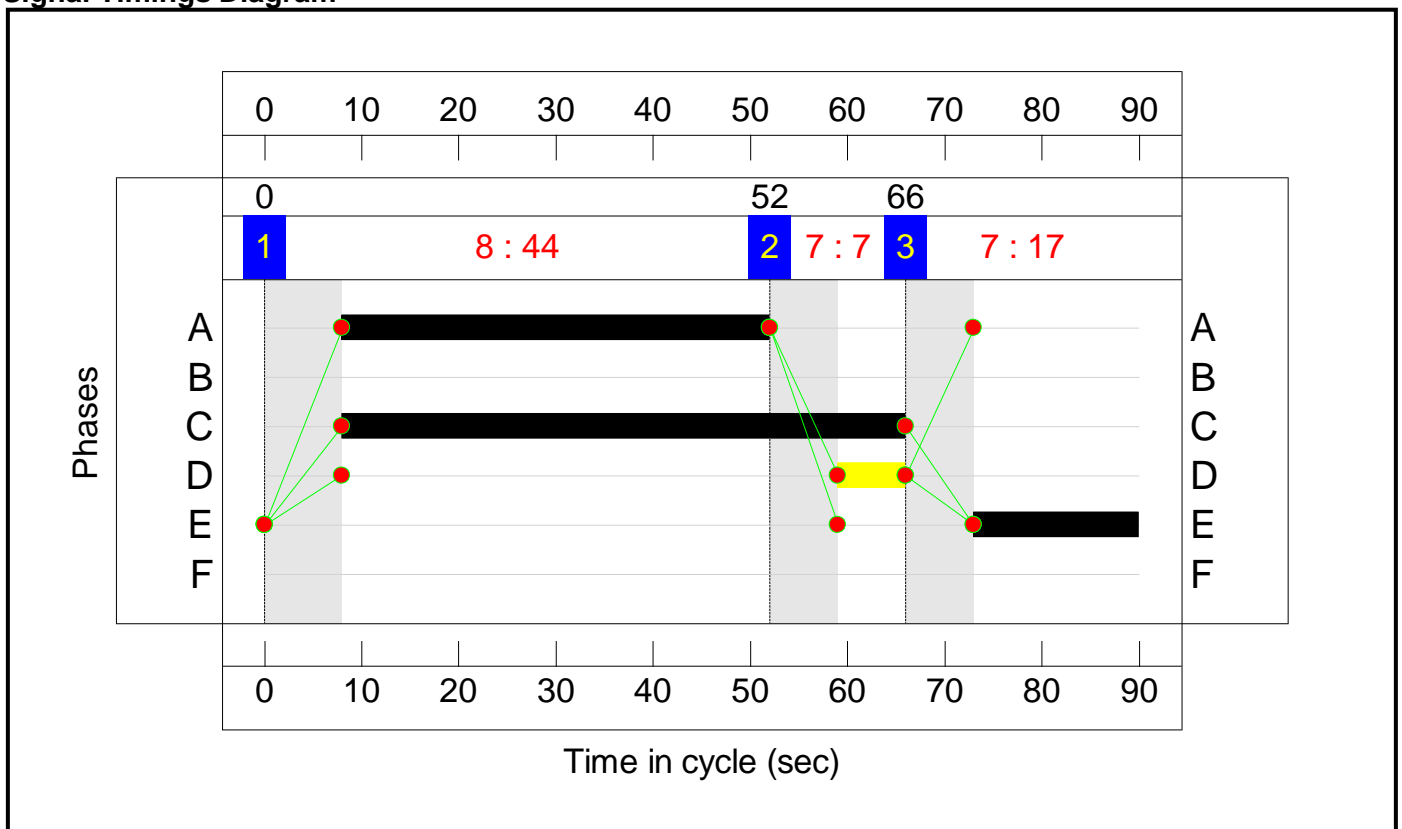
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	7	17
Change Point	0	52	66

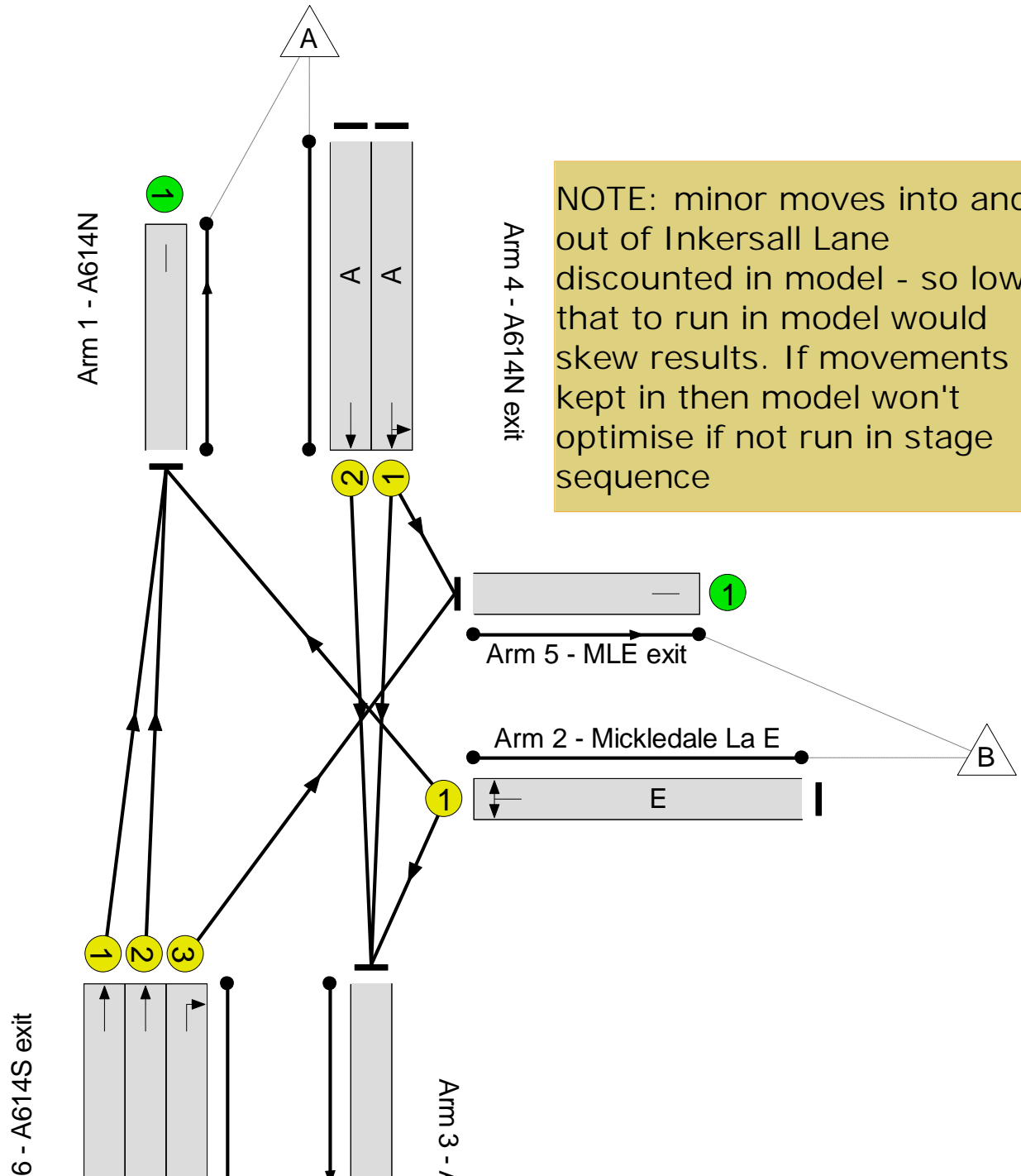

Signal Timings Diagram





Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 57.7 %  
Total Traffic Delay: 12.1 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>57.1%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>57.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	44	-	542	1900	950	57.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	44	-	542	1900	950	57.1%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	195	1800	360	54.2%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	474	1900	1246	38.1%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	474	1900	1246	38.1%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	71	1800	160	44.4%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	983	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	105	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1210	Inf	Inf	0.0%

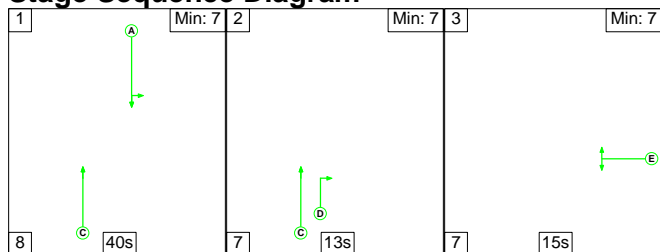
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	9.1	2.9	0.0	12.1	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	9.1	2.9	0.0	12.1	-	-	-	-
1/1	542	542	-	-	-	2.4	0.7	-	3.0	20.1	9.3	0.7	10.0
1/2	542	542	-	-	-	2.4	0.7	-	3.0	20.1	9.3	0.7	10.0
2/1	195	195	-	-	-	1.8	0.6	-	2.3	43.1	4.3	0.6	4.9
3/1	474	474	-	-	-	0.9	0.3	-	1.2	9.4	5.4	0.3	5.7
3/2	474	474	-	-	-	0.9	0.3	-	1.2	9.4	5.4	0.3	5.7
3/3	71	71	-	-	-	0.8	0.4	-	1.2	59.0	1.7	0.4	2.1
4/1	983	983	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	105	105	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1210	1210	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		57.7	Total Delay for Signalled Lanes (pcuHr):		12.05	Cycle Time (s): 90				
			PRC Over All Lanes (%):		57.7	Total Delay Over All Lanes(pcuHr):		12.05					

Full Input Data And Results

Scenario 6: '2037pm' (FG6: '2037pm', Plan 1: 'all stages')

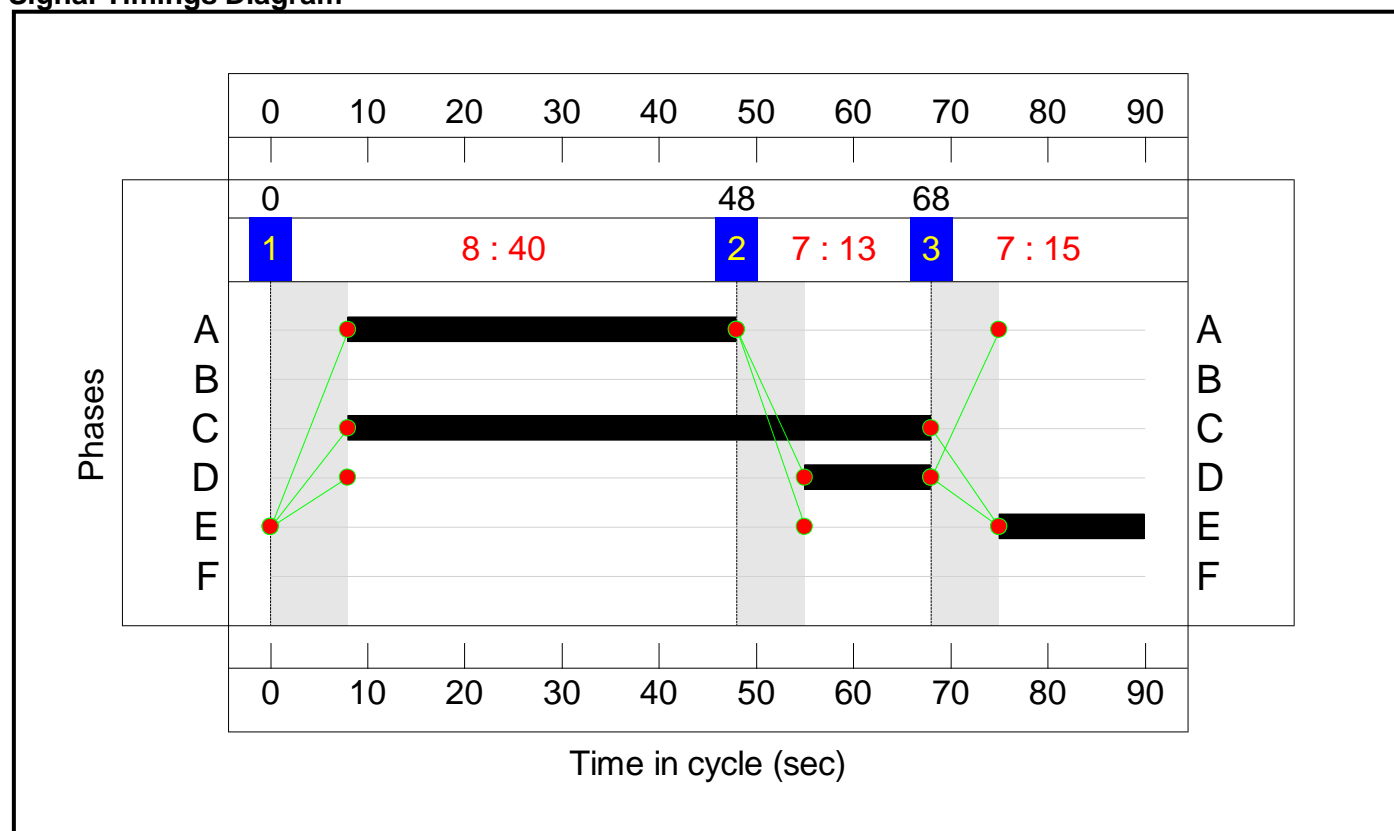
Stage Sequence Diagram



Stage Timings

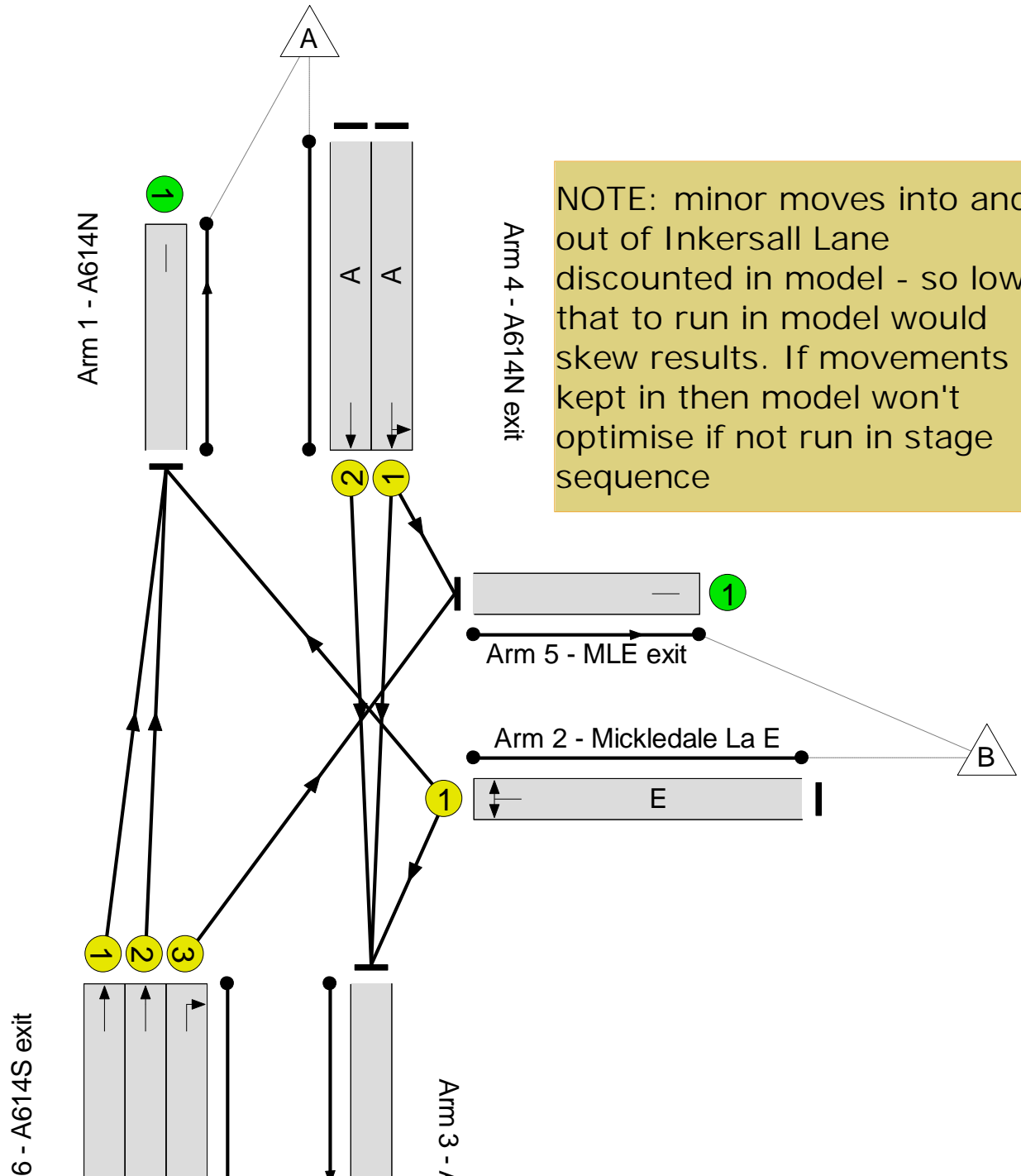

Stage	1	2	3
Duration	40	13	15
Change Point	0	48	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 59.3 %  
Total Traffic Delay: 12.8 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>56.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>56.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	489	1900	866	56.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	488	1900	866	56.4%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	172	1800	320	53.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	481	1900	1288	37.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	480	1900	1288	37.3%
3/3	A614S Right	U	N/A	N/A	D		1	13	-	156	1800	280	55.7%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	990	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	214	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1062	Inf	Inf	0.0%



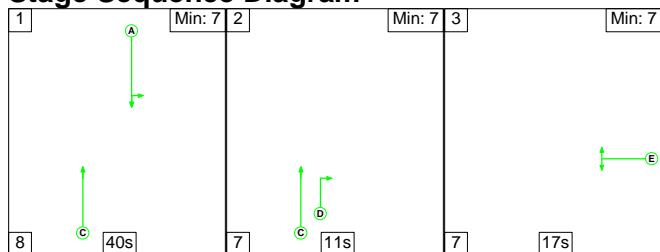
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	9.7	3.1	0.0	12.8	-	-	-	-
1/1	489	489	-	-	-	2.4	0.6	-	3.1	22.7	8.8	0.6	9.5
1/2	488	488	-	-	-	2.4	0.6	-	3.1	22.7	8.8	0.6	9.5
2/1	172	172	-	-	-	1.6	0.6	-	2.2	45.7	3.9	0.6	4.4
3/1	481	481	-	-	-	0.8	0.3	-	1.1	8.5	5.1	0.3	5.4
3/2	480	480	-	-	-	0.8	0.3	-	1.1	8.5	5.1	0.3	5.4
3/3	156	156	-	-	-	1.5	0.6	-	2.1	49.5	3.6	0.6	4.2
4/1	990	990	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	214	214	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1062	1062	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		59.3	Total Delay for Signalled Lanes (pcuHr):		12.76	Cycle Time (s): 90				
			PRC Over All Lanes (%):		59.3	Total Delay Over All Lanes(pcuHr):		12.76					

Full Input Data And Results

Scenario 7: '2037ip' (FG7: '2037ip', Plan 1: 'all stages')

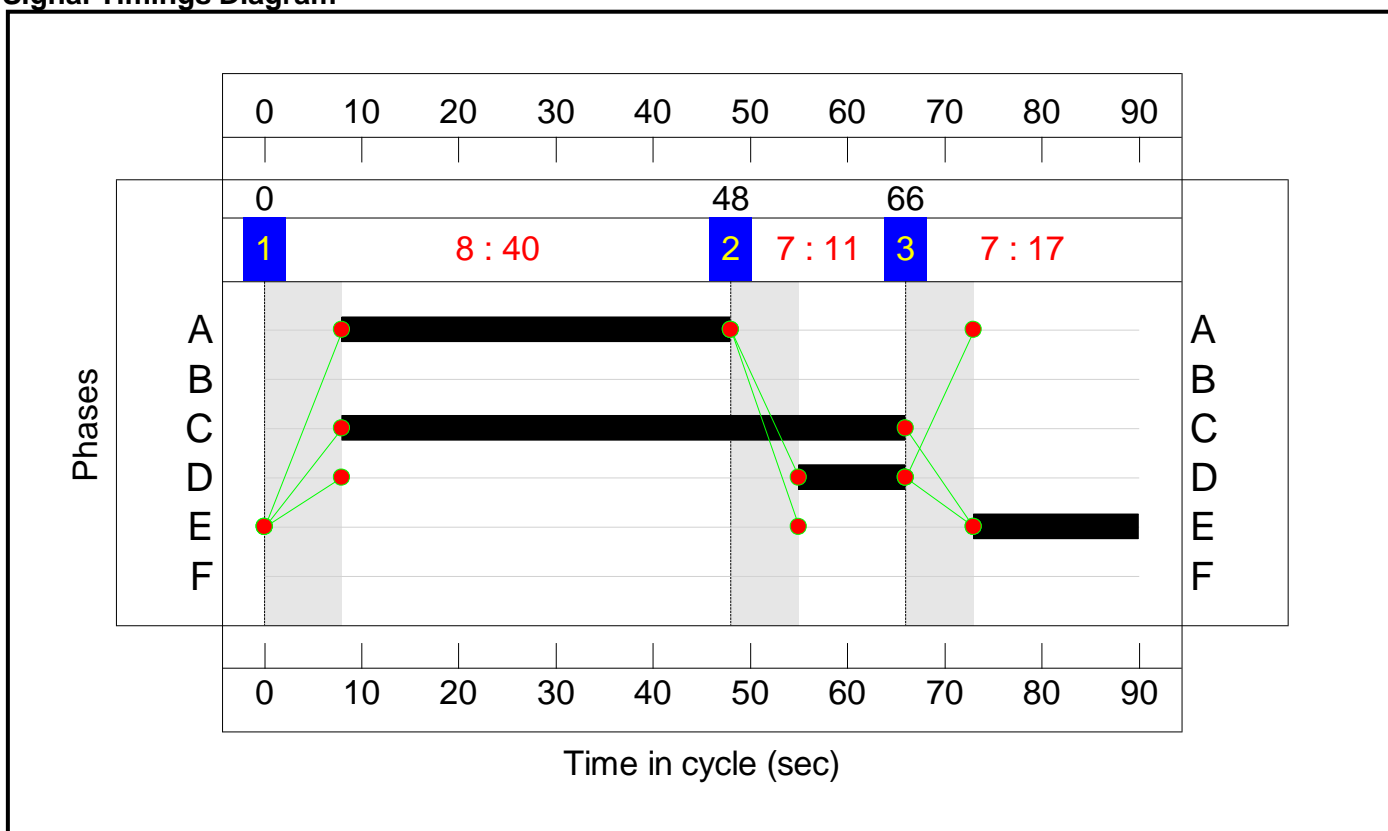
Stage Sequence Diagram



Stage Timings

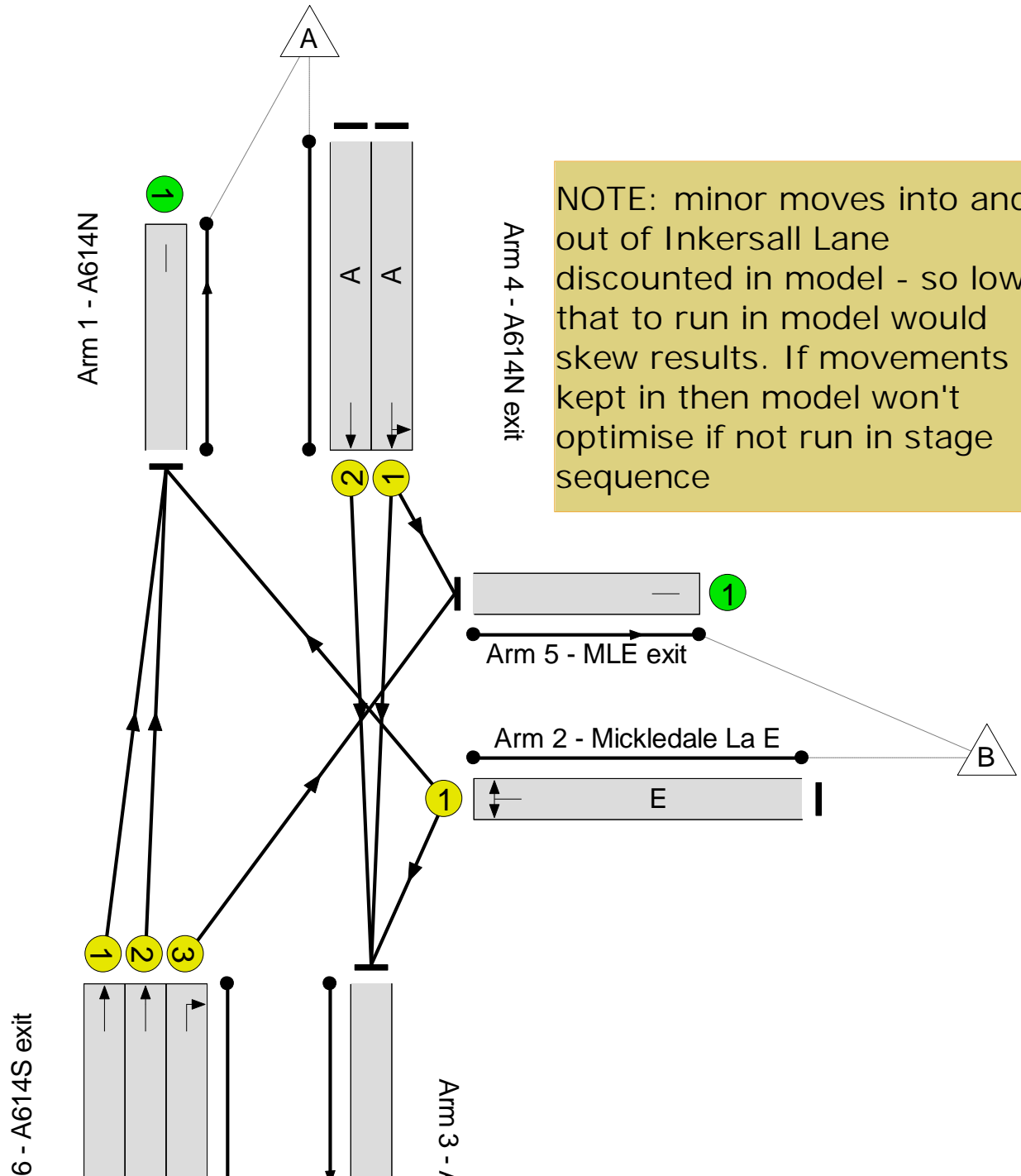

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 133.9 %  
Total Traffic Delay: 7.7 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>38.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>38.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	332	1900	866	38.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	333	1900	866	38.5%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	136	1800	360	37.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	316	1900	1246	25.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	316	1900	1246	25.4%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	86	1800	240	35.8%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	669	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	128	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%

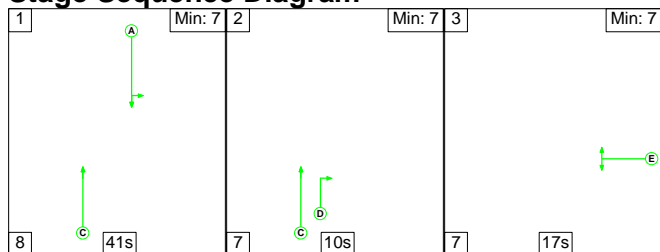
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	6.1	1.5	0.0	7.7	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	6.1	1.5	0.0	7.7	-	-	-	-
1/1	332	332	-	-	-	1.5	0.3	-	1.8	19.5	5.4	0.3	5.8
1/2	333	333	-	-	-	1.5	0.3	-	1.8	19.6	5.5	0.3	5.8
2/1	136	136	-	-	-	1.2	0.3	-	1.5	39.2	2.9	0.3	3.2
3/1	316	316	-	-	-	0.6	0.2	-	0.7	8.3	3.2	0.2	3.4
3/2	316	316	-	-	-	0.6	0.2	-	0.7	8.3	3.2	0.2	3.4
3/3	86	86	-	-	-	0.8	0.3	-	1.1	47.2	1.9	0.3	2.2
4/1	669	669	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	128	128	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	722	722	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		133.9	Total Delay for Signalled Lanes (pcuHr):		7.68	Cycle Time (s): 90				
			PRC Over All Lanes (%):		133.9	Total Delay Over All Lanes(pcuHr):		7.68					

Full Input Data And Results

Scenario 8: '2037op' (FG8: '2037op', Plan 1: 'all stages')

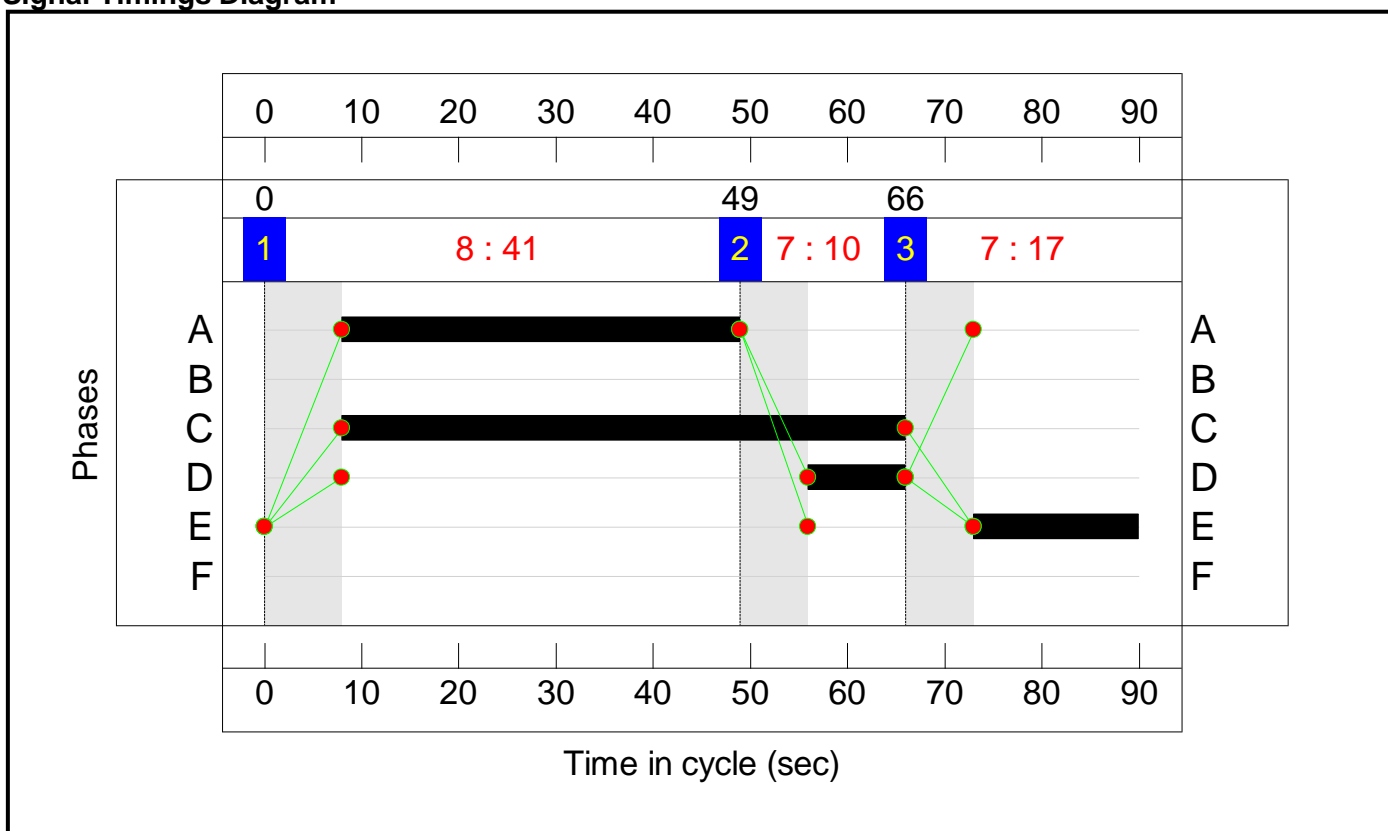
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	41	10	17
Change Point	0	49	66

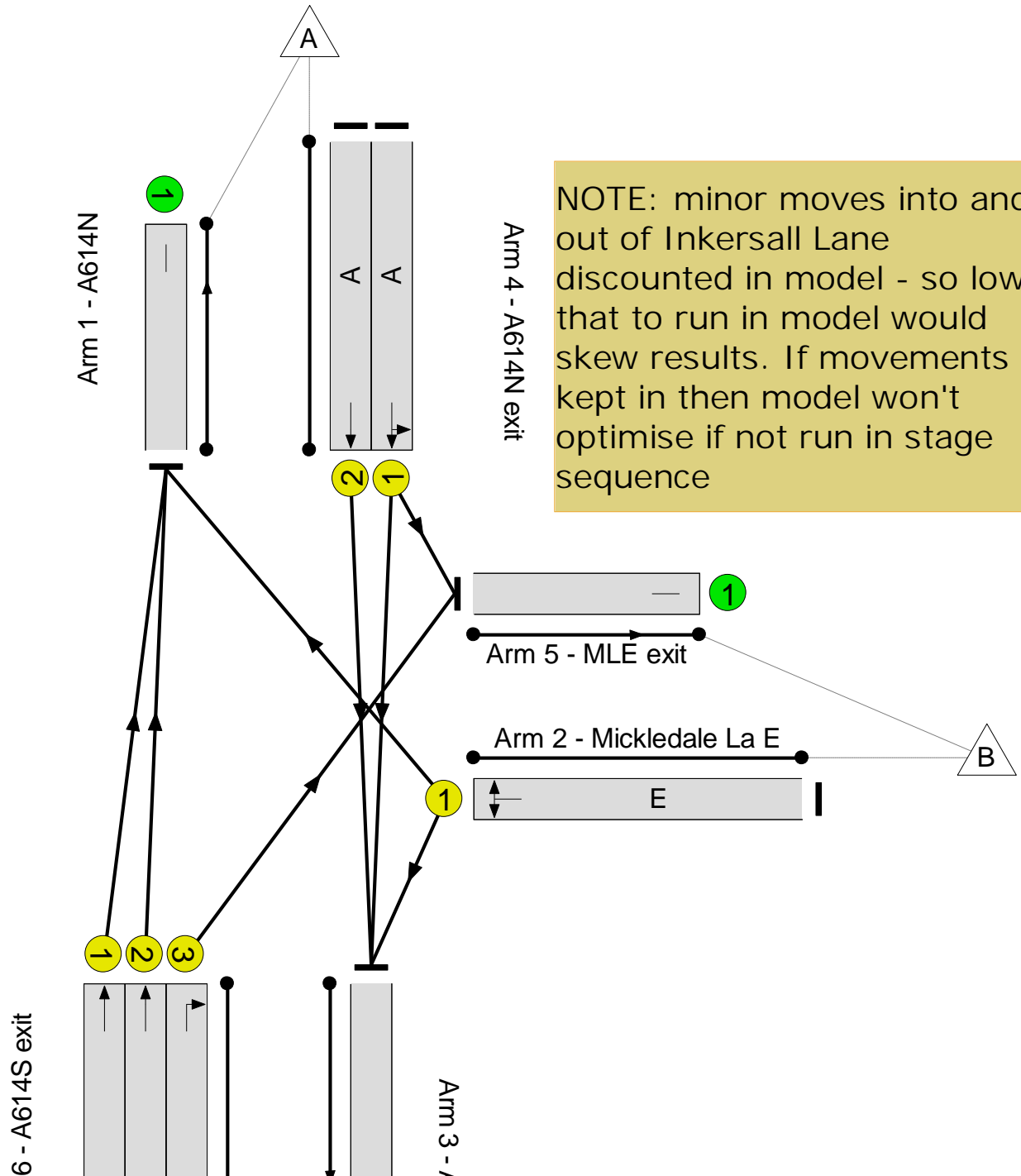

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



A614/ Mickledale Lane  
PRC: 2318.2 %  
Total Traffic Delay: 0.6 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.7%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.7%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	41	-	32	1900	887	3.6%
1/2	A614N Ahead	U	N/A	N/A	A		1	41	-	33	1900	887	3.7%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	13	1800	360	3.6%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	31	1900	1246	2.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	31	1900	1246	2.5%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	8	1800	220	3.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	66	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	70	Inf	Inf	0.0%

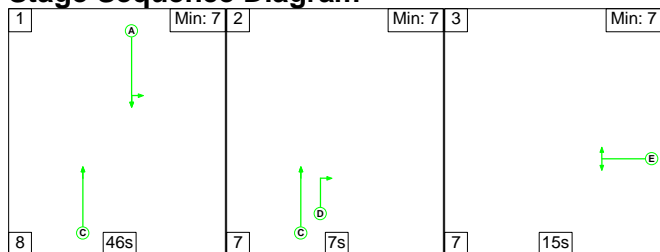
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
1/1	32	32	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.4
1/2	33	33	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.5
2/1	13	13	-	-	-	0.1	0.0	-	0.1	34.4	0.3	0.0	0.3
3/1	31	31	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/2	31	31	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/3	8	8	-	-	-	0.1	0.0	-	0.1	43.6	0.2	0.0	0.2
4/1	66	66	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	70	70	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 2318.2		PRC Over All Lanes (%): 2318.2		Total Delay for Signalled Lanes (pcuHr): 0.62		Total Delay Over All Lanes(pcuHr): 0.62		Cycle Time (s): 90		

Full Input Data And Results

Scenario 9: '2037am final' (FG9: '2037am final', Plan 1: 'all stages')

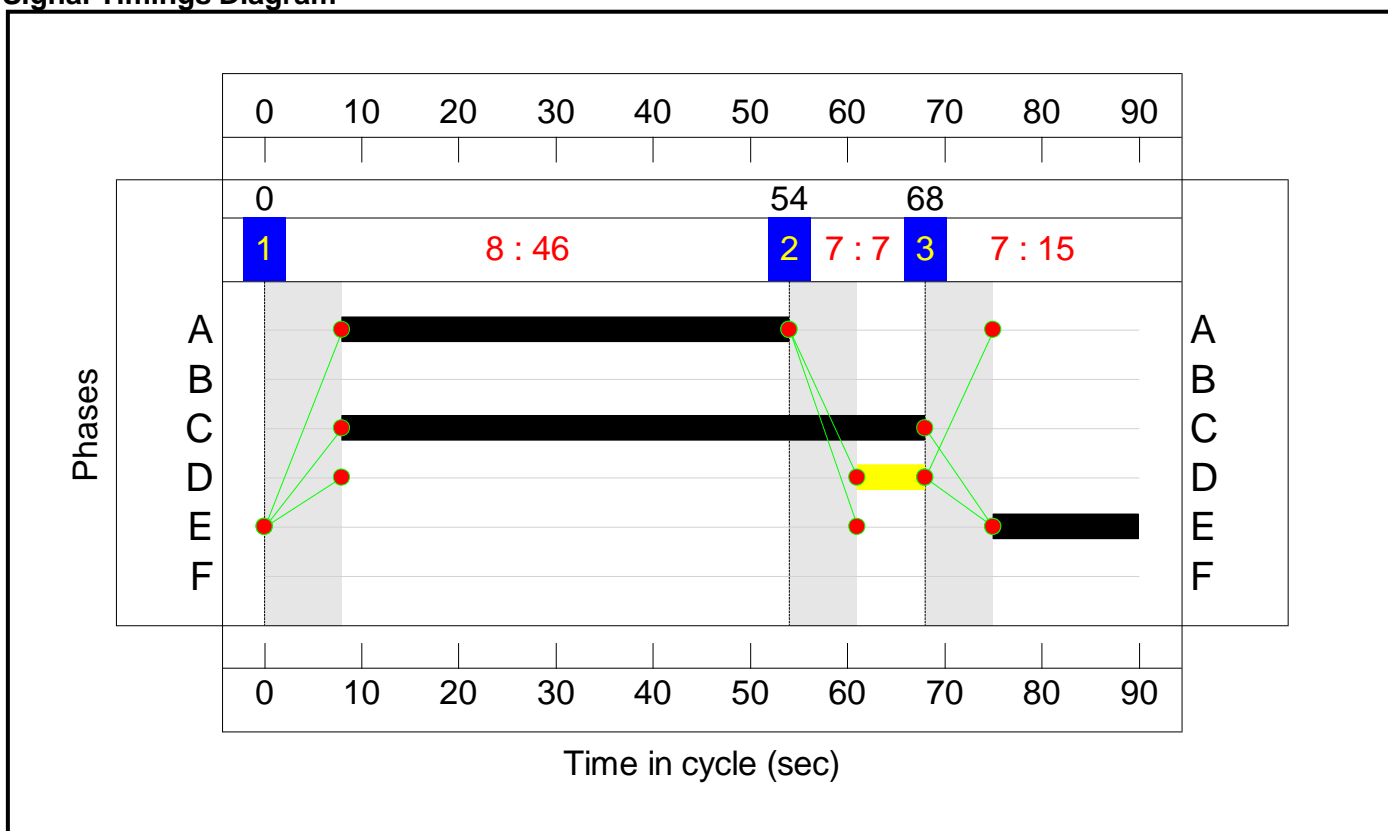
Stage Sequence Diagram



Stage Timings

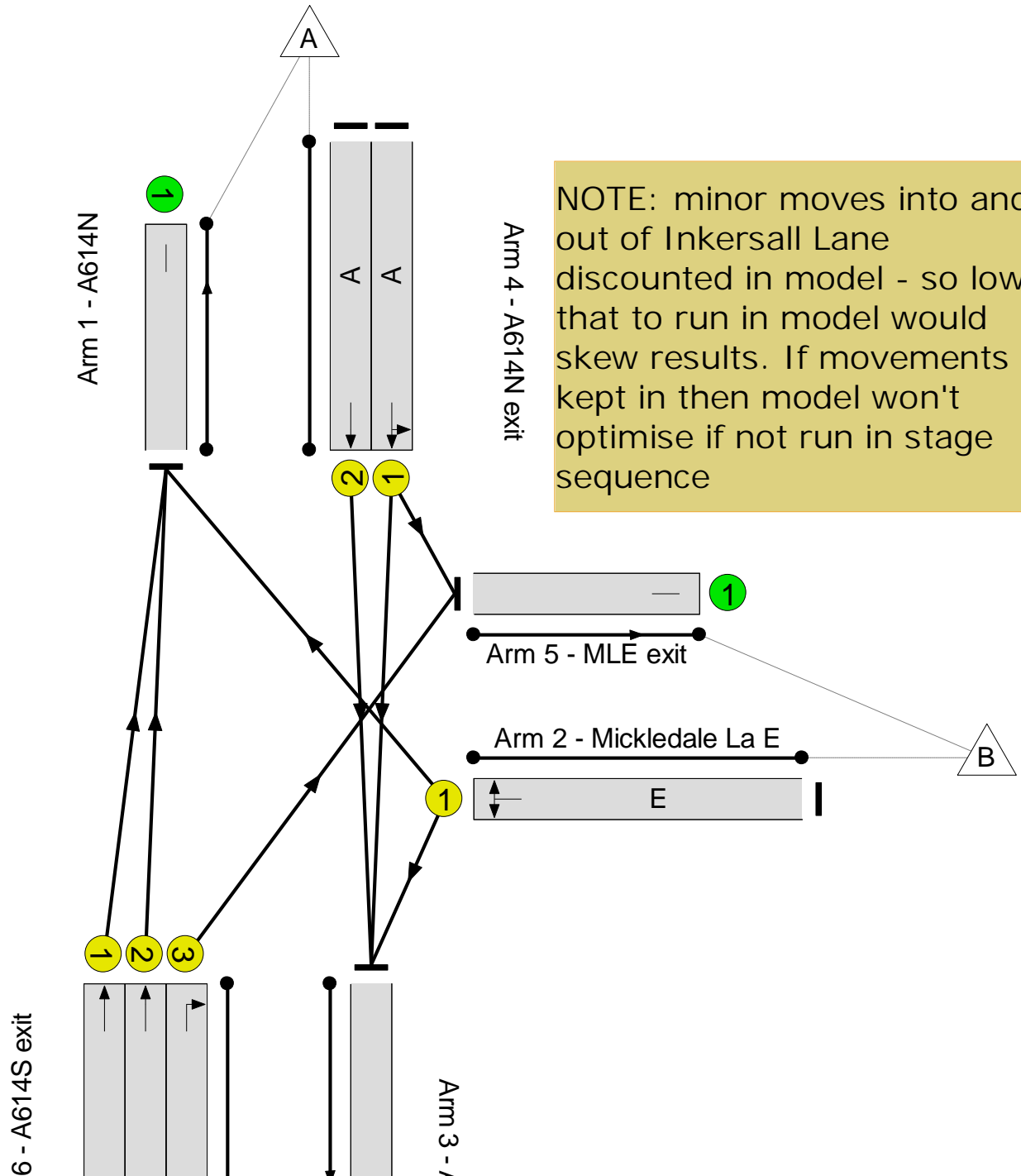
Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 43.3 %  
Total Traffic Delay: 13.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>62.8%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>62.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	619	1900	992	62.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	619	1900	992	62.4%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	201	1800	320	62.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	526	1900	1288	40.8%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	525	1900	1288	40.8%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	73	1800	160	45.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1090	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	111	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1362	Inf	Inf	0.0%

Full Input Data And Results

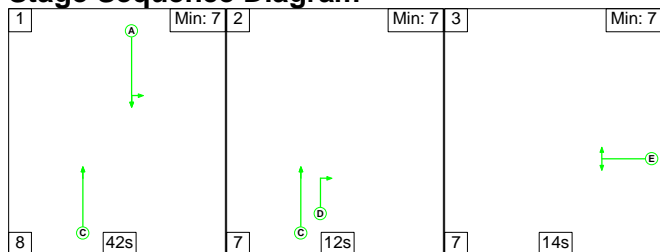
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	9.8	3.6	0.0	13.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	9.8	3.6	0.0	13.4	-	-	-	-
1/1	619	619	-	-	-	2.6	0.8	-	3.4	20.0	10.8	0.8	11.7
1/2	619	619	-	-	-	2.6	0.8	-	3.4	20.0	10.8	0.8	11.7
2/1	201	201	-	-	-	1.9	0.8	-	2.7	49.2	4.6	0.8	5.5
3/1	526	526	-	-	-	0.9	0.3	-	1.3	8.8	5.8	0.3	6.2
3/2	525	525	-	-	-	0.9	0.3	-	1.3	8.8	5.8	0.3	6.2
3/3	73	73	-	-	-	0.8	0.4	-	1.2	59.5	1.7	0.4	2.1
4/1	1090	1090	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	111	111	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1362	1362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		43.3	Total Delay for Signalled Lanes (pcuHr):		13.42	Cycle Time (s): 90				
			PRC Over All Lanes (%):		43.3	Total Delay Over All Lanes(pcuHr):		13.42					



Full Input Data And Results

Scenario 10: '2037pm final' (FG10: '2037pm final', Plan 1: 'all stages')

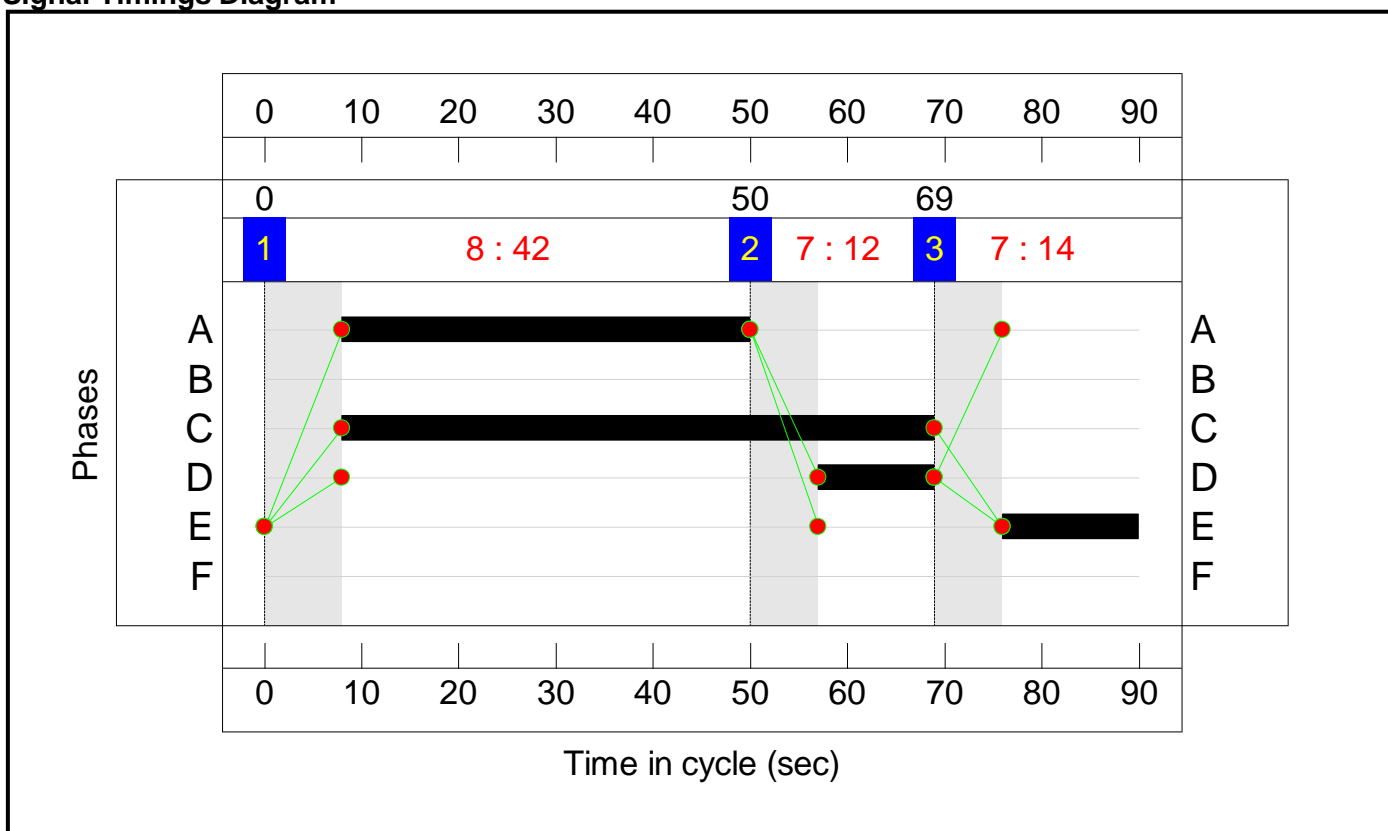
Stage Sequence Diagram



Stage Timings

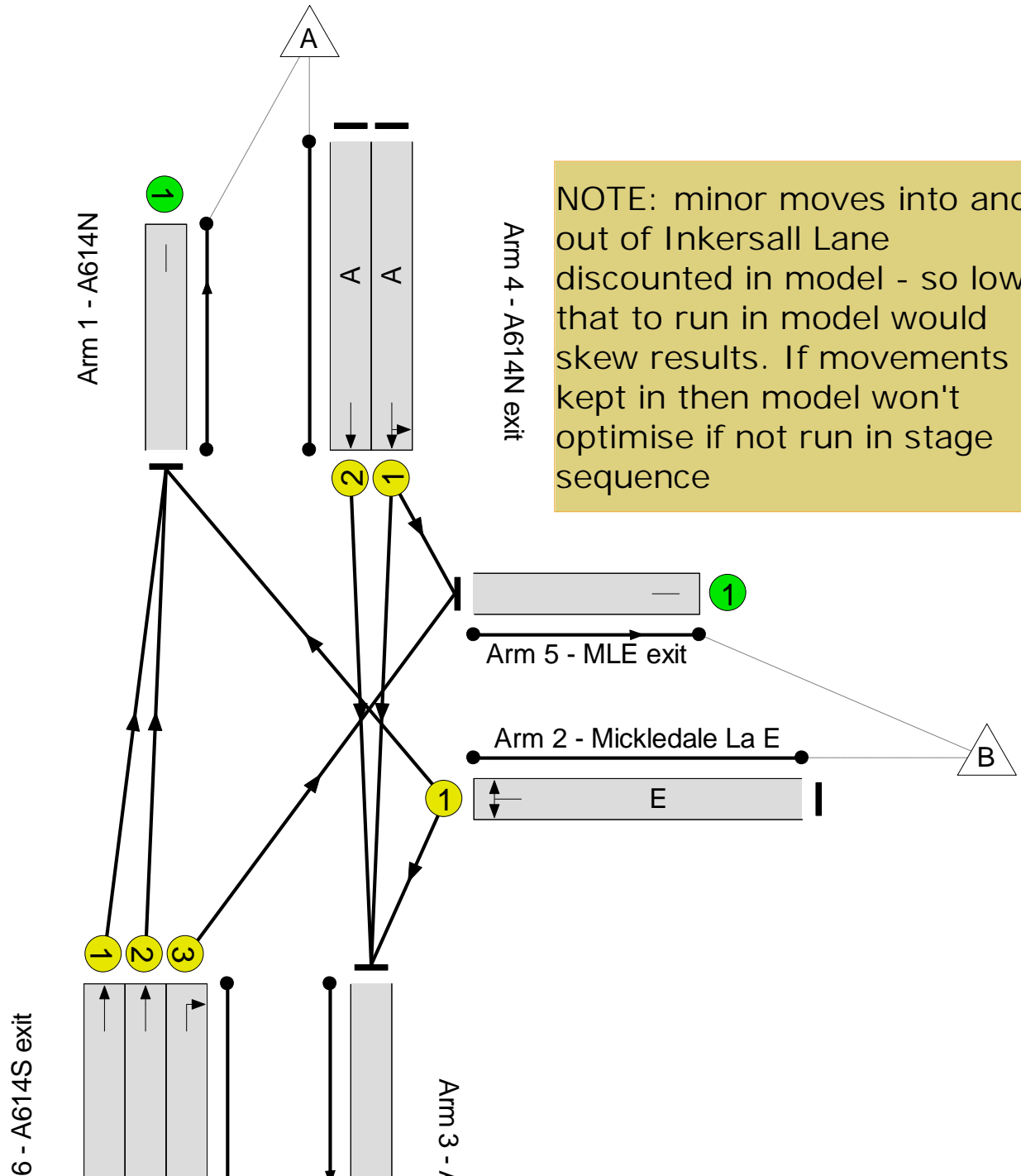

Stage	1	2	3
Duration	42	12	14
Change Point	0	50	69

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 45.3 %  
Total Traffic Delay: 14.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>61.9%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>61.9%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	42	-	553	1900	908	60.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	42	-	553	1900	908	60.9%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	14	-	180	1800	300	60.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	557	1900	1309	42.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	556	1900	1309	42.5%
3/3	A614S Right	U	N/A	N/A	D		1	12	-	161	1800	260	61.9%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1146	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1188	Inf	Inf	0.0%

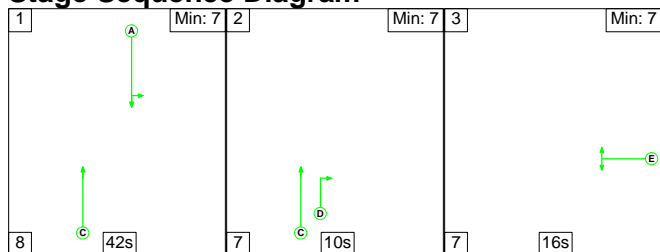
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	10.6	3.8	0.0	14.4	-	-	-	-
1/1	553	553	-	-	-	2.7	0.8	-	3.4	22.4	10.1	0.8	10.9
1/2	553	553	-	-	-	2.7	0.8	-	3.4	22.4	10.1	0.8	10.9
2/1	180	180	-	-	-	1.7	0.7	-	2.5	49.6	4.2	0.7	4.9
3/1	557	557	-	-	-	1.0	0.4	-	1.3	8.6	6.0	0.4	6.4
3/2	556	556	-	-	-	1.0	0.4	-	1.3	8.5	6.0	0.4	6.4
3/3	161	161	-	-	-	1.6	0.8	-	2.4	54.1	3.8	0.8	4.6
4/1	1146	1146	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1188	1188	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		45.3	Total Delay for Signalled Lanes (pcuHr):		14.41	Cycle Time (s):		90		
			PRC Over All Lanes (%):		45.3	Total Delay Over All Lanes(pcuHr):		14.41					

Full Input Data And Results

Scenario 11: '2037ip final' (FG11: '2037ip final', Plan 1: 'all stages')

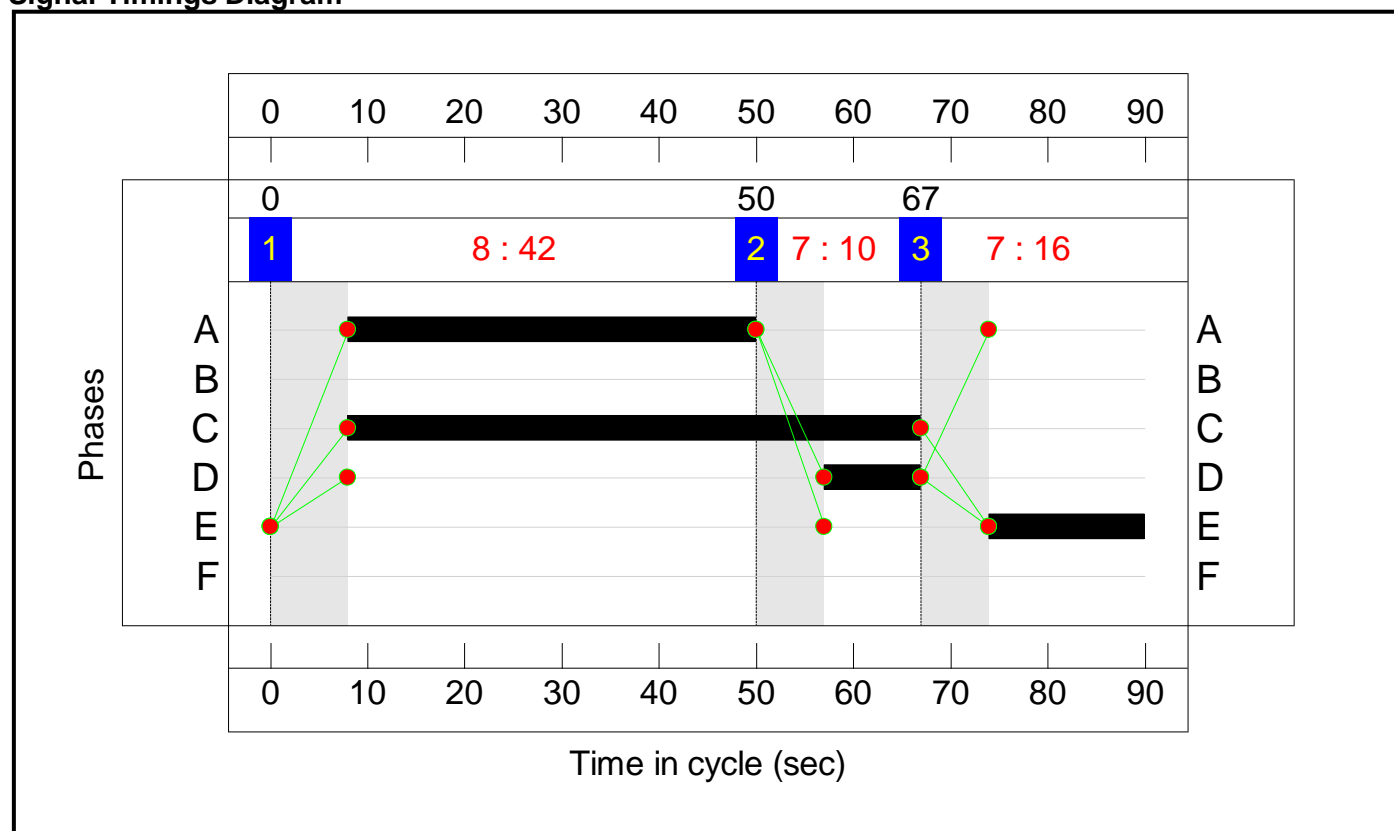
Stage Sequence Diagram



Stage Timings

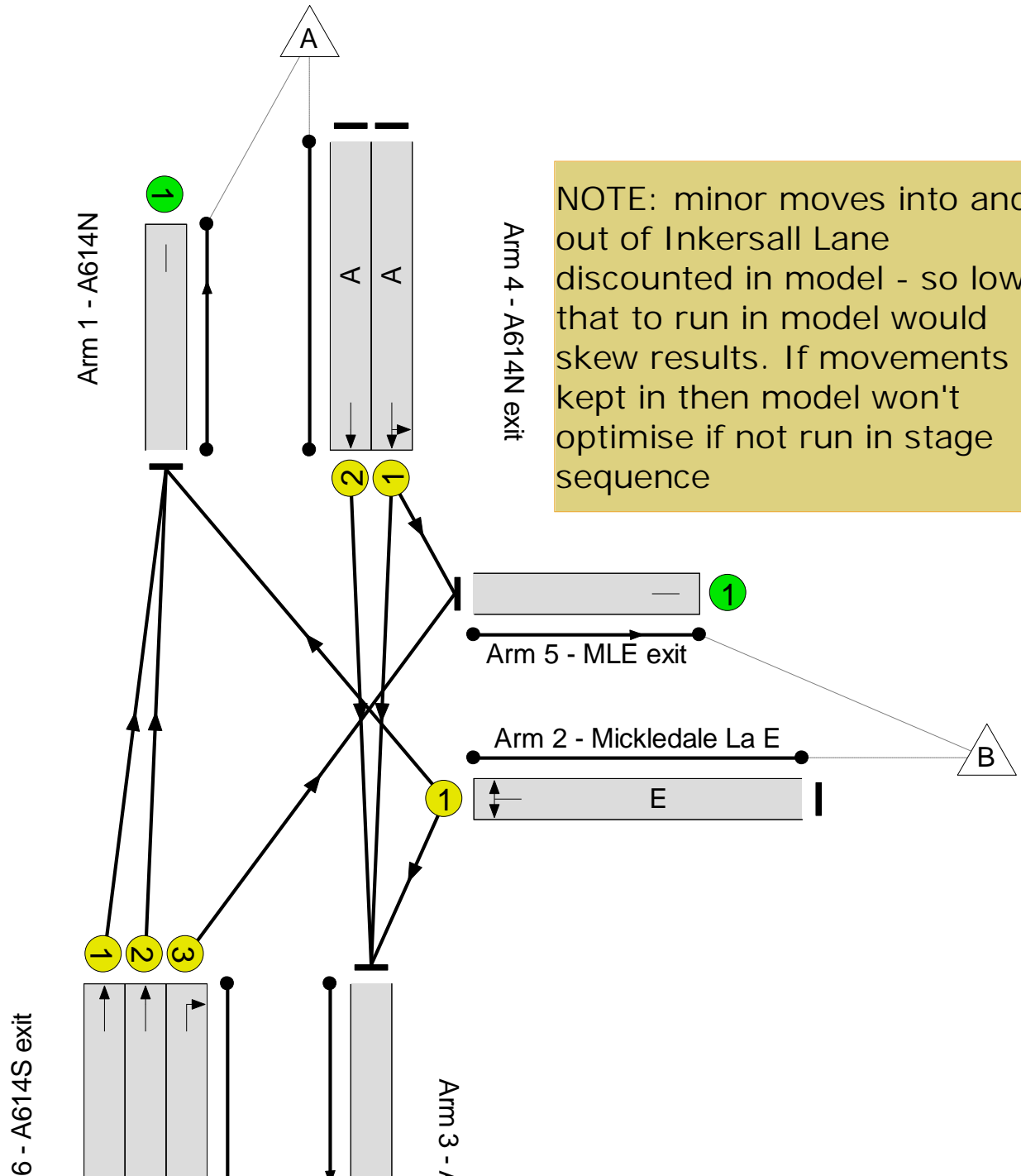

Stage	1	2	3
Duration	42	10	16
Change Point	0	50	67

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 117.0 %  
Total Traffic Delay: 8.3 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>41.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>41.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	42	-	375	1900	908	41.3%
1/2	A614N Ahead	U	N/A	N/A	A		1	42	-	374	1900	908	41.2%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	16	-	141	1800	340	41.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	355	1900	1267	28.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	354	1900	1267	27.9%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	87	1800	220	39.5%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	134	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	803	Inf	Inf	0.0%

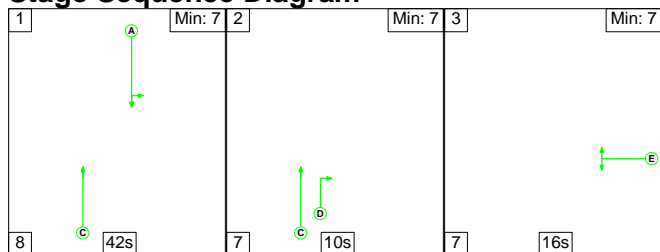
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	6.5	1.8	0.0	8.3	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	6.5	1.8	0.0	8.3	-	-	-	-
1/1	375	375	-	-	-	1.6	0.4	-	1.9	18.7	6.0	0.4	6.4
1/2	374	374	-	-	-	1.6	0.3	-	1.9	18.7	6.0	0.3	6.4
2/1	141	141	-	-	-	1.3	0.4	-	1.6	41.1	3.1	0.4	3.4
3/1	355	355	-	-	-	0.6	0.2	-	0.8	8.1	3.5	0.2	3.7
3/2	354	354	-	-	-	0.6	0.2	-	0.8	8.1	3.5	0.2	3.7
3/3	87	87	-	-	-	0.9	0.3	-	1.2	49.9	2.0	0.3	2.3
4/1	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	134	134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	803	803	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		117.0	Total Delay for Signalled Lanes (pcuHr):		8.30	Cycle Time (s):		90		
			PRC Over All Lanes (%):		117.0	Total Delay Over All Lanes(pcuHr):		8.30					

Full Input Data And Results

Scenario 12: '2037op final' (FG12: '2037op final', Plan 1: 'all stages')

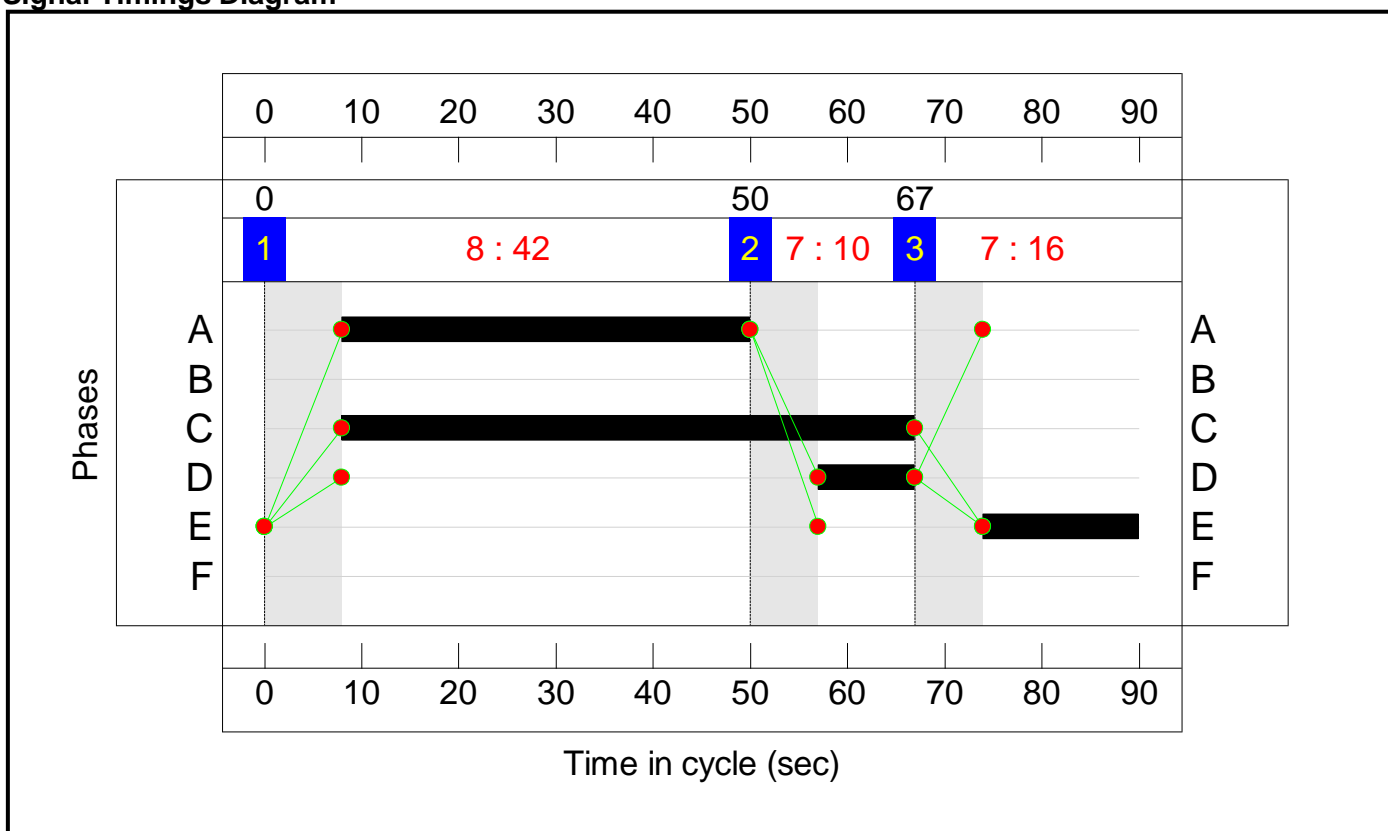
Stage Sequence Diagram



Stage Timings

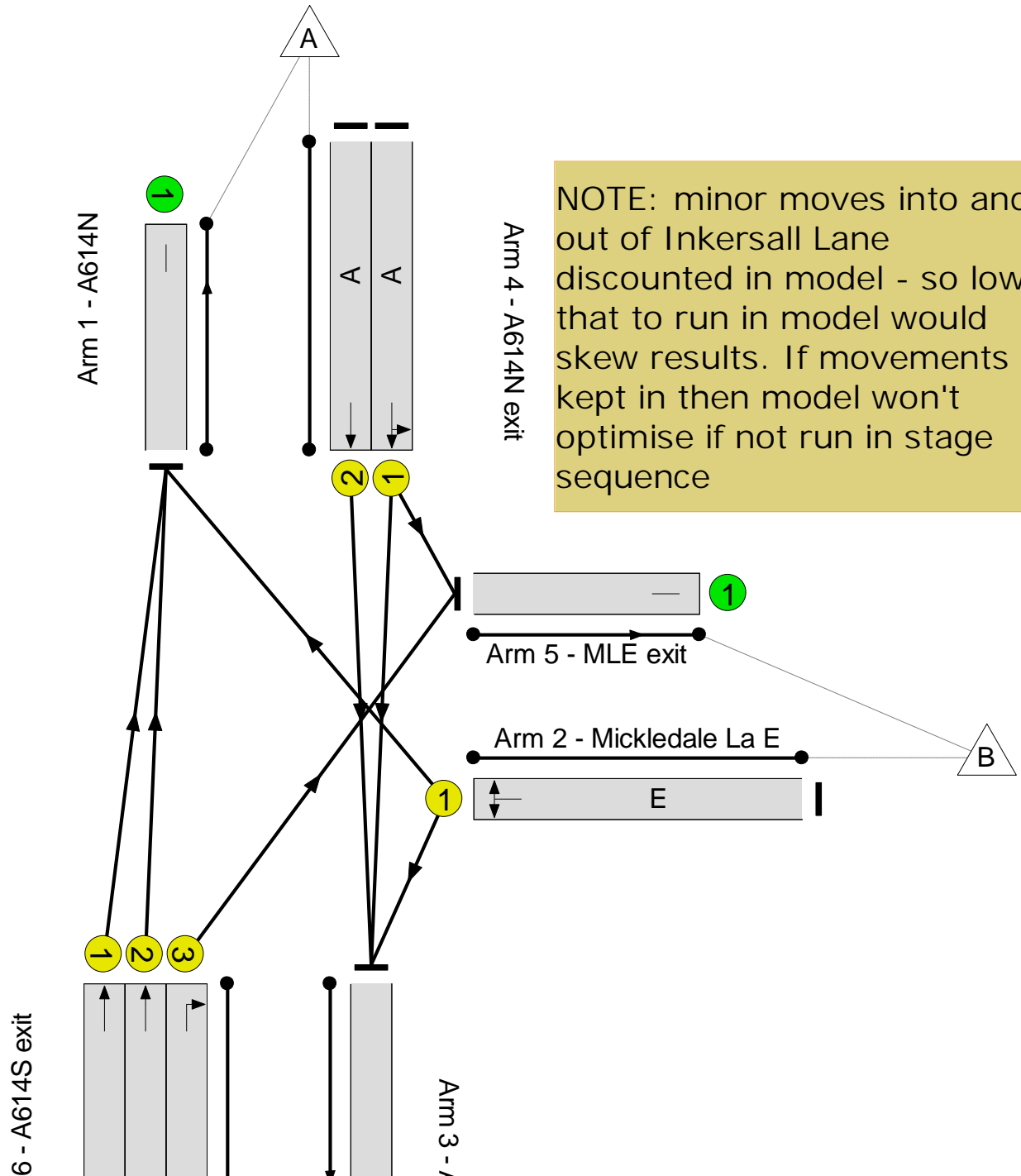

Stage	1	2	3
Duration	42	10	16
Change Point	0	50	67

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 2050.0 %  
Total Traffic Delay: 0.7 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>4.2%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>4.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	42	-	36	1900	908	4.0%
1/2	A614N Ahead	U	N/A	N/A	A		1	42	-	38	1900	908	4.2%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	16	-	14	1800	340	4.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	35	1900	1267	2.8%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	34	1900	1267	2.7%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	9	1800	220	4.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	14	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	79	Inf	Inf	0.0%

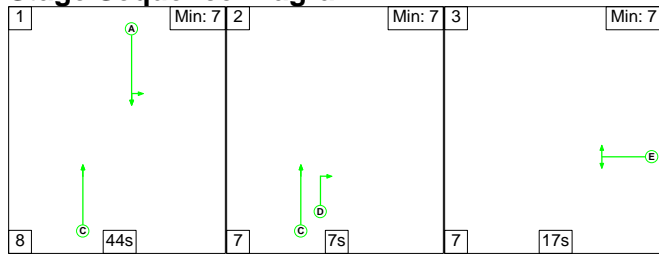
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	0.6	0.1	0.0	0.7	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	0.6	0.1	0.0	0.7	-	-	-	-
1/1	36	36	-	-	-	0.1	0.0	-	0.1	14.6	0.5	0.0	0.5
1/2	38	38	-	-	-	0.1	0.0	-	0.2	14.6	0.5	0.0	0.5
2/1	14	14	-	-	-	0.1	0.0	-	0.1	35.5	0.3	0.0	0.3
3/1	35	35	-	-	-	0.1	0.0	-	0.1	6.6	0.3	0.0	0.3
3/2	34	34	-	-	-	0.0	0.0	-	0.1	6.6	0.3	0.0	0.3
3/3	9	9	-	-	-	0.1	0.0	-	0.1	43.6	0.2	0.0	0.2
4/1	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	14	14	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	79	79	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 2050.0		PRC Over All Lanes (%): 2050.0		Total Delay for Signalled Lanes (pcuHr): 0.67		Total Delay Over All Lanes(pcuHr): 0.67		Cycle Time (s): 90		

Full Input Data And Results

Scenario 13: '2023amLG' (FG13: '2023amLG', Plan 1: 'all stages')

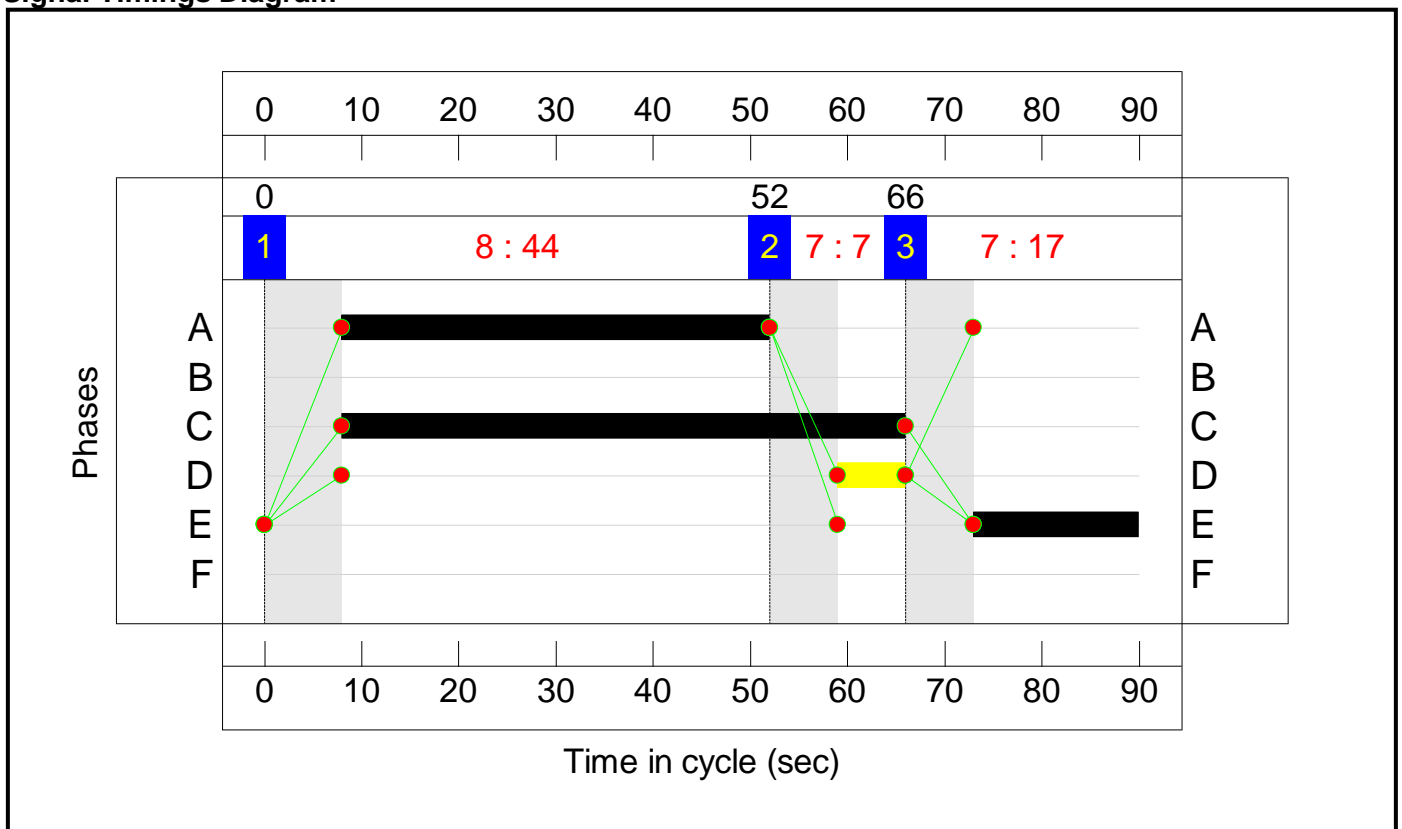
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	7	17
Change Point	0	52	66

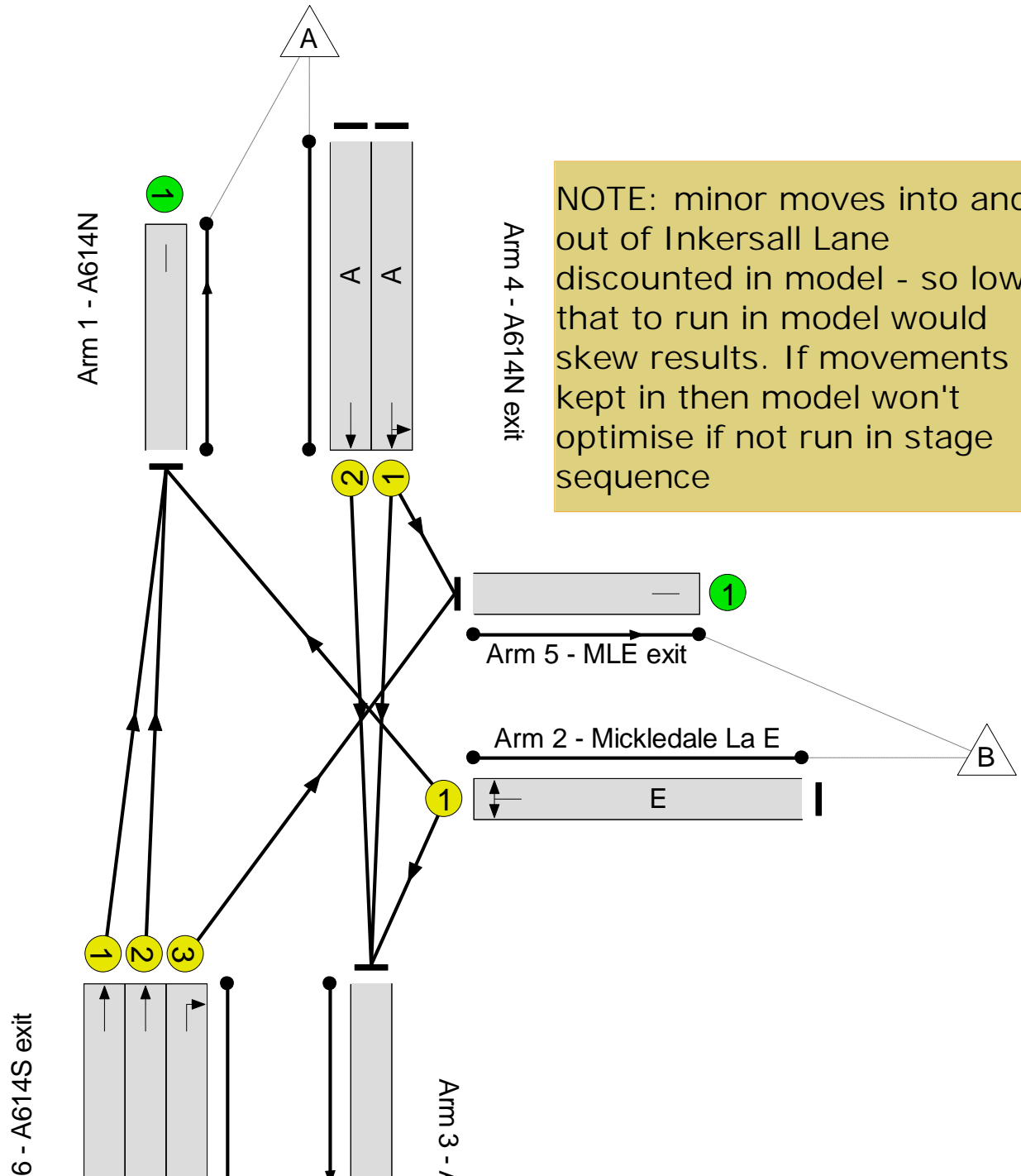

Signal Timings Diagram





Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 72.0 %  
Total Traffic Delay: 10.7 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>52.3%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>52.3%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	44	-	496	1900	950	52.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	44	-	497	1900	950	52.3%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	184	1800	360	51.1%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	434	1900	1246	34.8%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	433	1900	1246	34.8%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	66	1800	160	41.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	901	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	98	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1111	Inf	Inf	0.0%

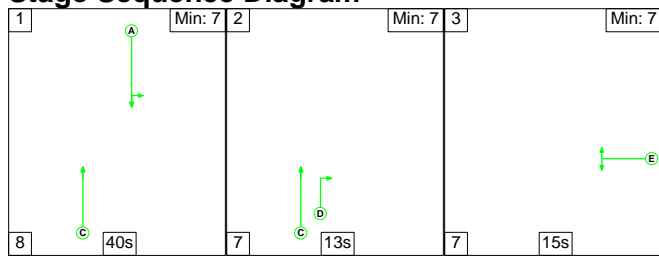
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	8.2	2.5	0.0	10.7	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	8.2	2.5	0.0	10.7	-	-	-	-
1/1	496	496	-	-	-	2.1	0.5	-	2.6	19.2	8.3	0.5	8.8
1/2	497	497	-	-	-	2.1	0.5	-	2.7	19.2	8.3	0.5	8.8
2/1	184	184	-	-	-	1.6	0.5	-	2.2	42.3	4.1	0.5	4.6
3/1	434	434	-	-	-	0.8	0.3	-	1.1	9.1	4.8	0.3	5.1
3/2	433	433	-	-	-	0.8	0.3	-	1.1	9.1	4.8	0.3	5.1
3/3	66	66	-	-	-	0.7	0.3	-	1.1	57.8	1.6	0.3	1.9
4/1	901	901	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	98	98	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1111	1111	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		72.0	Total Delay for Signalled Lanes (pcuHr):		10.71	Cycle Time (s): 90				
			PRC Over All Lanes (%):		72.0	Total Delay Over All Lanes(pcuHr):		10.71					

Full Input Data And Results

Scenario 14: '2023pmLG' (FG14: '2023pmLG', Plan 1: 'all stages')

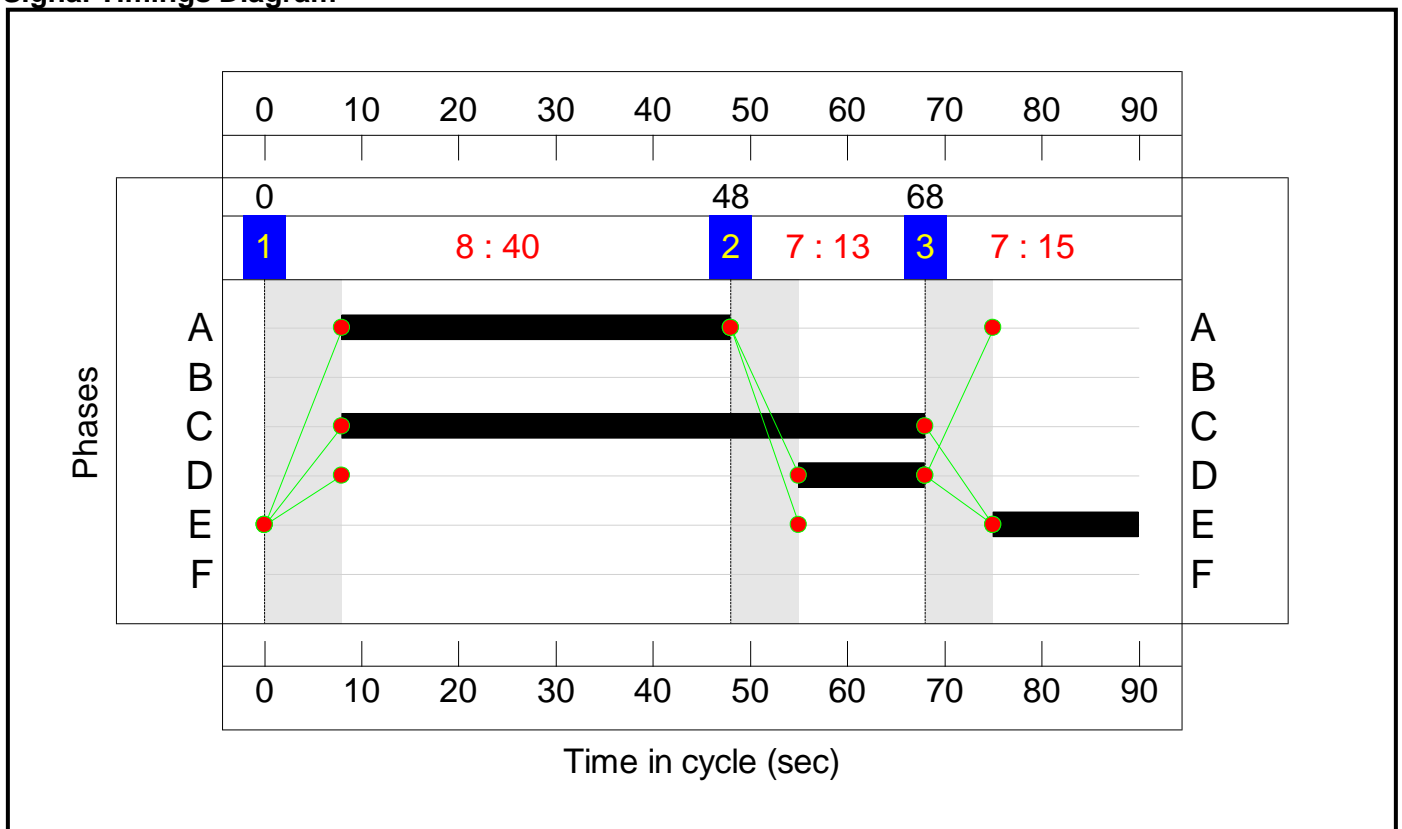
Stage Sequence Diagram



Stage Timings

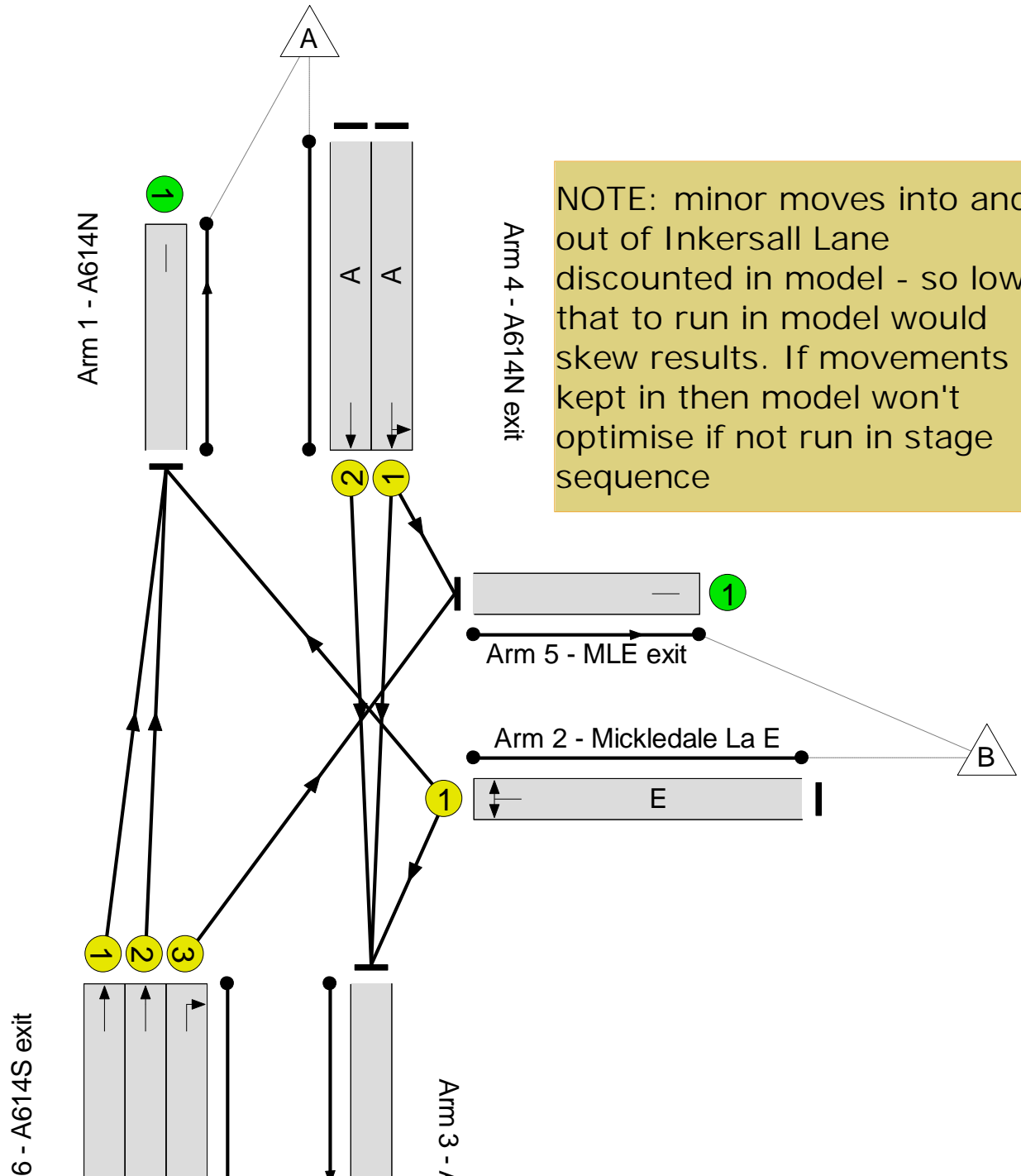

Stage	1	2	3
Duration	40	13	15
Change Point	0	48	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 72.6 %  
Total Traffic Delay: 11.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>52.1%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>52.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	451	1900	866	52.1%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	451	1900	866	52.1%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	160	1800	320	50.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	444	1900	1288	34.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	444	1900	1288	34.5%
3/3	A614S Right	U	N/A	N/A	D		1	13	-	146	1800	280	52.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	915	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	201	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	980	Inf	Inf	0.0%



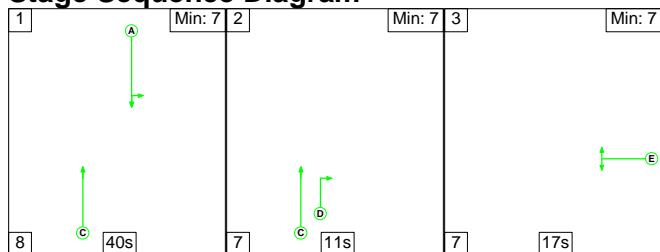
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	8.8	2.6	0.0	11.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	8.8	2.6	0.0	11.4	-	-	-	-
1/1	451	451	-	-	-	2.2	0.5	-	2.7	21.8	8.0	0.5	8.6
1/2	451	451	-	-	-	2.2	0.5	-	2.7	21.8	8.0	0.5	8.6
2/1	160	160	-	-	-	1.5	0.5	-	2.0	44.6	3.6	0.5	4.1
3/1	444	444	-	-	-	0.8	0.3	-	1.0	8.2	4.6	0.3	4.8
3/2	444	444	-	-	-	0.8	0.3	-	1.0	8.2	4.6	0.3	4.8
3/3	146	146	-	-	-	1.4	0.5	-	2.0	48.3	3.3	0.5	3.9
4/1	915	915	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	201	201	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	980	980	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		72.6	Total Delay for Signalled Lanes (pcuHr):		11.44	Cycle Time (s): 90				
			PRC Over All Lanes (%):		72.6	Total Delay Over All Lanes(pcuHr):		11.44					

Full Input Data And Results

Scenario 15: '2023ipLG' (FG15: '2023ipLG', Plan 1: 'all stages')

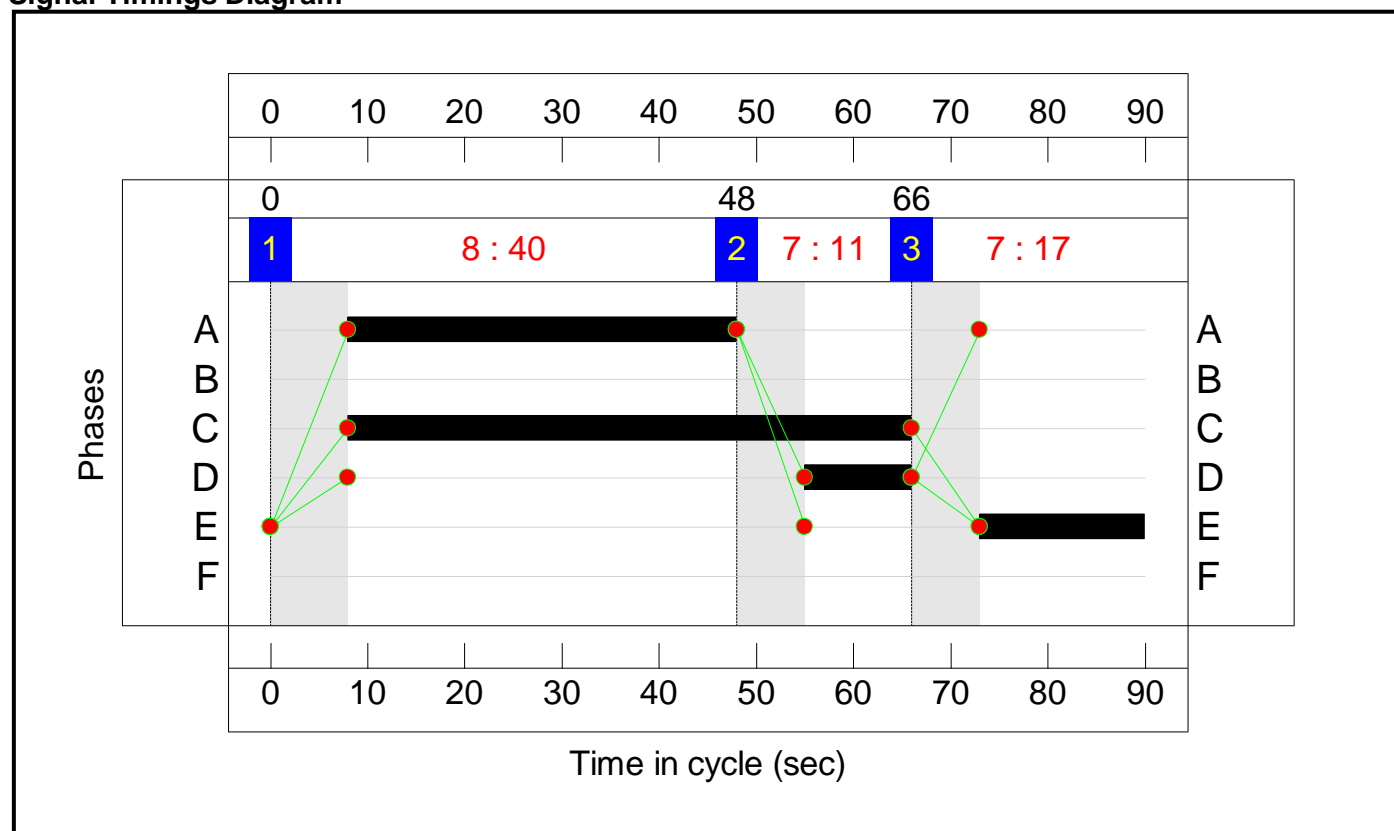
Stage Sequence Diagram



Stage Timings

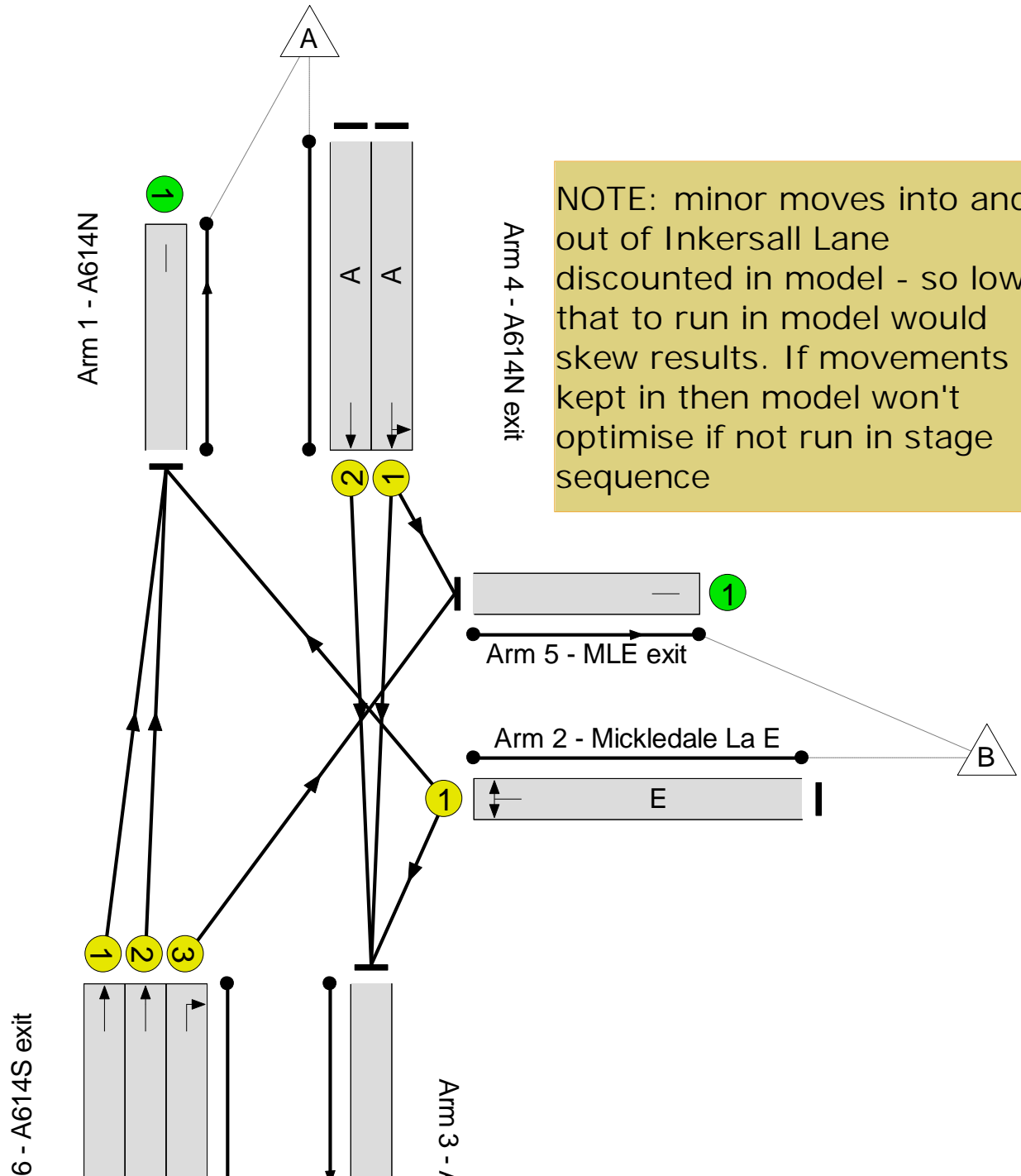

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 154.6 %  
Total Traffic Delay: 7.0 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>35.4%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>35.4%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	306	1900	866	35.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	305	1900	866	35.2%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	126	1800	360	35.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	291	1900	1246	23.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	290	1900	1246	23.3%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	80	1800	240	33.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	615	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	120	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	663	Inf	Inf	0.0%

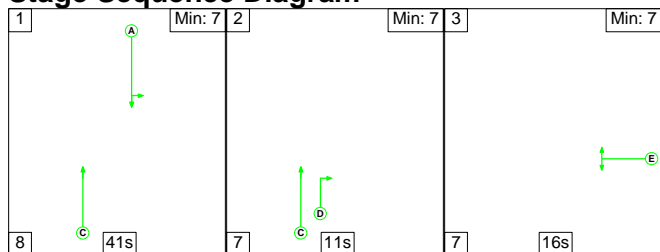
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	5.6	1.4	0.0	7.0	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	5.6	1.4	0.0	7.0	-	-	-	-
1/1	306	306	-	-	-	1.4	0.3	-	1.6	19.1	4.9	0.3	5.2
1/2	305	305	-	-	-	1.3	0.3	-	1.6	19.1	4.9	0.3	5.2
2/1	126	126	-	-	-	1.1	0.3	-	1.4	38.7	2.7	0.3	3.0
3/1	291	291	-	-	-	0.5	0.2	-	0.7	8.2	2.9	0.2	3.1
3/2	290	290	-	-	-	0.5	0.2	-	0.7	8.2	2.9	0.2	3.1
3/3	80	80	-	-	-	0.8	0.2	-	1.0	46.6	1.8	0.2	2.0
4/1	615	615	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	120	120	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	663	663	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		154.6	Total Delay for Signalled Lanes (pcuHr):		6.96	Cycle Time (s): 90				
			PRC Over All Lanes (%):		154.6	Total Delay Over All Lanes(pcuHr):		6.96					

Full Input Data And Results

Scenario 16: '2023opLG' (FG16: '2023opLG', Plan 1: 'all stages')

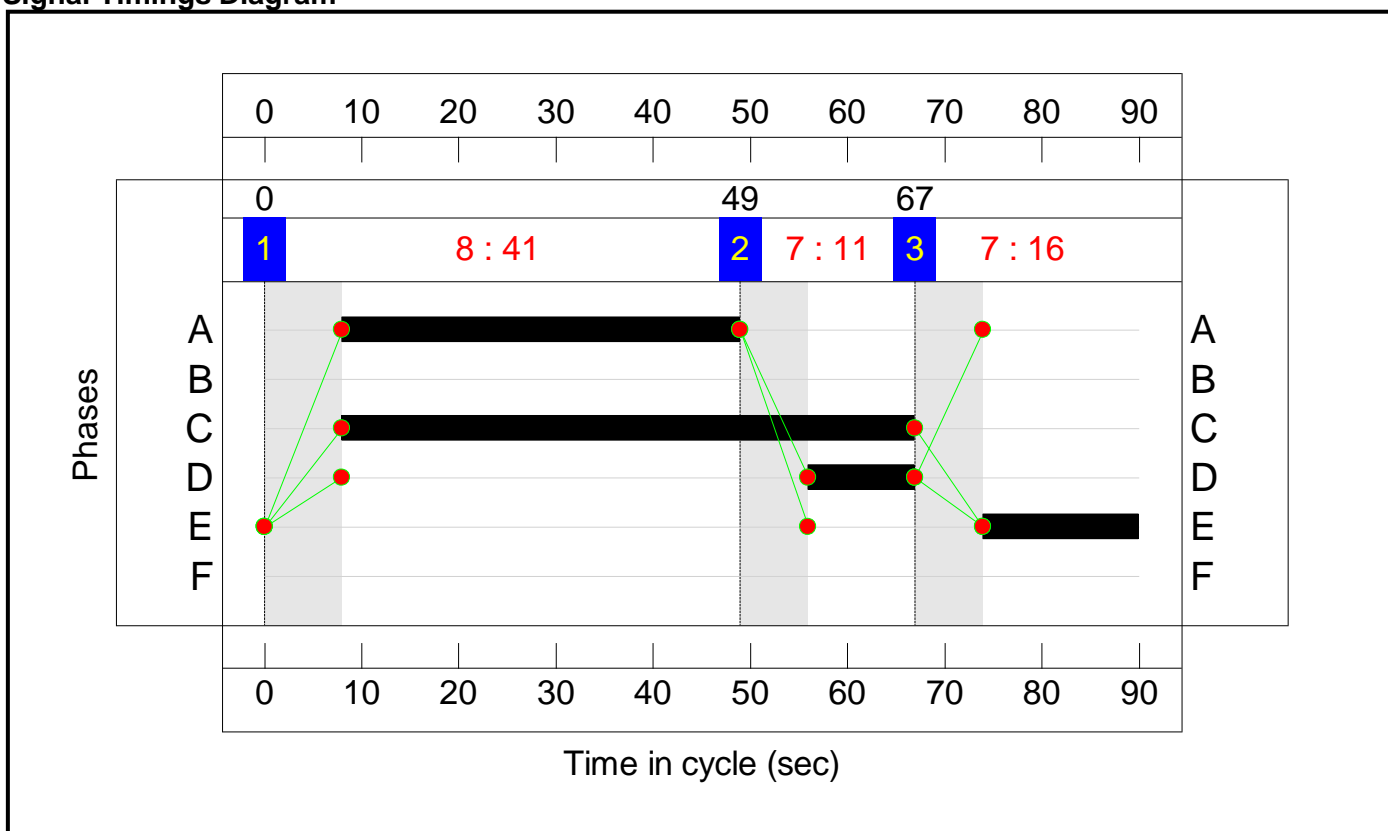
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	41	11	16
Change Point	0	49	67

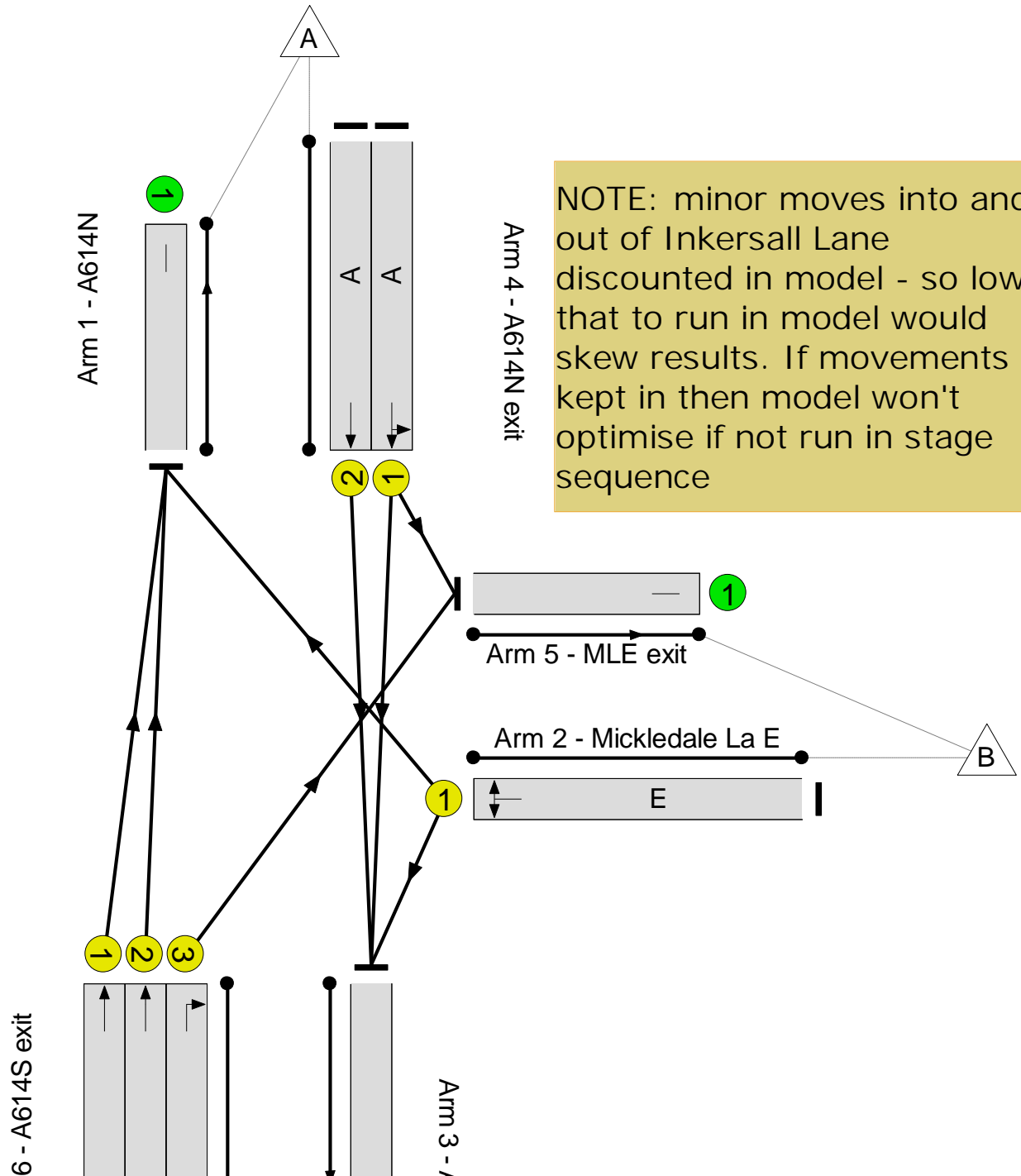

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



A614/ Mickledale Lane  
PRC: 2450.0 %  
Total Traffic Delay: 0.6 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	41	-	29	1900	887	3.3%
1/2	A614N Ahead	U	N/A	N/A	A		1	41	-	31	1900	887	3.5%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	16	-	12	1800	340	3.5%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	28	1900	1267	2.2%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	28	1900	1267	2.2%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	8	1800	240	3.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	59	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	65	Inf	Inf	0.0%

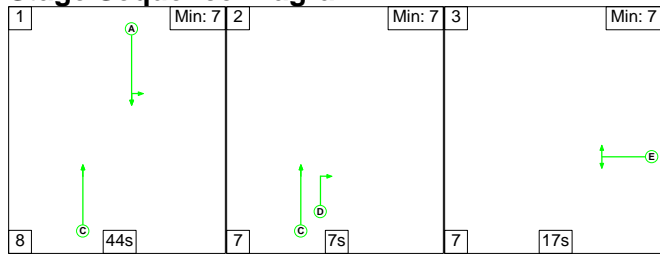
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	0.5	0.1	0.0	0.6	-	-	-	-
1/1	29	29	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.4
1/2	31	31	-	-	-	0.1	0.0	-	0.1	15.2	0.4	0.0	0.4
2/1	12	12	-	-	-	0.1	0.0	-	0.1	35.5	0.2	0.0	0.3
3/1	28	28	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.2
3/2	28	28	-	-	-	0.0	0.0	-	0.1	6.6	0.2	0.0	0.2
3/3	8	8	-	-	-	0.1	0.0	-	0.1	42.0	0.2	0.0	0.2
4/1	59	59	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	65	65	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 2450.0		PRC Over All Lanes (%): 2450.0		Total Delay for Signalled Lanes (pcuHr): 0.57		Total Delay Over All Lanes(pcuHr): 0.57		Cycle Time (s): 90		

Full Input Data And Results

Scenario 17: '2037amLG' (FG17: '2037amLG', Plan 1: 'all stages')

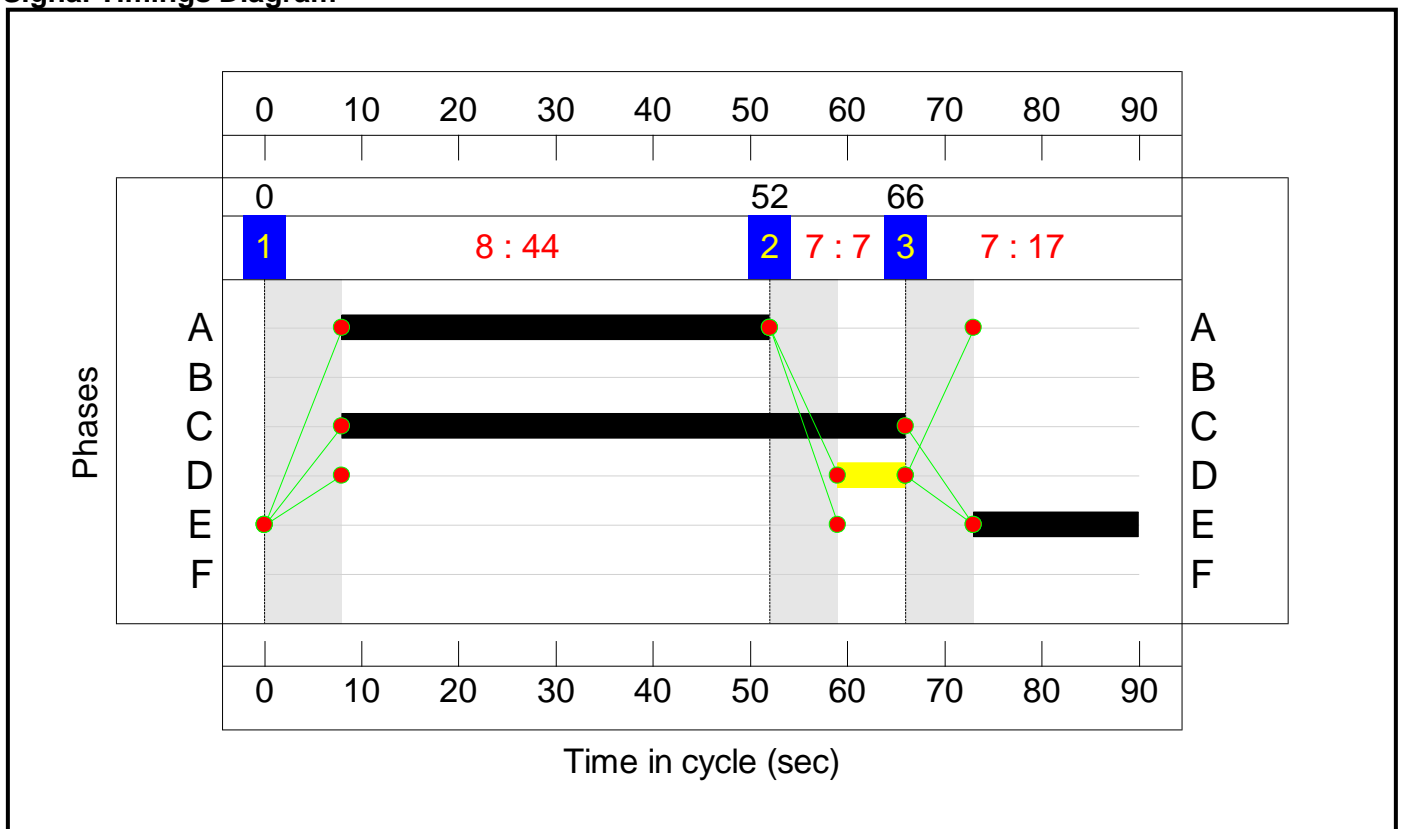
Stage Sequence Diagram



Stage Timings

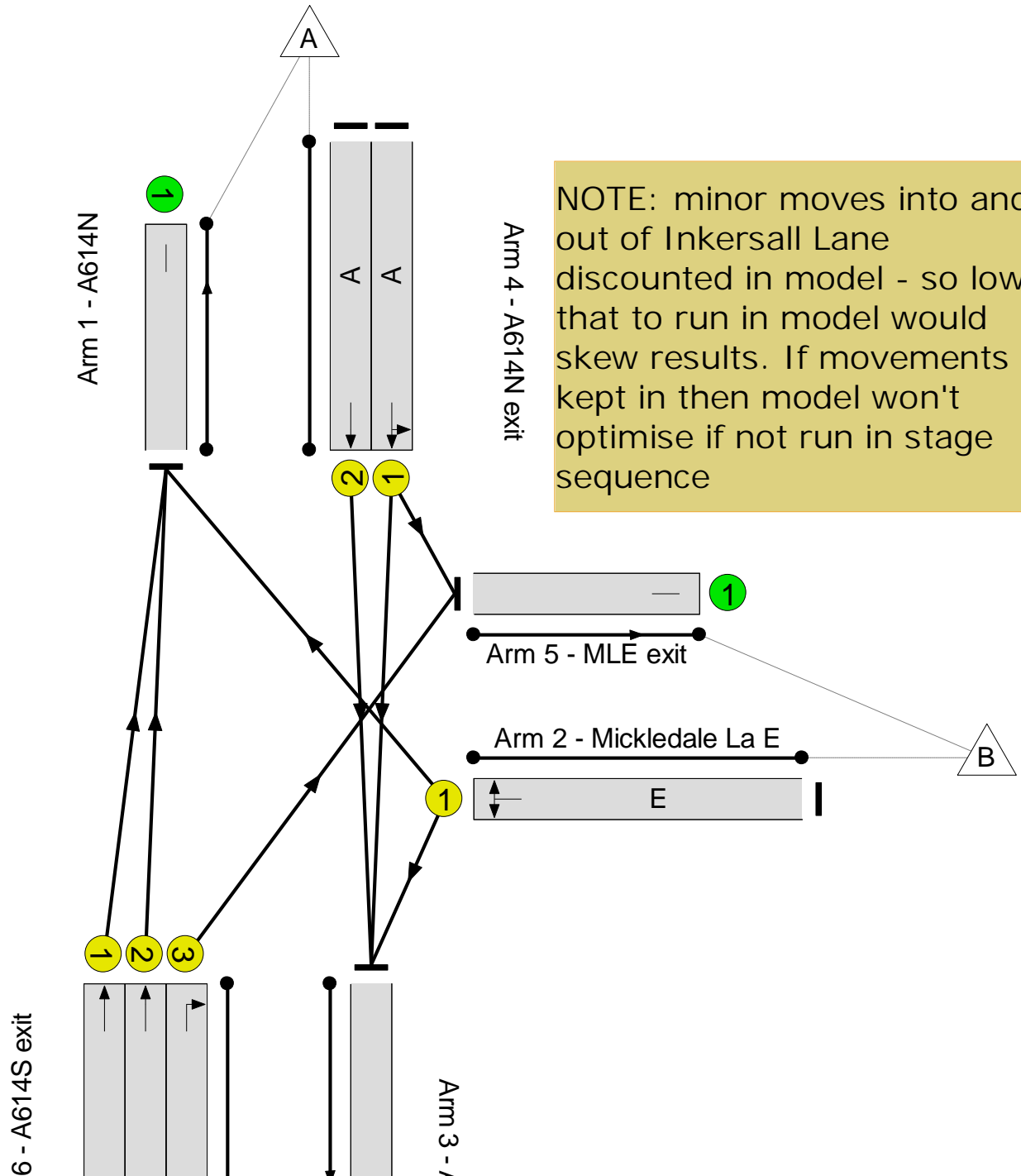

Stage	1	2	3
Duration	44	7	17
Change Point	0	52	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 74.5 %  
Total Traffic Delay: 10.5 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>51.6%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>51.6%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	44	-	489	1900	950	51.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	44	-	490	1900	950	51.6%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	179	1800	360	49.7%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	428	1900	1246	34.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	428	1900	1246	34.4%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	65	1800	160	40.6%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	888	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	95	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1096	Inf	Inf	0.0%

Full Input Data And Results

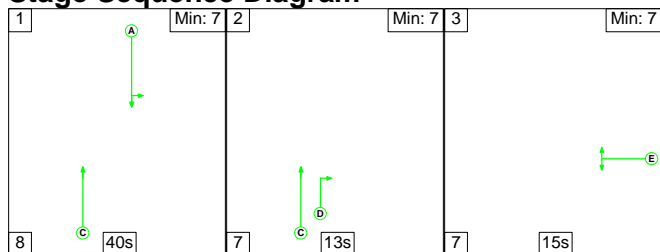
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	8.1	2.4	0.0	10.5	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	8.1	2.4	0.0	10.5	-	-	-	-
1/1	489	489	-	-	-	2.1	0.5	-	2.6	19.0	8.1	0.5	8.7
1/2	490	490	-	-	-	2.1	0.5	-	2.6	19.1	8.2	0.5	8.7
2/1	179	179	-	-	-	1.6	0.5	-	2.1	41.9	3.9	0.5	4.4
3/1	428	428	-	-	-	0.8	0.3	-	1.1	9.1	4.8	0.3	5.0
3/2	428	428	-	-	-	0.8	0.3	-	1.1	9.1	4.8	0.3	5.0
3/3	65	65	-	-	-	0.7	0.3	-	1.0	57.6	1.5	0.3	1.9
4/1	888	888	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	95	95	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1096	1096	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		74.5	Total Delay for Signalled Lanes (pcuHr):		10.47	Cycle Time (s): 90				
			PRC Over All Lanes (%):		74.5	Total Delay Over All Lanes(pcuHr):		10.47					



Full Input Data And Results

Scenario 18: '2037pmLG' (FG18: '2037pmLG', Plan 1: 'all stages')

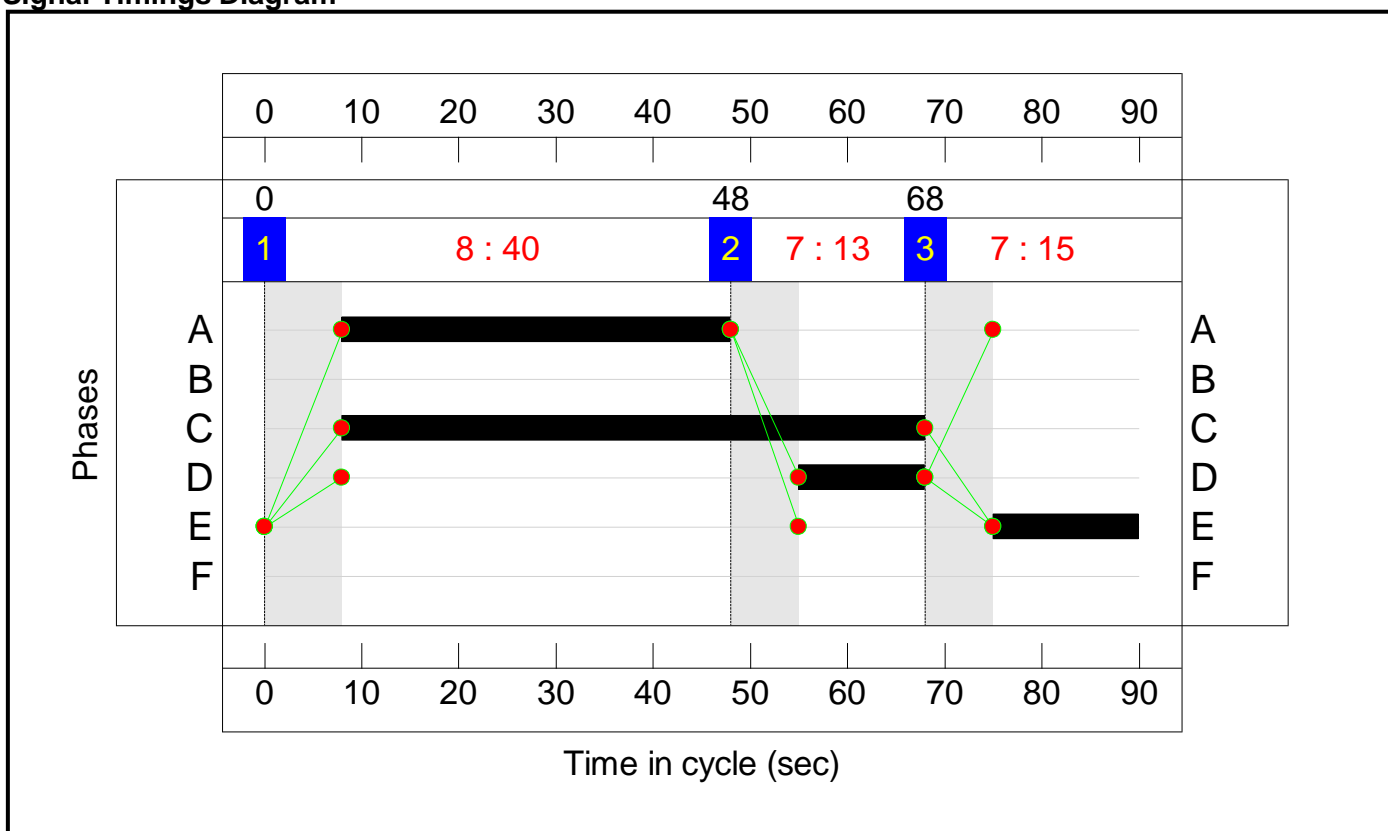
Stage Sequence Diagram



Stage Timings

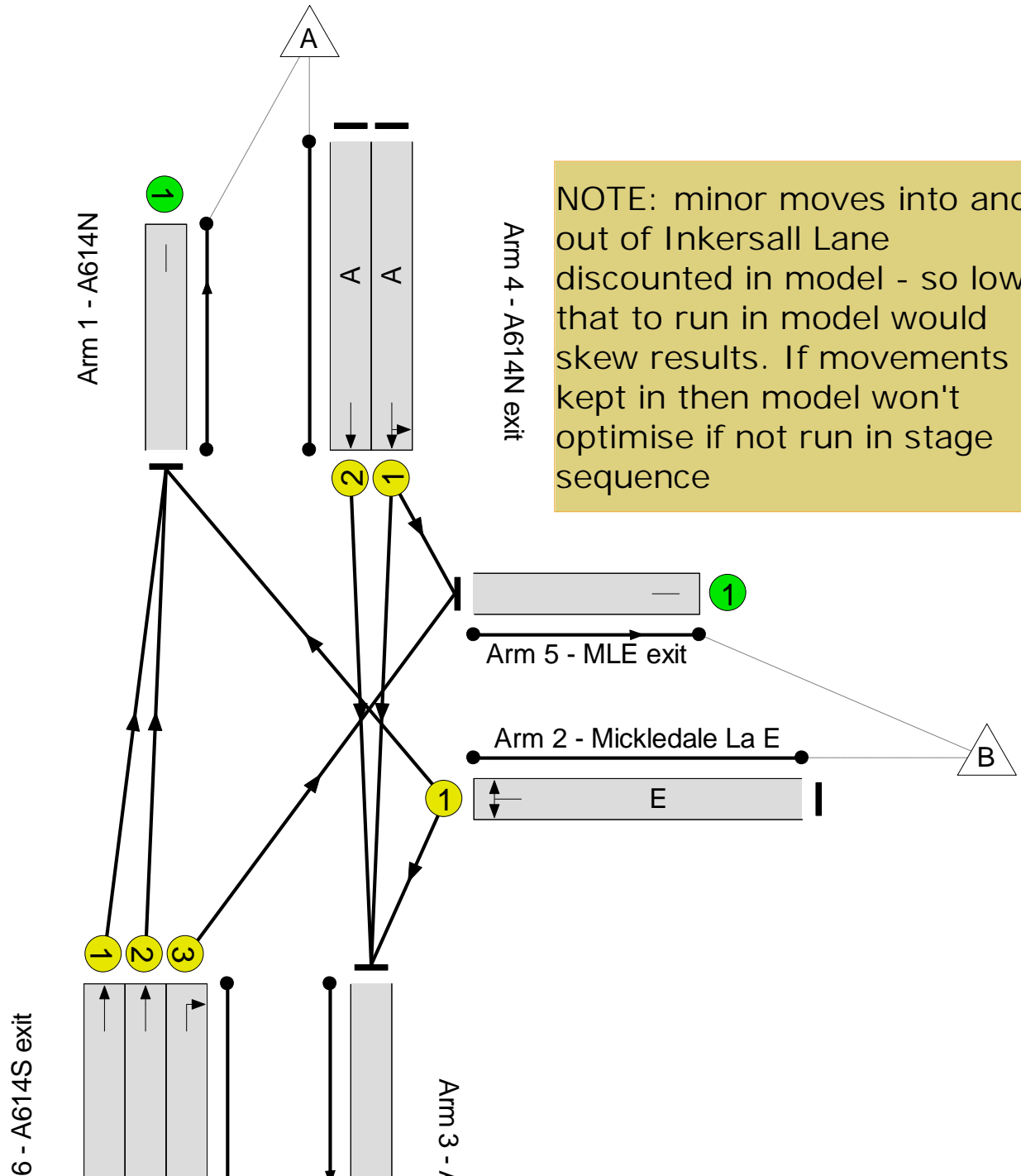

Stage	1	2	3
Duration	40	13	15
Change Point	0	48	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 76.2 %  
Total Traffic Delay: 11.1 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>51.1%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>51.1%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	440	1900	866	50.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	441	1900	866	50.9%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	156	1800	320	48.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	434	1900	1288	33.7%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	433	1900	1288	33.6%
3/3	A614S Right	U	N/A	N/A	D		1	13	-	143	1800	280	51.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	893	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	195	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	959	Inf	Inf	0.0%

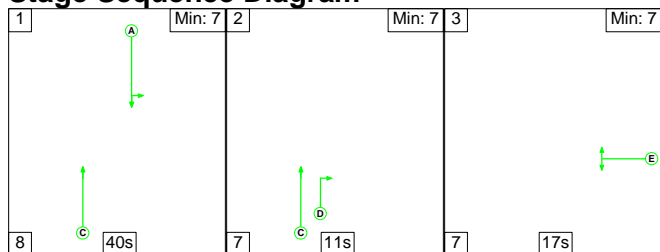
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	8.5	2.5	0.0	11.1	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	8.5	2.5	0.0	11.1	-	-	-	-
1/1	440	440	-	-	-	2.1	0.5	-	2.6	21.6	7.7	0.5	8.2
1/2	441	441	-	-	-	2.1	0.5	-	2.6	21.6	7.7	0.5	8.2
2/1	156	156	-	-	-	1.4	0.5	-	1.9	44.2	3.5	0.5	4.0
3/1	434	434	-	-	-	0.7	0.3	-	1.0	8.2	4.5	0.3	4.7
3/2	433	433	-	-	-	0.7	0.3	-	1.0	8.2	4.5	0.3	4.7
3/3	143	143	-	-	-	1.4	0.5	-	1.9	47.9	3.3	0.5	3.8
4/1	893	893	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	195	195	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	959	959	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		76.2	Total Delay for Signalled Lanes (pcuHr):		11.07	Cycle Time (s): 90				
			PRC Over All Lanes (%):		76.2	Total Delay Over All Lanes(pcuHr):		11.07					

Full Input Data And Results

Scenario 19: '2037ipLG' (FG19: '2037ipLG', Plan 1: 'all stages')

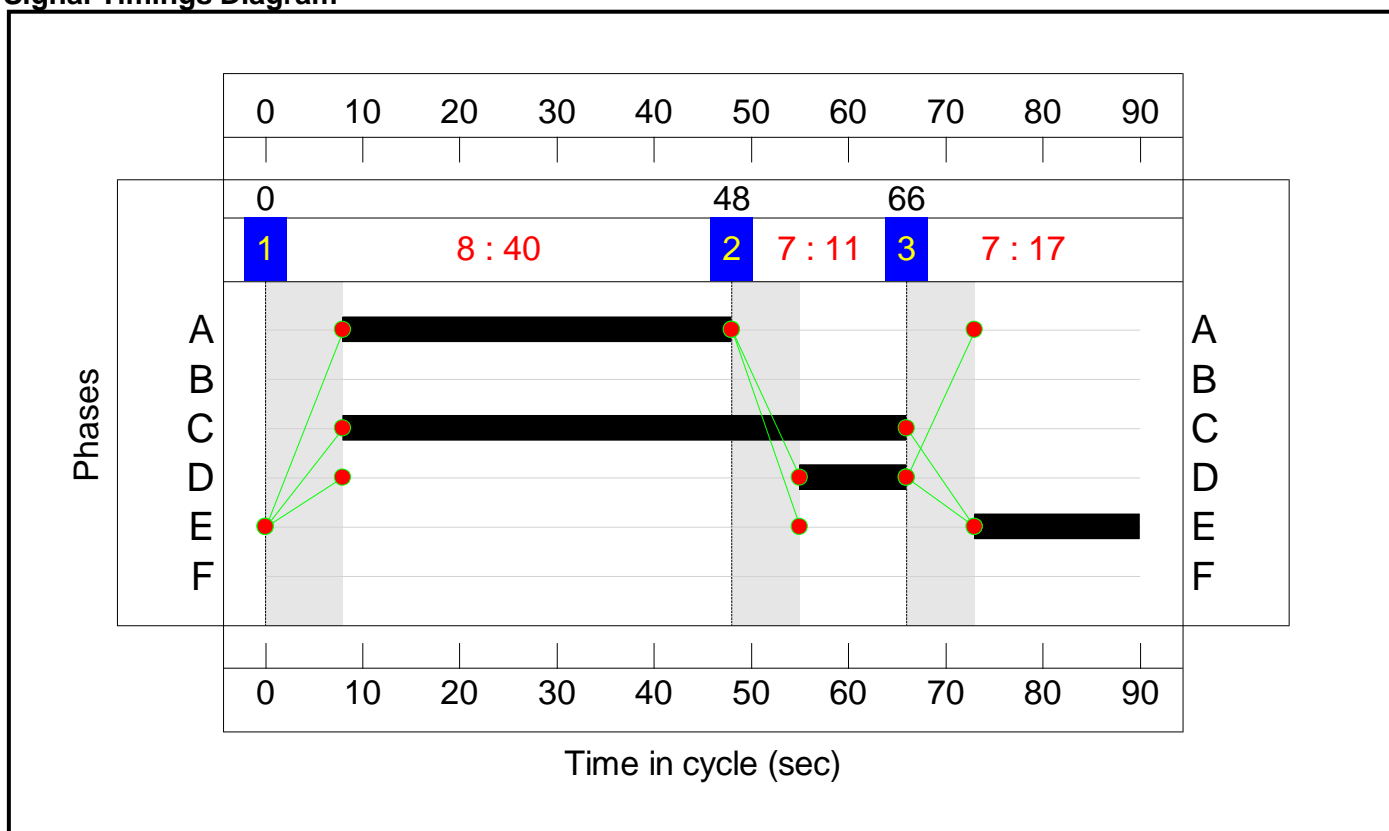
Stage Sequence Diagram



Stage Timings

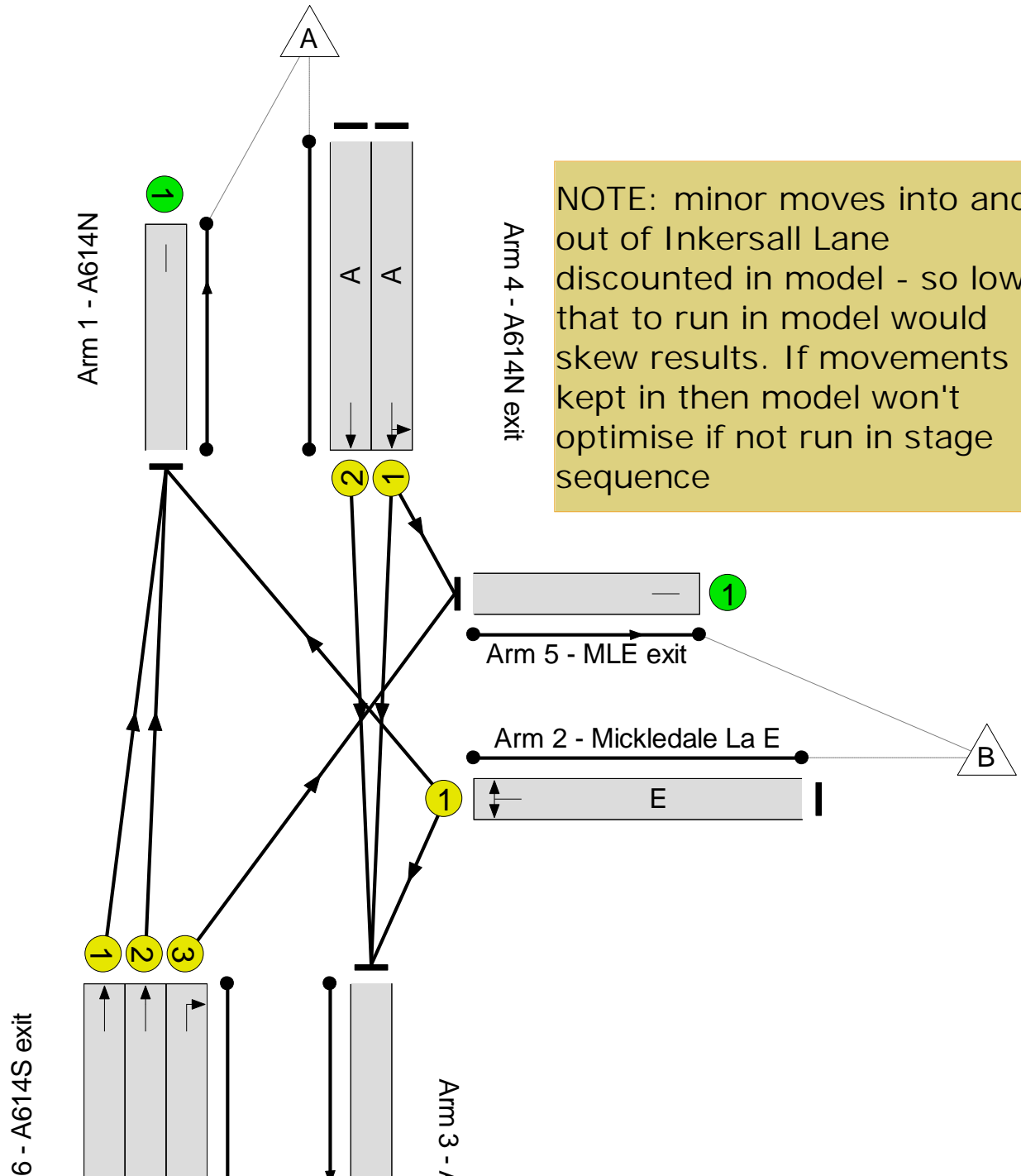

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 158.8 %  
Total Traffic Delay: 6.8 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>34.8%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>34.8%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	301	1900	866	34.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	300	1900	866	34.7%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	124	1800	360	34.4%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	285	1900	1246	22.9%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	285	1900	1246	22.9%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	79	1800	240	32.9%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	117	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%

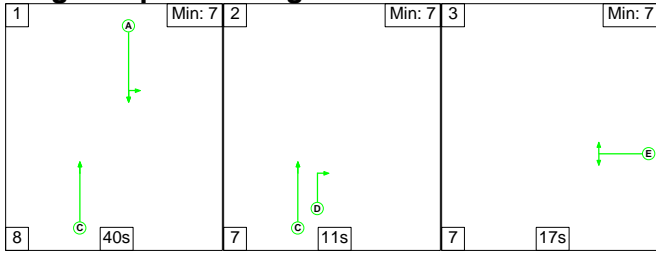
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	5.5	1.3	0.0	6.8	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	5.5	1.3	0.0	6.8	-	-	-	-
1/1	301	301	-	-	-	1.3	0.3	-	1.6	19.0	4.8	0.3	5.1
1/2	300	300	-	-	-	1.3	0.3	-	1.6	19.0	4.8	0.3	5.1
2/1	124	124	-	-	-	1.1	0.3	-	1.3	38.6	2.7	0.3	2.9
3/1	285	285	-	-	-	0.5	0.1	-	0.6	8.2	2.9	0.1	3.0
3/2	285	285	-	-	-	0.5	0.1	-	0.6	8.2	2.9	0.1	3.0
3/3	79	79	-	-	-	0.8	0.2	-	1.0	46.5	1.8	0.2	2.0
4/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	117	117	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		158.8	Total Delay for Signalled Lanes (pcuHr):		6.82	Cycle Time (s): 90				
			PRC Over All Lanes (%):		158.8	Total Delay Over All Lanes(pcuHr):		6.82					

Full Input Data And Results

Scenario 20: '2037opLG' (FG20: '2037opLG', Plan 1: 'all stages')

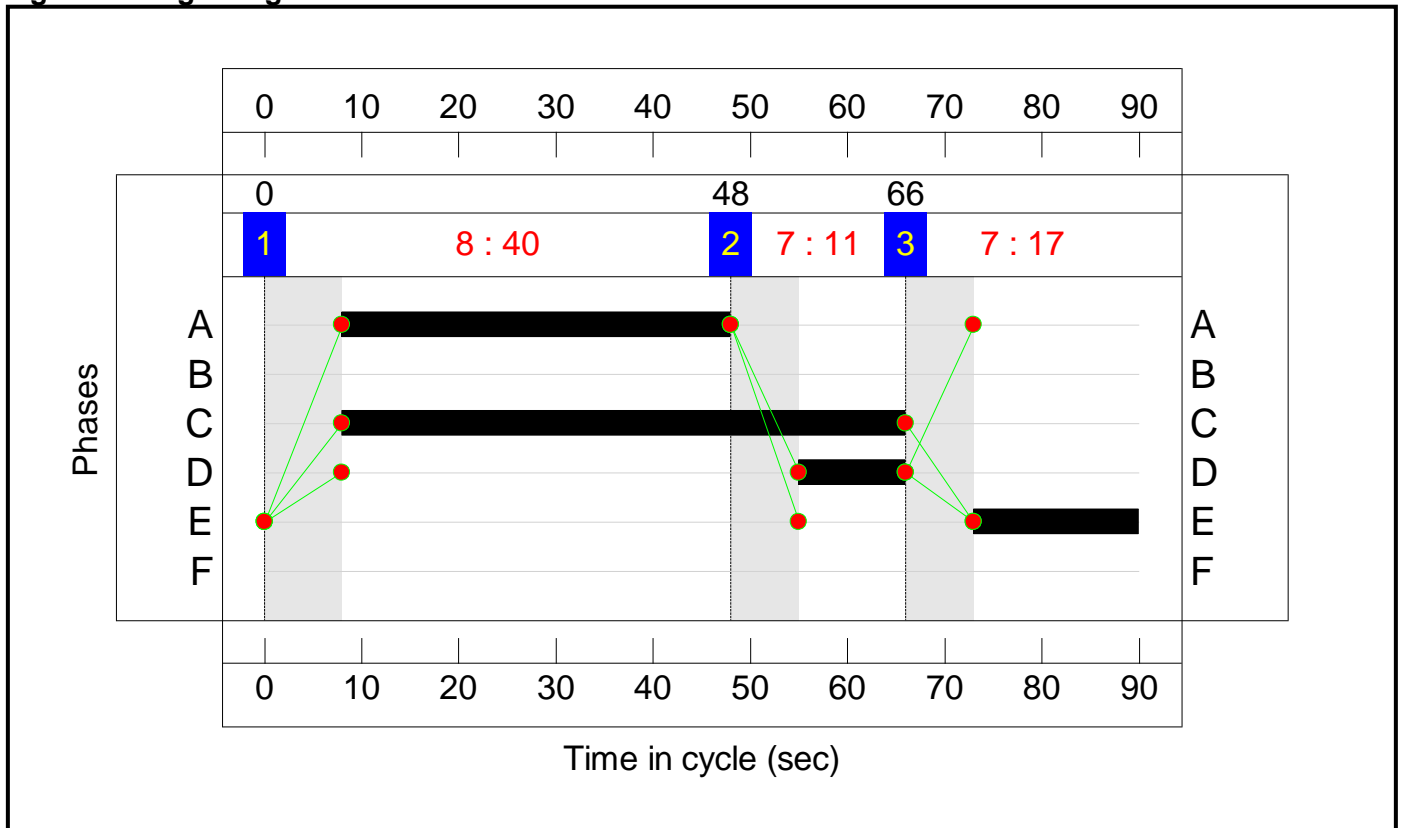
Stage Sequence Diagram



Stage Timings

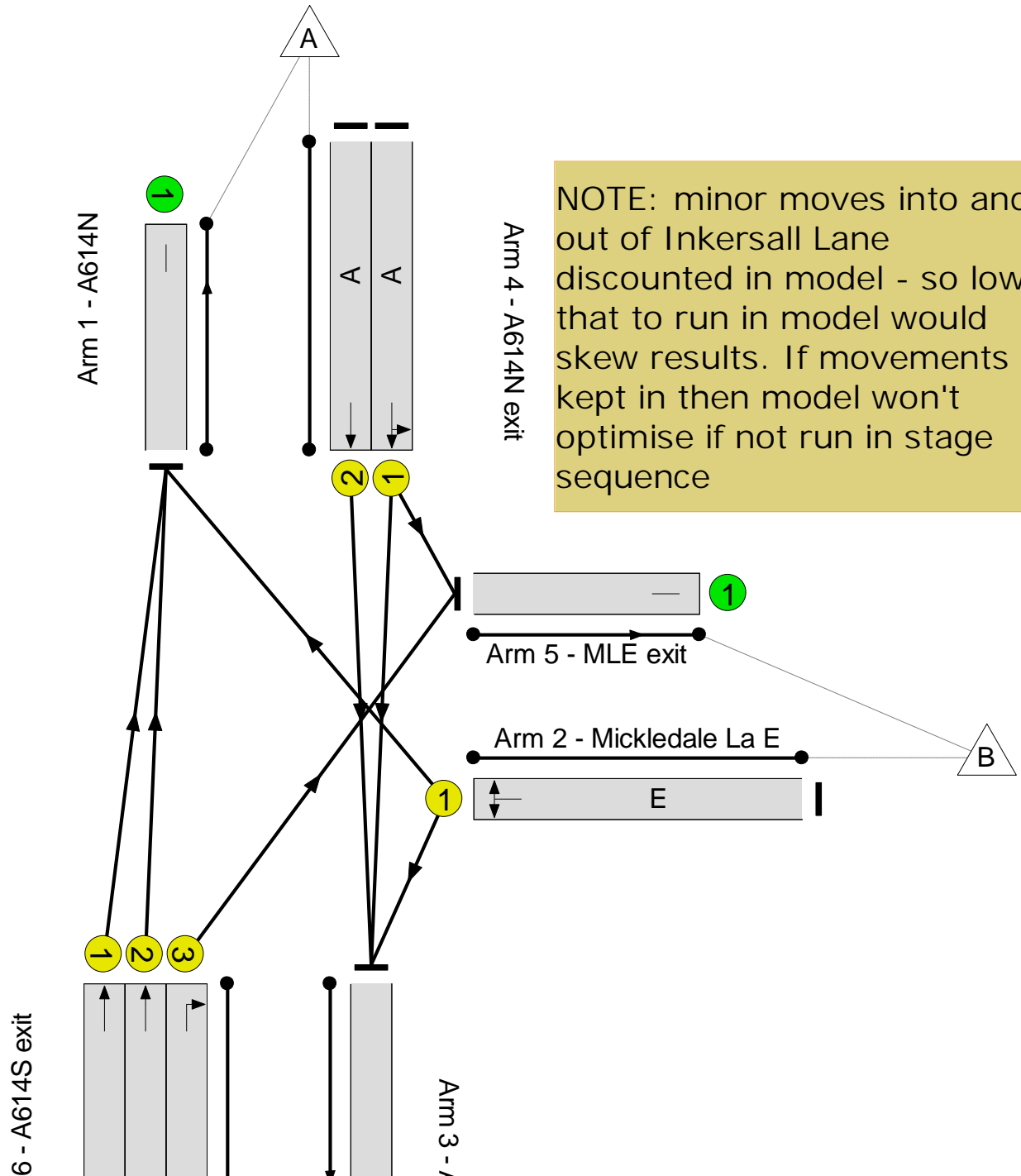

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 2496.7 %  
Total Traffic Delay: 0.6 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

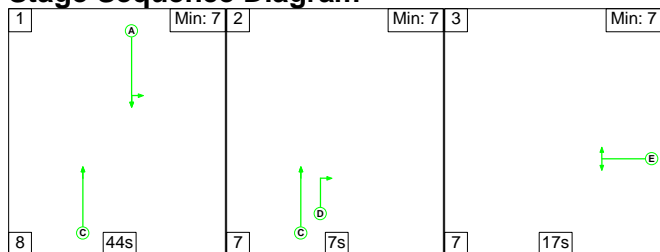
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	29	1900	866	3.4%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	30	1900	866	3.5%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	12	1800	360	3.3%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	28	1900	1246	2.2%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	28	1900	1246	2.2%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	8	1800	240	3.3%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	59	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	64	Inf	Inf	0.0%



Full Input Data And Results

Scenario 21: '2023amHG' (FG21: '2023amHG', Plan 1: 'all stages')

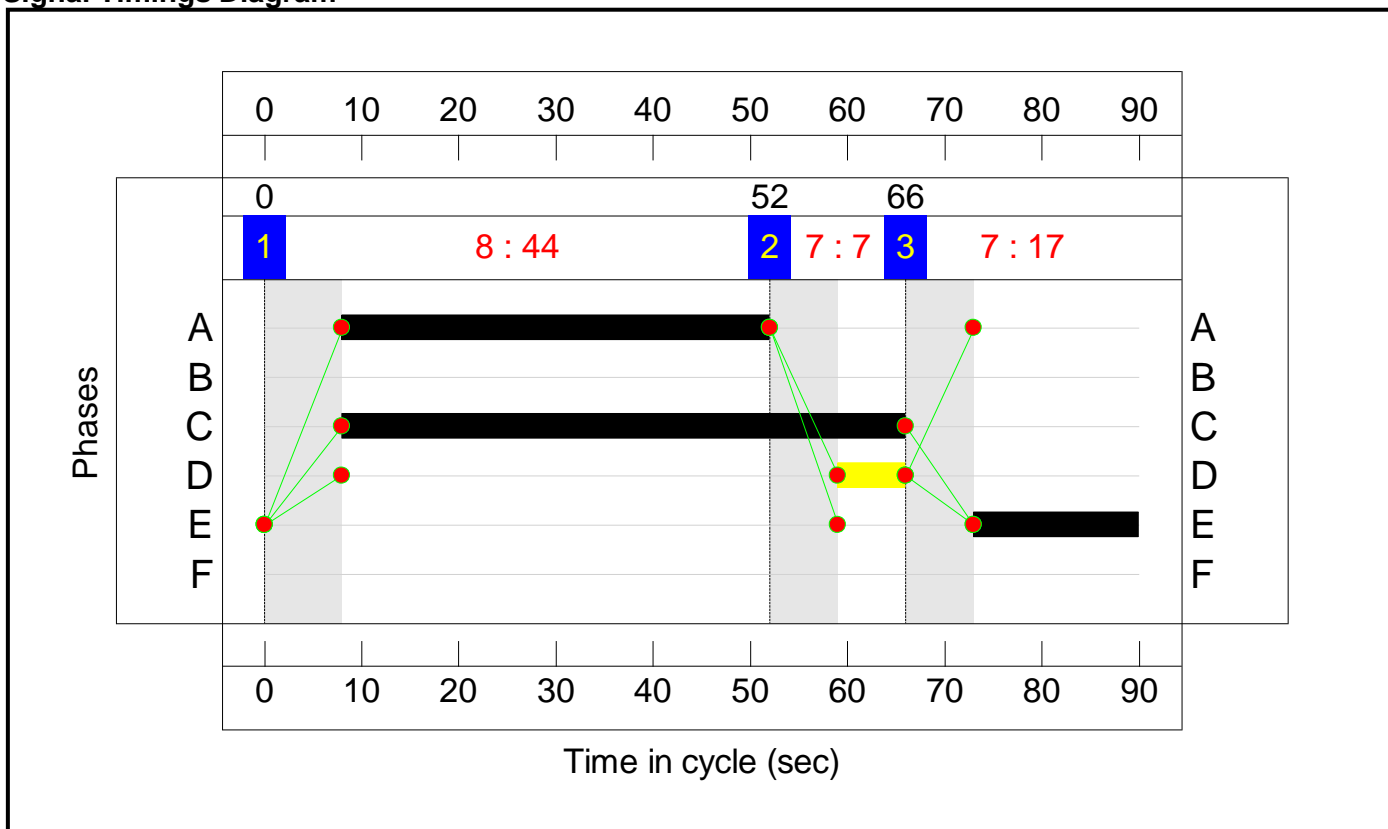
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	7	17
Change Point	0	52	66

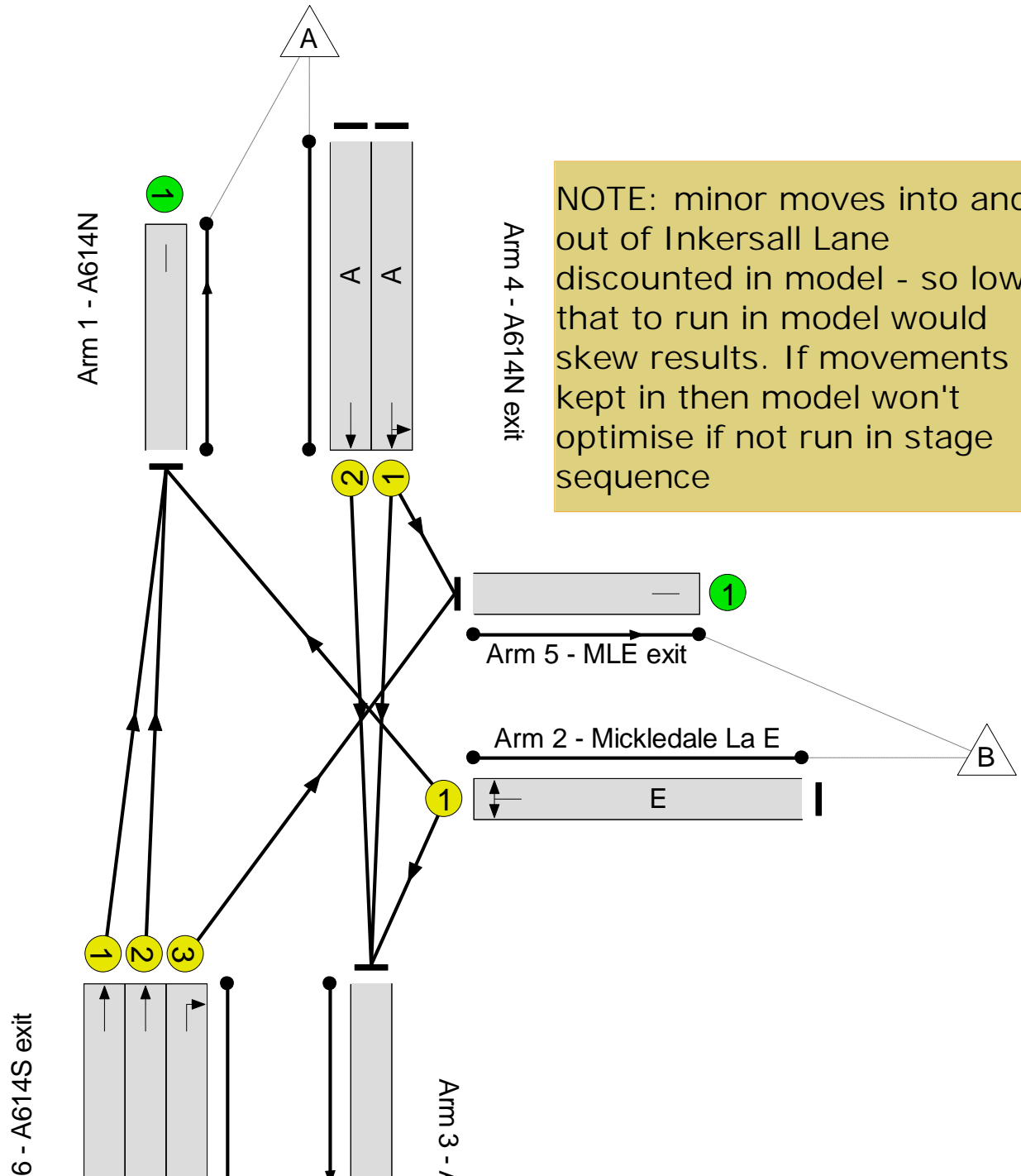

Signal Timings Diagram





Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 55.5 %  
Total Traffic Delay: 12.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>57.9%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>57.9%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	44	-	550	1900	950	57.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	44	-	549	1900	950	57.8%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	201	1800	360	55.8%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	481	1900	1246	38.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	480	1900	1246	38.5%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	72	1800	160	45.0%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	998	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	107	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1228	Inf	Inf	0.0%

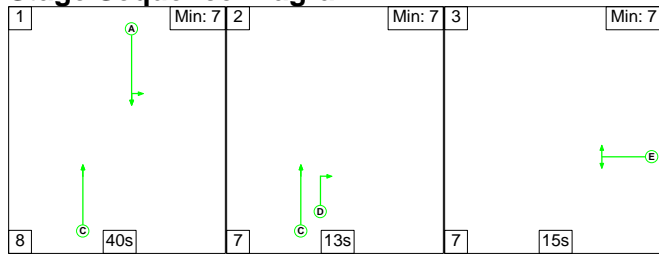
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	9.3	3.0	0.0	12.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	9.3	3.0	0.0	12.4	-	-	-	-
1/1	550	550	-	-	-	2.4	0.7	-	3.1	20.3	9.6	0.7	10.3
1/2	549	549	-	-	-	2.4	0.7	-	3.1	20.3	9.6	0.7	10.3
2/1	201	201	-	-	-	1.8	0.6	-	2.4	43.7	4.5	0.6	5.1
3/1	481	481	-	-	-	1.0	0.3	-	1.3	9.5	5.5	0.3	5.8
3/2	480	480	-	-	-	1.0	0.3	-	1.3	9.5	5.5	0.3	5.8
3/3	72	72	-	-	-	0.8	0.4	-	1.2	59.2	1.7	0.4	2.1
4/1	998	998	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	107	107	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1228	1228	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		55.5	Total Delay for Signalled Lanes (pcuHr):		12.36	Cycle Time (s): 90				
			PRC Over All Lanes (%):		55.5	Total Delay Over All Lanes(pcuHr):		12.36					

Full Input Data And Results

Scenario 22: '2023pmHG' (FG22: '2023pmHG', Plan 1: 'all stages')

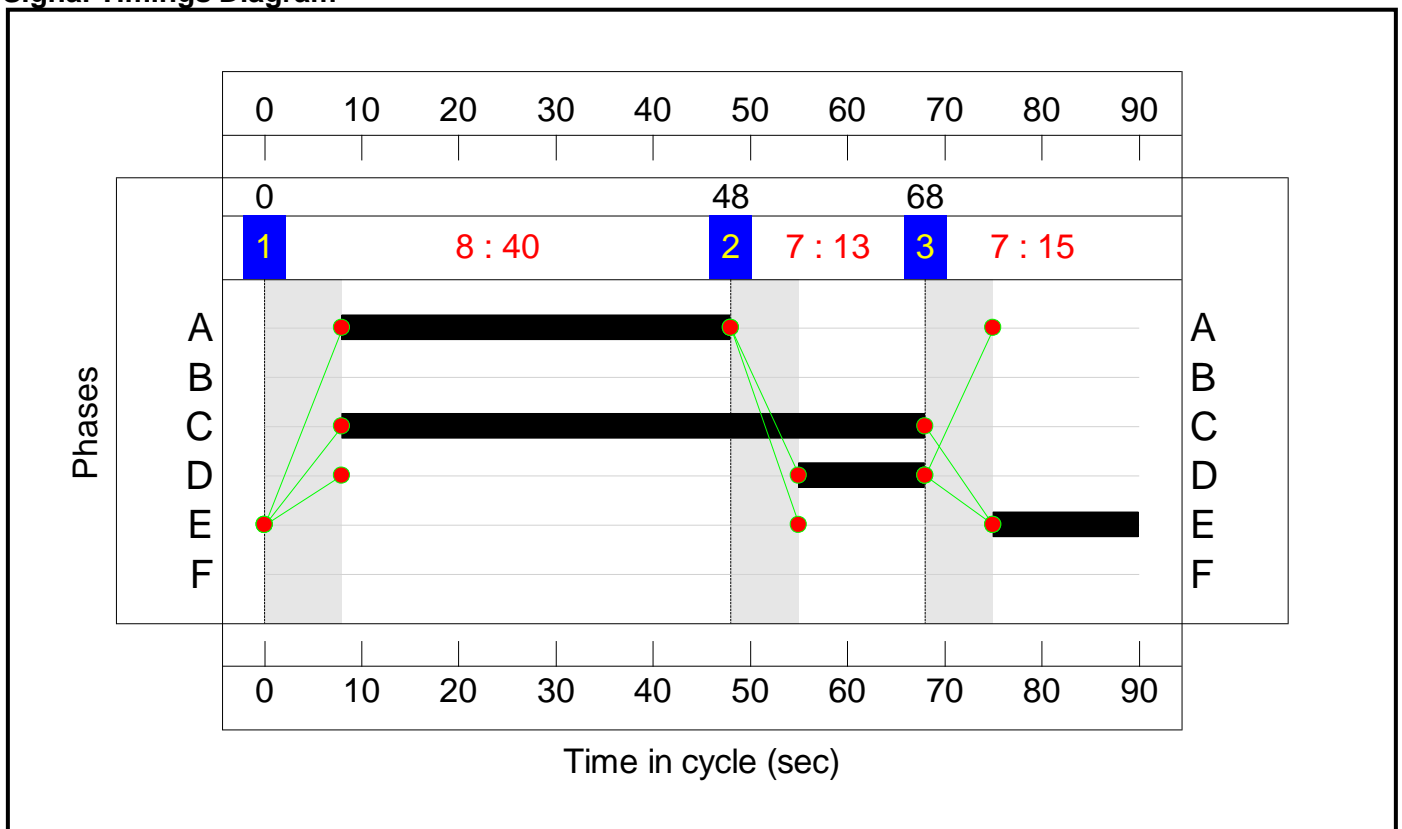
Stage Sequence Diagram



Stage Timings

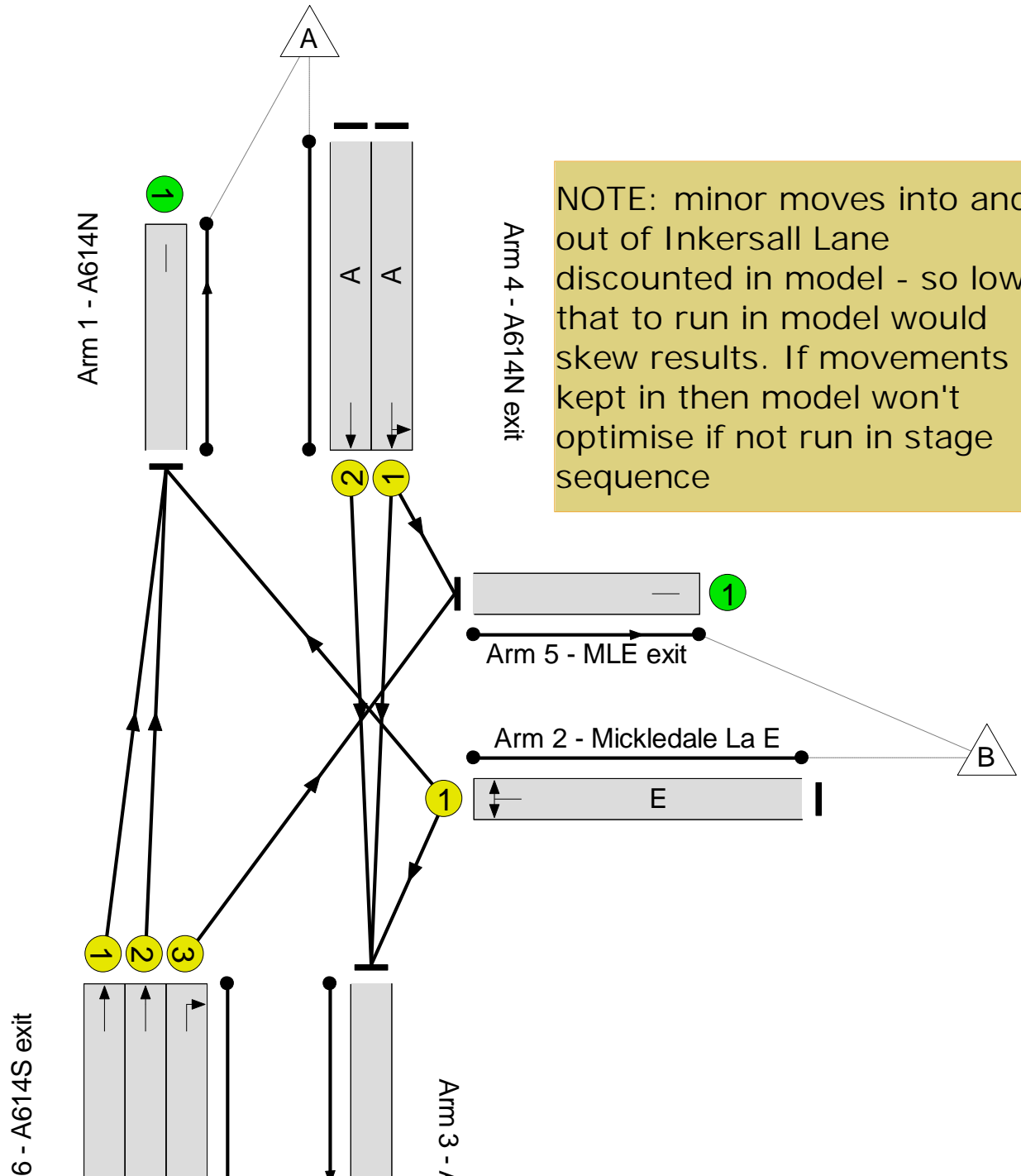

Stage	1	2	3
Duration	40	13	15
Change Point	0	48	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 54.0 %  
Total Traffic Delay: 13.5 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>58.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>58.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	506	1900	866	58.5%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	506	1900	866	58.5%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	179	1800	320	55.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	498	1900	1288	38.7%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	497	1900	1288	38.6%
3/3	A614S Right	U	N/A	N/A	D		1	13	-	162	1800	280	57.9%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1026	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	225	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1097	Inf	Inf	0.0%



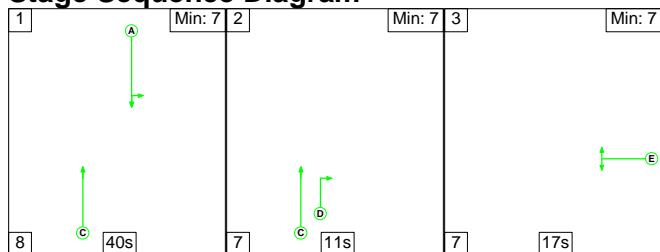
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	10.1	3.3	0.0	13.5	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	10.1	3.3	0.0	13.5	-	-	-	-
1/1	506	506	-	-	-	2.6	0.7	-	3.3	23.2	9.3	0.7	10.0
1/2	506	506	-	-	-	2.6	0.7	-	3.3	23.2	9.3	0.7	10.0
2/1	179	179	-	-	-	1.7	0.6	-	2.3	46.4	4.1	0.6	4.7
3/1	498	498	-	-	-	0.9	0.3	-	1.2	8.6	5.4	0.3	5.7
3/2	497	497	-	-	-	0.9	0.3	-	1.2	8.6	5.4	0.3	5.7
3/3	162	162	-	-	-	1.6	0.7	-	2.3	50.4	3.7	0.7	4.4
4/1	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	225	225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1097	1097	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		54.0	Total Delay for Signalled Lanes (pcuHr):		13.47	Cycle Time (s): 90				
			PRC Over All Lanes (%):		54.0	Total Delay Over All Lanes(pcuHr):		13.47					

Full Input Data And Results

Scenario 23: '2023ipHG' (FG23: '2023ipHG', Plan 1: 'all stages')

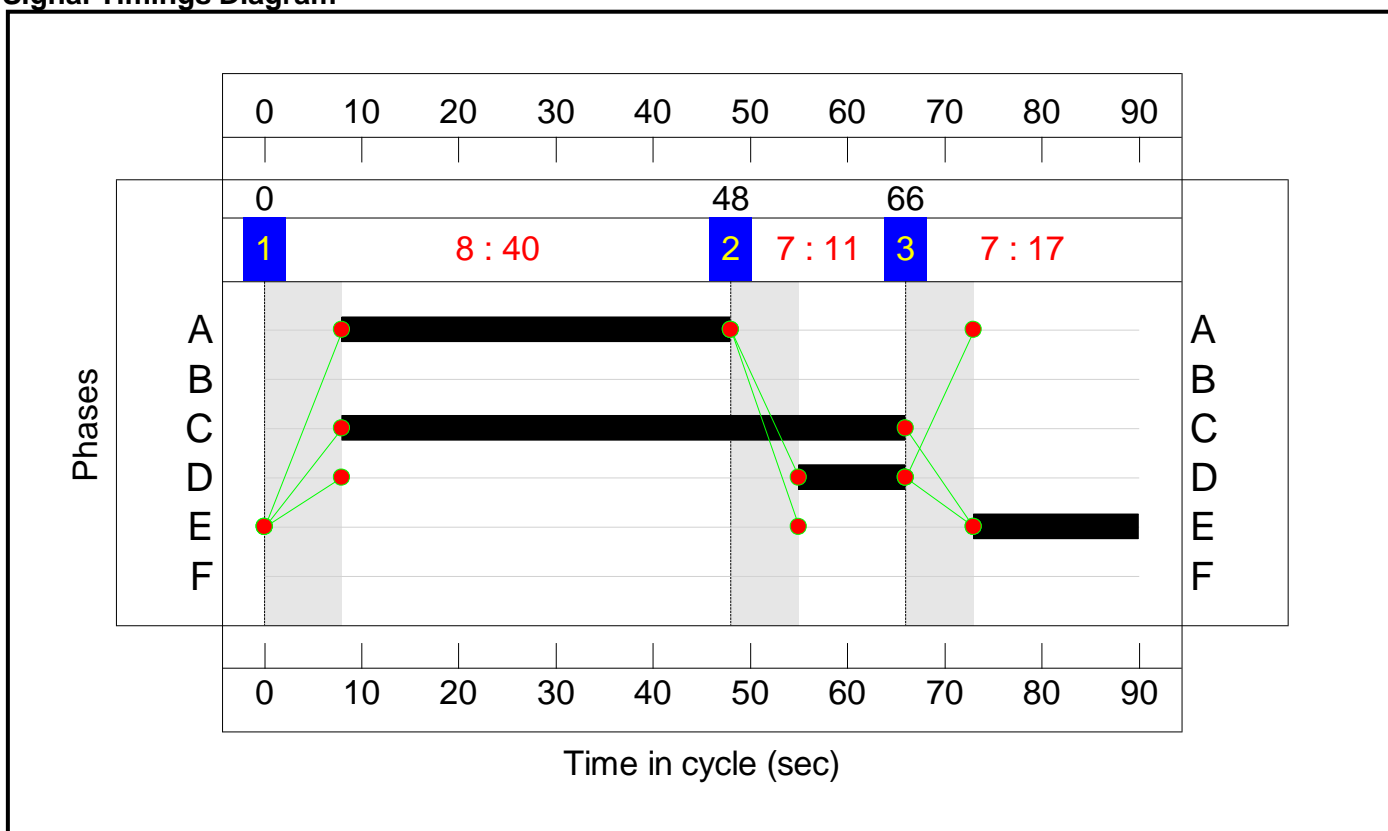
Stage Sequence Diagram



Stage Timings

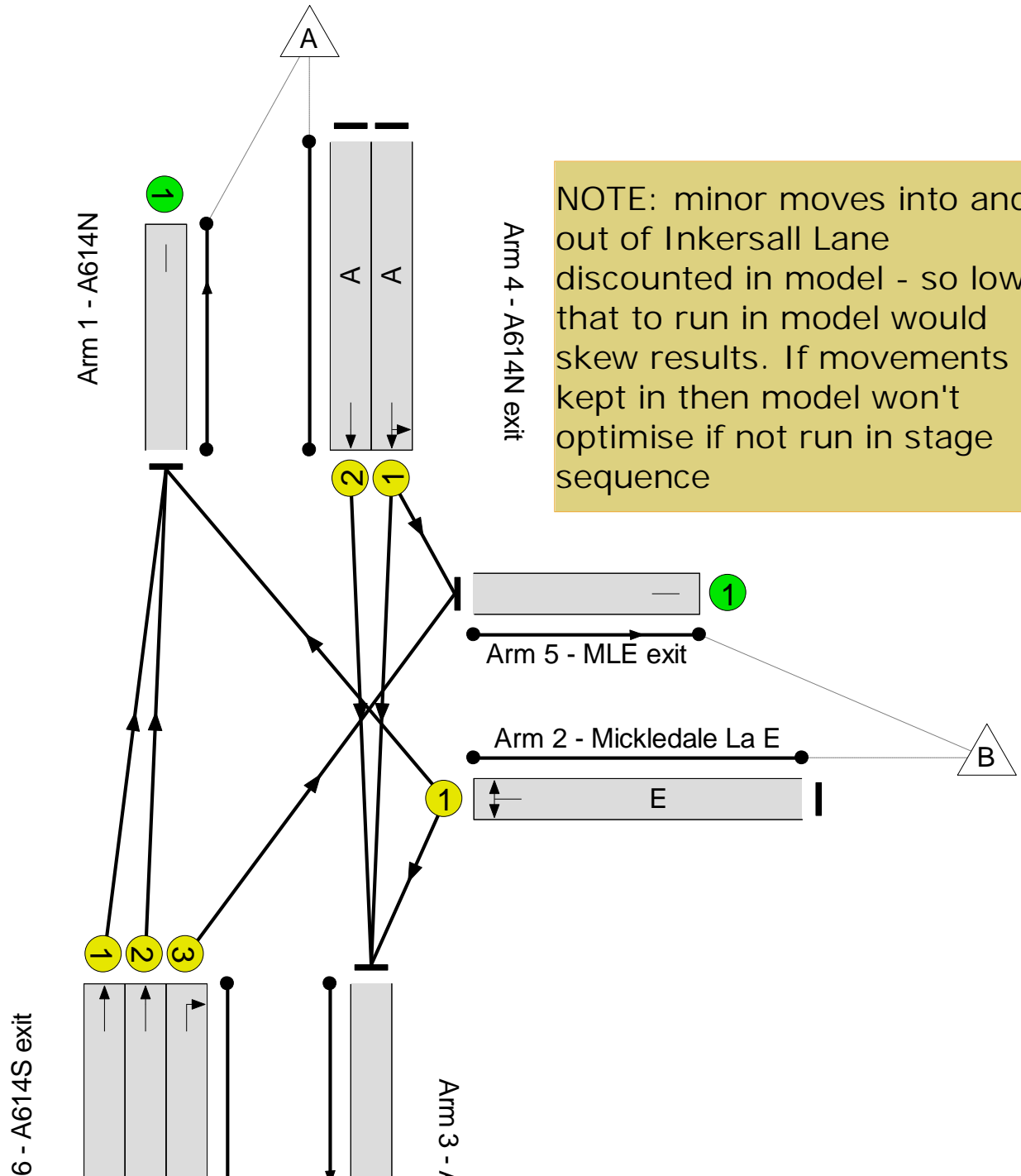

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 129.8 %  
Total Traffic Delay: 7.9 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>39.2%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>39.2%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	339	1900	866	39.2%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	338	1900	866	39.1%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	139	1800	360	38.6%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	323	1900	1246	25.9%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	322	1900	1246	25.9%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	88	1800	240	36.7%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	683	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	132	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	734	Inf	Inf	0.0%

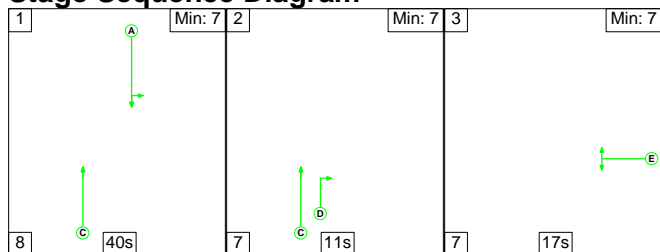
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	6.3	1.6	0.0	7.9	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	6.3	1.6	0.0	7.9	-	-	-	-
1/1	339	339	-	-	-	1.5	0.3	-	1.9	19.7	5.6	0.3	5.9
1/2	338	338	-	-	-	1.5	0.3	-	1.8	19.6	5.5	0.3	5.9
2/1	139	139	-	-	-	1.2	0.3	-	1.5	39.3	3.0	0.3	3.3
3/1	323	323	-	-	-	0.6	0.2	-	0.8	8.4	3.3	0.2	3.5
3/2	322	322	-	-	-	0.6	0.2	-	0.7	8.4	3.3	0.2	3.5
3/3	88	88	-	-	-	0.9	0.3	-	1.2	47.3	2.0	0.3	2.3
4/1	683	683	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	132	132	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	734	734	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		129.8	Total Delay for Signalled Lanes (pcuHr):		7.87	Cycle Time (s): 90				
			PRC Over All Lanes (%):		129.8	Total Delay Over All Lanes(pcuHr):		7.87					

Full Input Data And Results

Scenario 24: '2023opHG' (FG24: '2023opHG', Plan 1: 'all stages')

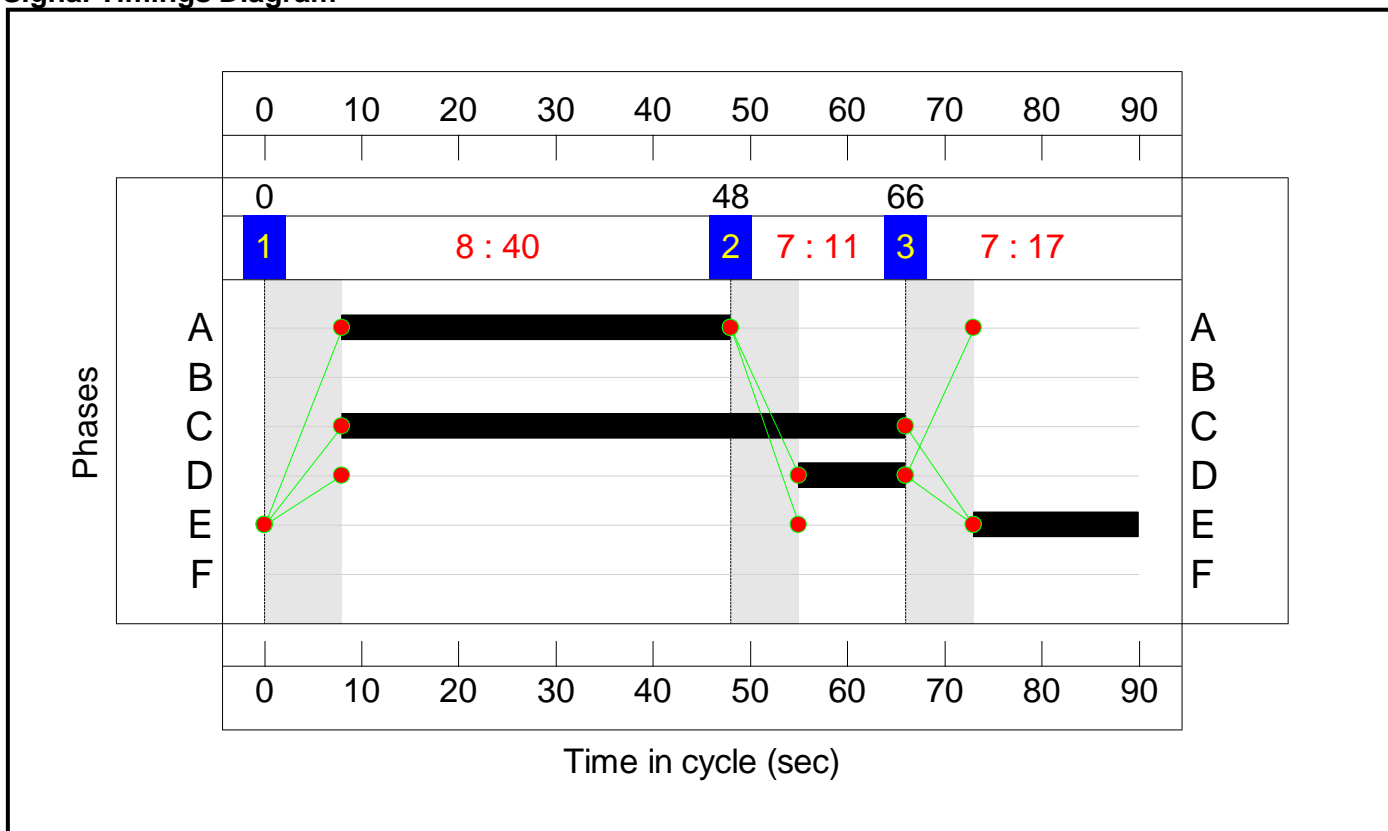
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	40	11	17
Change Point	0	48	66

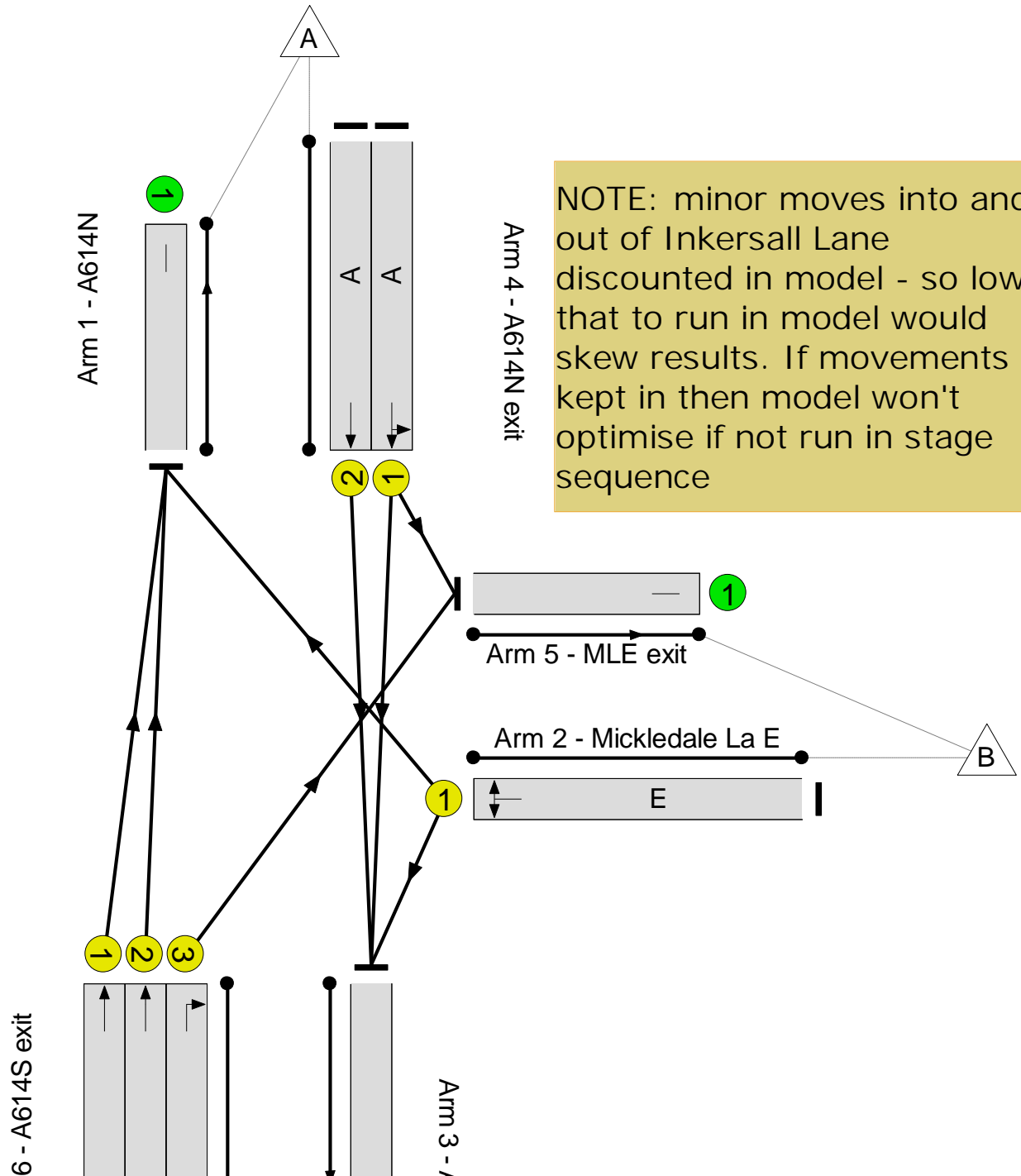

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



A614/ Mickledale Lane  
PRC: 2214.3 %  
Total Traffic Delay: 0.7 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.9%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>3.9%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	40	-	33	1900	866	3.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	40	-	33	1900	866	3.8%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	17	-	14	1800	360	3.9%
3/1	A614S Ahead	U	N/A	N/A	C		1	58	-	32	1900	1246	2.6%
3/2	A614S Ahead	U	N/A	N/A	C		1	58	-	31	1900	1246	2.5%
3/3	A614S Right	U	N/A	N/A	D		1	11	-	9	1800	240	3.8%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	13	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	72	Inf	Inf	0.0%

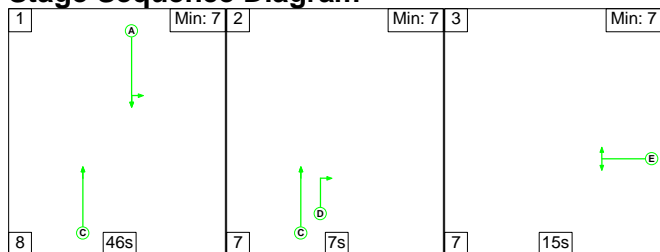
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	0.5	0.1	0.0	0.7	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	0.5	0.1	0.0	0.7	-	-	-	-
1/1	33	33	-	-	-	0.1	0.0	-	0.1	15.8	0.4	0.0	0.5
1/2	33	33	-	-	-	0.1	0.0	-	0.1	15.8	0.4	0.0	0.5
2/1	14	14	-	-	-	0.1	0.0	-	0.1	34.4	0.3	0.0	0.3
3/1	32	32	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/2	31	31	-	-	-	0.0	0.0	-	0.1	7.0	0.3	0.0	0.3
3/3	9	9	-	-	-	0.1	0.0	-	0.1	42.0	0.2	0.0	0.2
4/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	13	13	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 2214.3		2214.3		Total Delay for Signalled Lanes (pcuHr): 0.65		0.65		Cycle Time (s): 90		
			PRC Over All Lanes (%):		2214.3		Total Delay Over All Lanes(pcuHr):		0.65				

Full Input Data And Results

Scenario 25: '2037amHG' (FG25: '2037amHG', Plan 1: 'all stages')

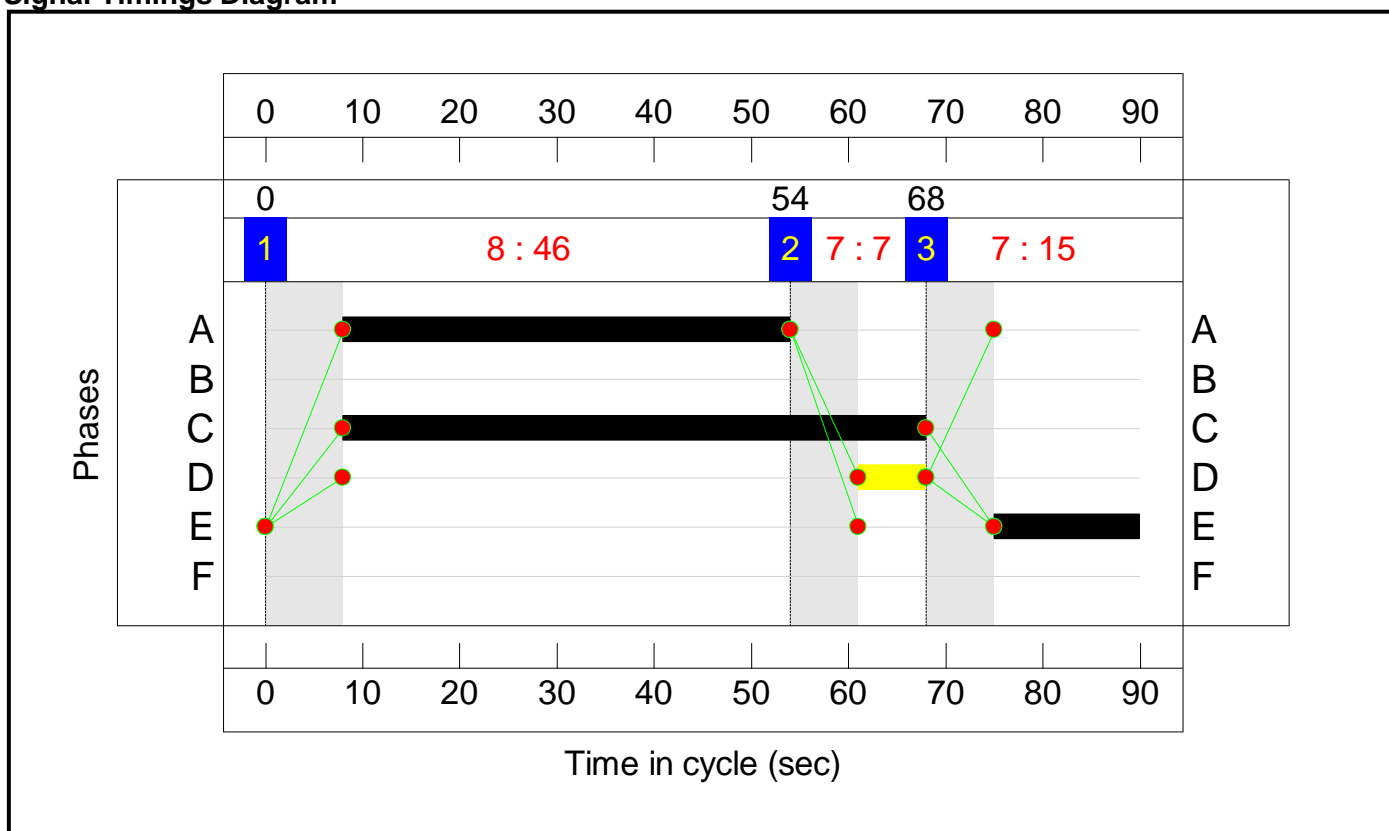
Stage Sequence Diagram



Stage Timings

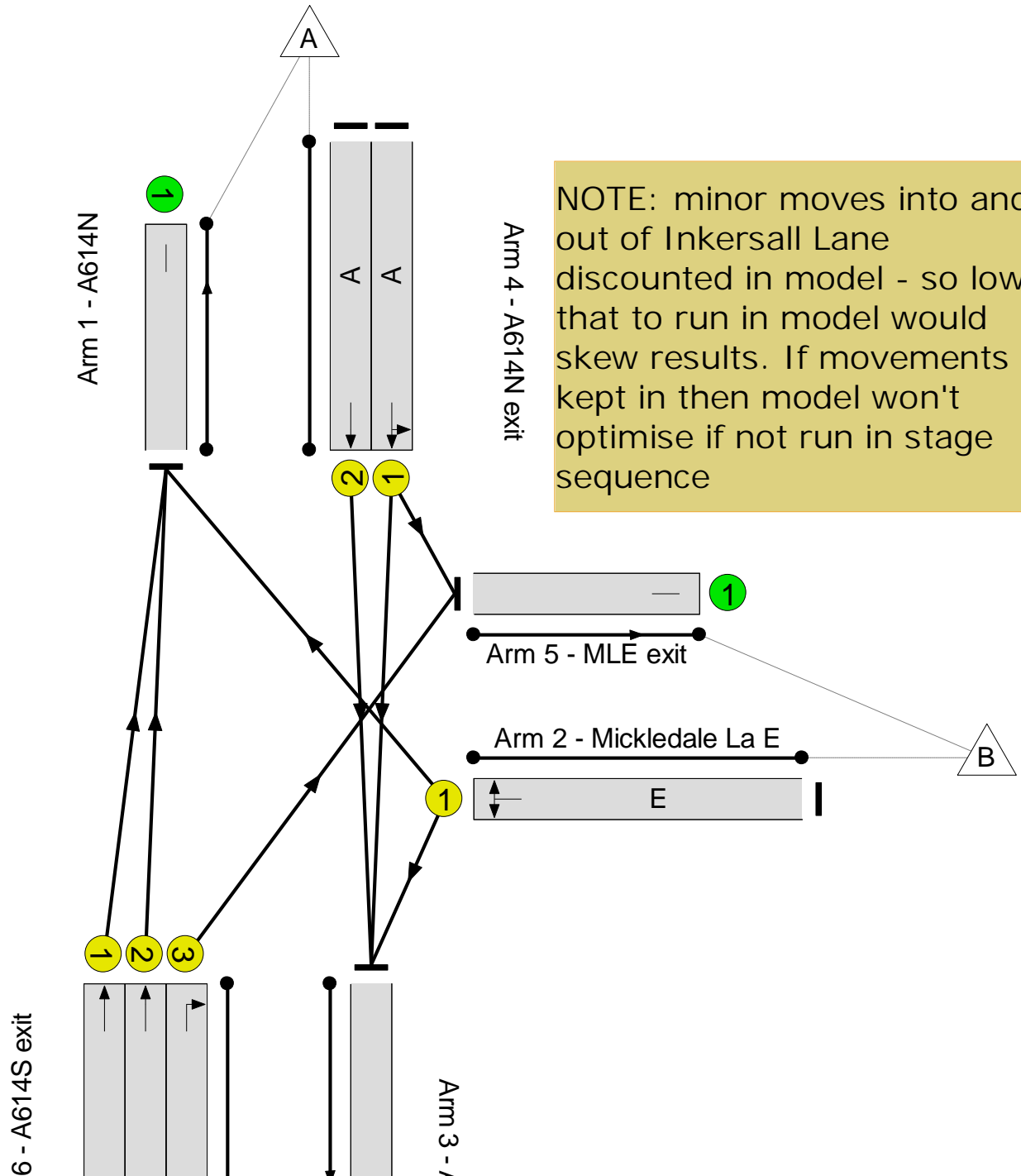

Stage	1	2	3
Duration	46	7	15
Change Point	0	54	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 31.5 %  
Total Traffic Delay: 15.4 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>68.4%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>68.4%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	46	-	672	1900	992	67.7%
1/2	A614N Ahead	U	N/A	N/A	A		1	46	-	671	1900	992	67.6%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	219	1800	320	68.4%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	572	1900	1288	44.4%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	571	1900	1288	44.3%
3/3	A614S Right	U	N/A	N/A	D		1	7	-	79	1800	160	49.4%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1186	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	121	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1477	Inf	Inf	0.0%

Full Input Data And Results

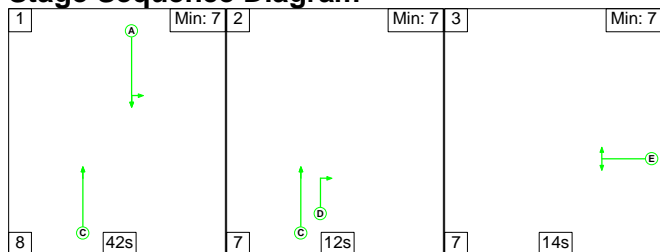
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	11.0	4.4	0.0	15.4	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	11.0	4.4	0.0	15.4	-	-	-	-
1/1	672	672	-	-	-	3.0	1.0	-	4.0	21.5	12.3	1.0	13.4
1/2	671	671	-	-	-	3.0	1.0	-	4.0	21.5	12.3	1.0	13.3
2/1	219	219	-	-	-	2.1	1.1	-	3.2	52.1	5.1	1.1	6.2
3/1	572	572	-	-	-	1.1	0.4	-	1.5	9.2	6.5	0.4	6.9
3/2	571	571	-	-	-	1.1	0.4	-	1.5	9.2	6.5	0.4	6.9
3/3	79	79	-	-	-	0.9	0.5	-	1.3	61.1	1.9	0.5	2.3
4/1	1186	1186	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	121	121	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1477	1477	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		31.5	Total Delay for Signalled Lanes (pcuHr):		15.44	Cycle Time (s): 90				
			PRC Over All Lanes (%):		31.5	Total Delay Over All Lanes(pcuHr):		15.44					



Full Input Data And Results

Scenario 26: '2037pmHG' (FG26: '2037pmHG', Plan 1: 'all stages')

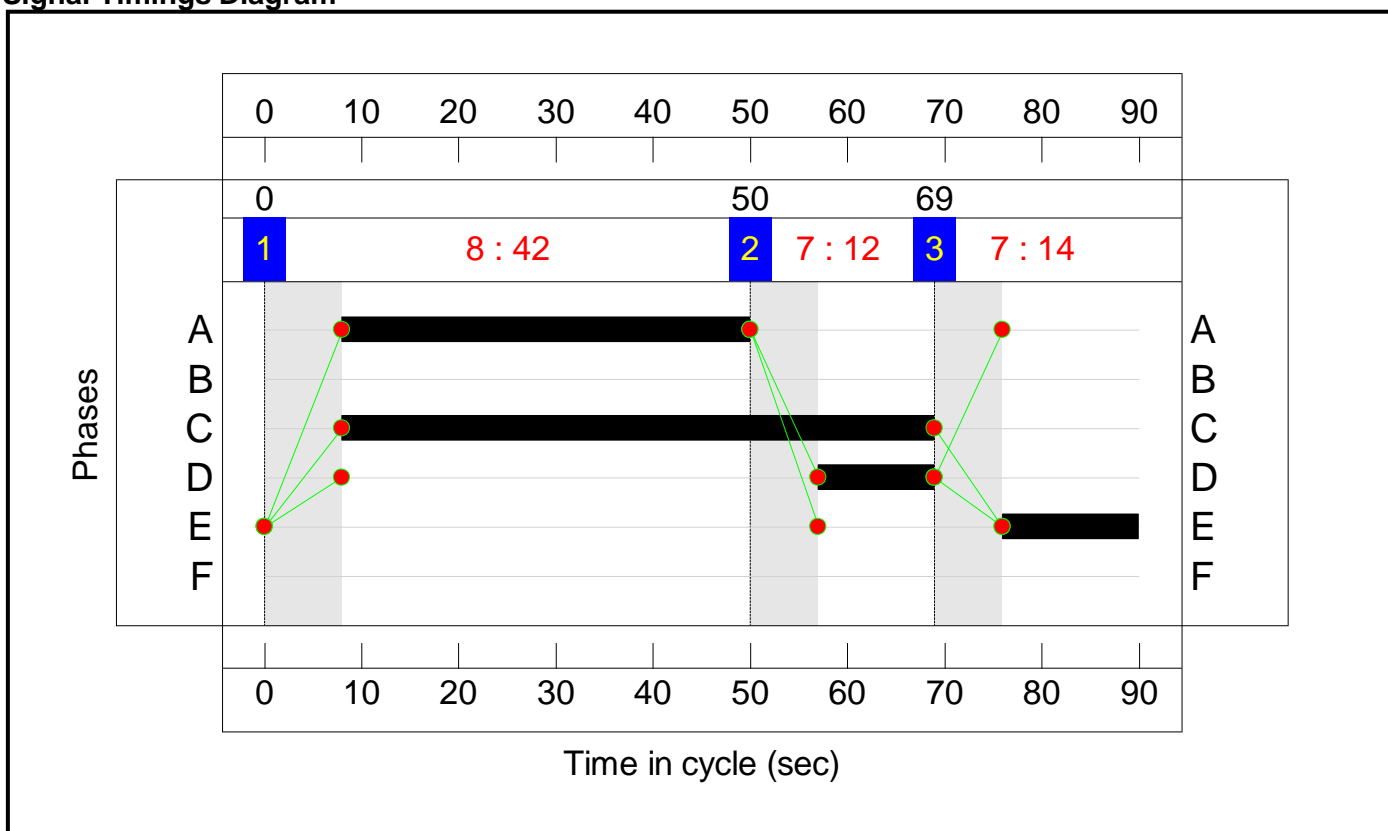
Stage Sequence Diagram



Stage Timings

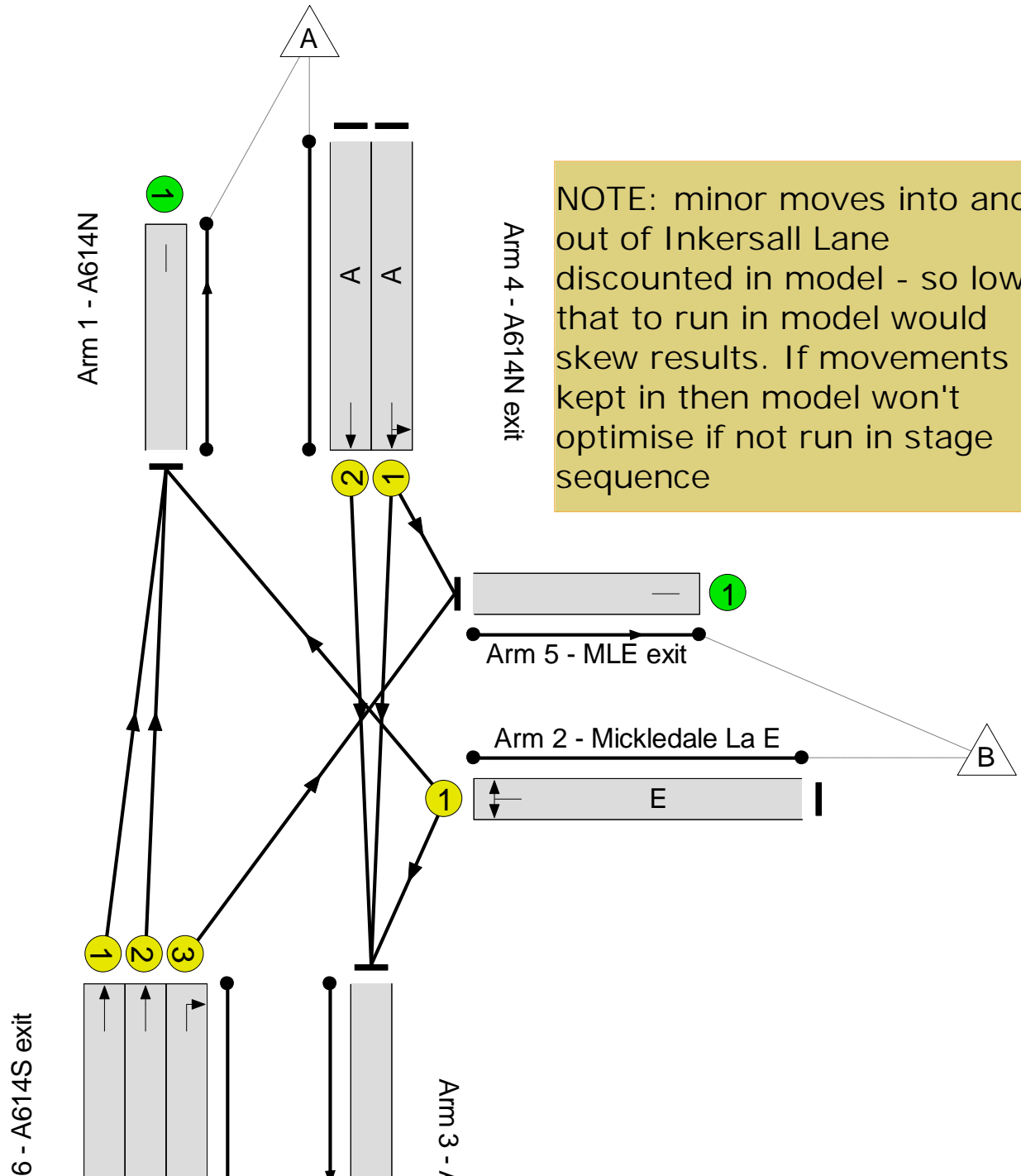

Stage	1	2	3
Duration	42	12	14
Change Point	0	50	69

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 31.5 %  
Total Traffic Delay: 17.2 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>68.5%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>68.5%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	42	-	616	1900	908	67.9%
1/2	A614N Ahead	U	N/A	N/A	A		1	42	-	615	1900	908	67.7%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	14	-	200	1800	300	66.7%
3/1	A614S Ahead	U	N/A	N/A	C		1	61	-	618	1900	1309	47.2%
3/2	A614S Ahead	U	N/A	N/A	C		1	61	-	617	1900	1309	47.1%
3/3	A614S Right	U	N/A	N/A	D		1	12	-	178	1800	260	68.5%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	1272	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	251	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	1321	Inf	Inf	0.0%

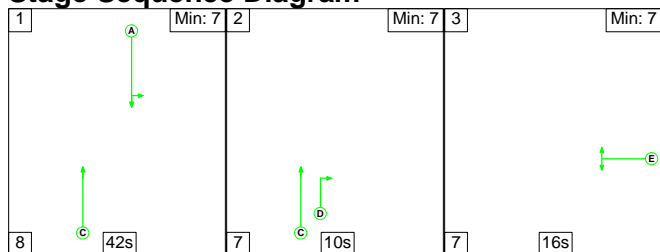
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	12.2	5.0	0.0	17.2	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	12.2	5.0	0.0	17.2	-	-	-	-
1/1	616	616	-	-	-	3.1	1.0	-	4.2	24.3	11.8	1.0	12.9
1/2	615	615	-	-	-	3.1	1.0	-	4.1	24.3	11.8	1.0	12.8
2/1	200	200	-	-	-	2.0	1.0	-	2.9	52.8	4.7	1.0	5.6
3/1	618	618	-	-	-	1.1	0.4	-	1.6	9.1	7.0	0.4	7.5
3/2	617	617	-	-	-	1.1	0.4	-	1.6	9.1	7.0	0.4	7.5
3/3	178	178	-	-	-	1.8	1.1	-	2.9	58.0	4.2	1.1	5.3
4/1	1272	1272	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	251	251	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1321	1321	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		31.5	Total Delay for Signalled Lanes (pcuHr):		17.21	Cycle Time (s): 90				
			PRC Over All Lanes (%):		31.5	Total Delay Over All Lanes(pcuHr):		17.21					

Full Input Data And Results

Scenario 27: '2037ipHG' (FG27: '2037ipHG', Plan 1: 'all stages')

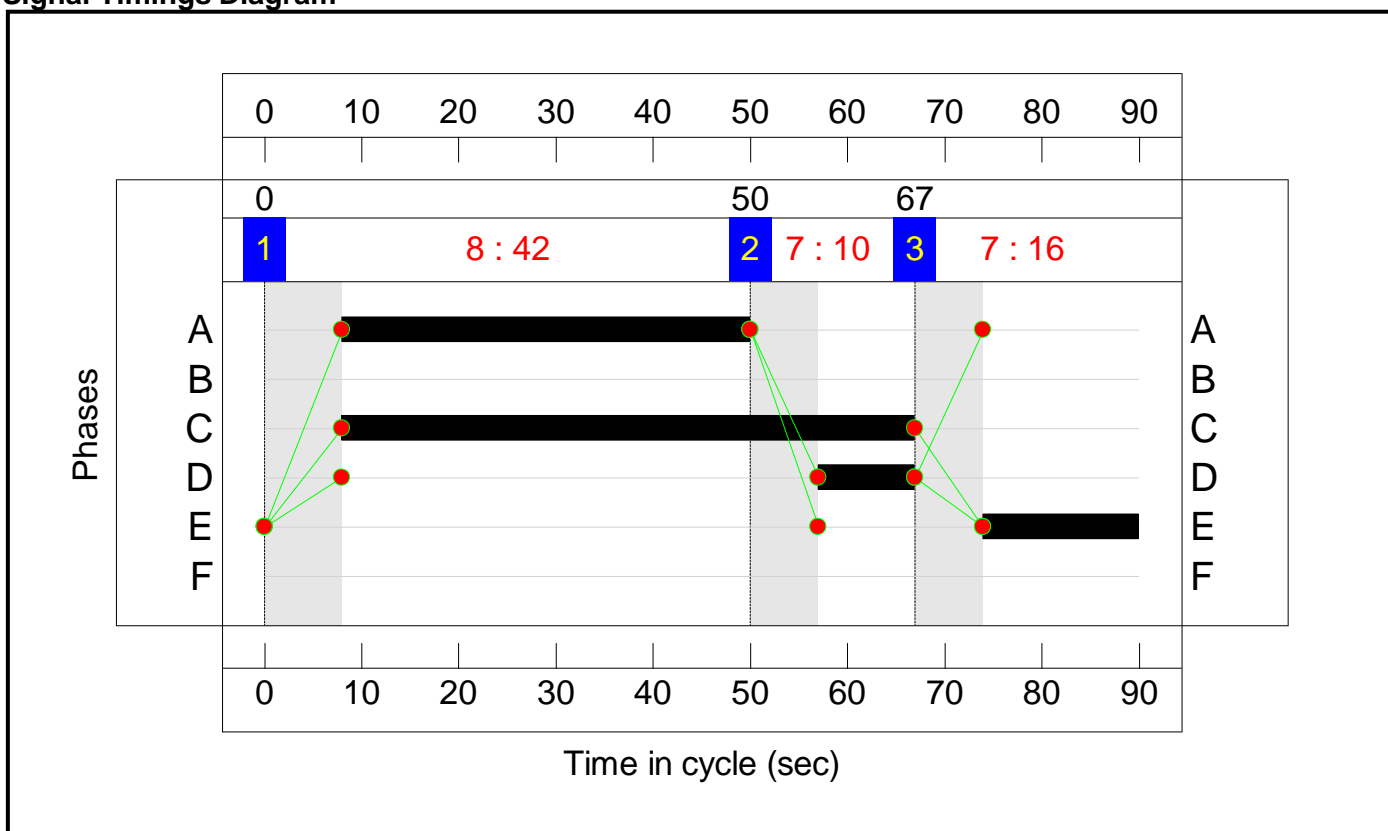
Stage Sequence Diagram



Stage Timings

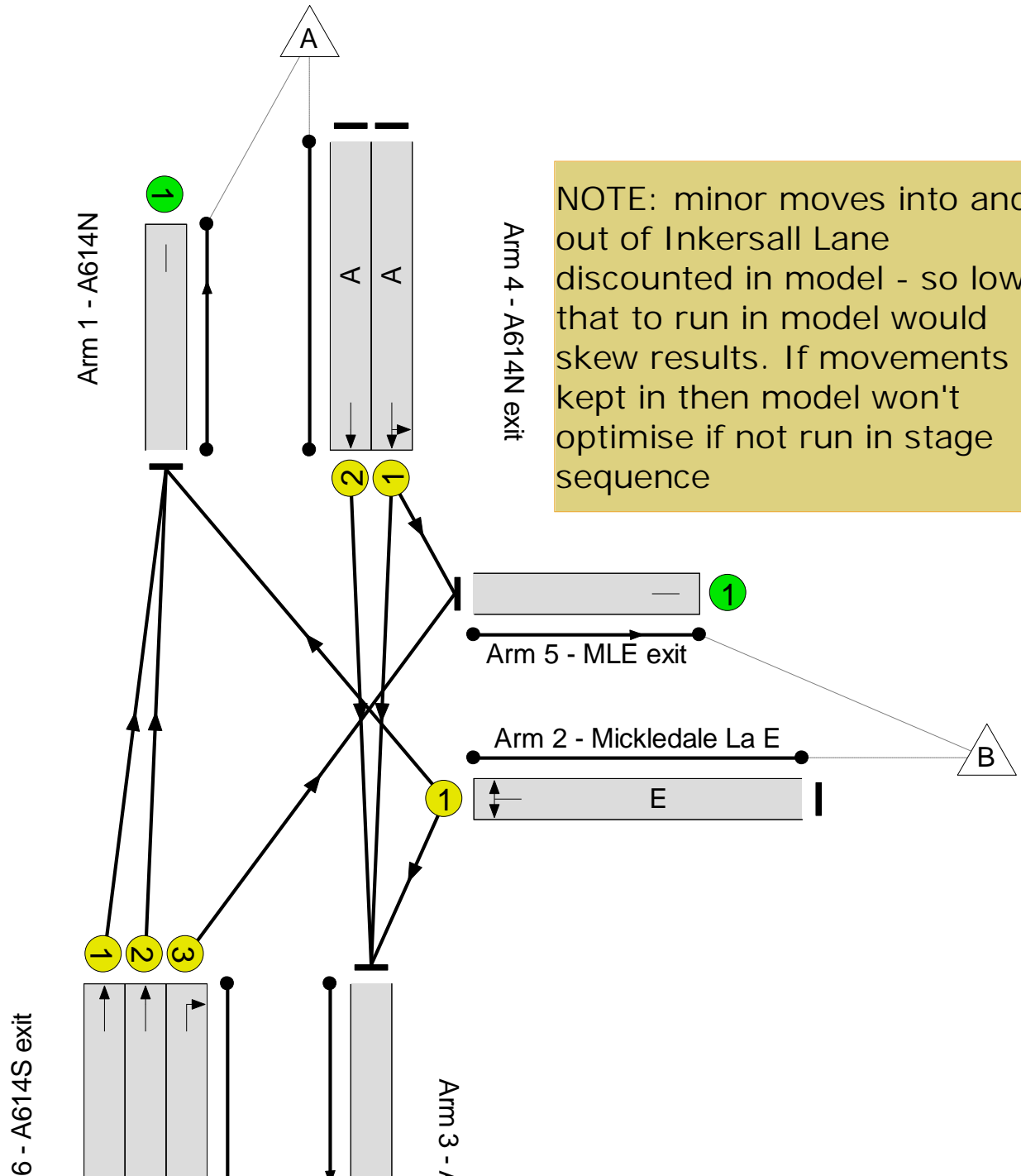

Stage	1	2	3
Duration	42	10	16
Change Point	0	50	67

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 100.0 %  
Total Traffic Delay: 9.3 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>45.0%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>45.0%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	42	-	407	1900	908	44.8%
1/2	A614N Ahead	U	N/A	N/A	A		1	42	-	407	1900	908	44.8%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	16	-	153	1800	340	45.0%
3/1	A614S Ahead	U	N/A	N/A	C		1	59	-	386	1900	1267	30.5%
3/2	A614S Ahead	U	N/A	N/A	C		1	59	-	385	1900	1267	30.4%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	95	1800	220	43.2%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	815	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	146	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	872	Inf	Inf	0.0%

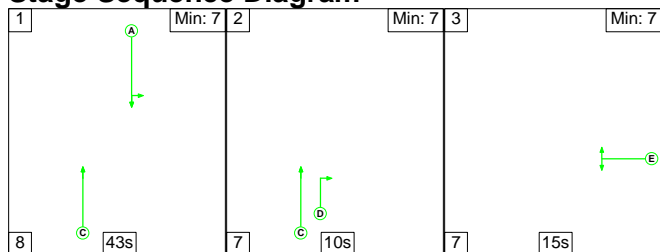
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	0	0	0	7.2	2.0	0.0	9.3	-	-	-	-
<b>A614/ Mickledale Lane</b>	-	-	0	0	0	7.2	2.0	0.0	9.3	-	-	-	-
1/1	407	407	-	-	-	1.8	0.4	-	2.2	19.2	6.7	0.4	7.1
1/2	407	407	-	-	-	1.8	0.4	-	2.2	19.2	6.7	0.4	7.1
2/1	153	153	-	-	-	1.4	0.4	-	1.8	42.0	3.4	0.4	3.8
3/1	386	386	-	-	-	0.7	0.2	-	0.9	8.3	4.0	0.2	4.2
3/2	385	385	-	-	-	0.7	0.2	-	0.9	8.3	4.0	0.2	4.2
3/3	95	95	-	-	-	1.0	0.4	-	1.3	50.9	2.2	0.4	2.6
4/1	815	815	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	146	146	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	872	872	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%):		100.0	Total Delay for Signalled Lanes (pcuHr):		9.25	Cycle Time (s):		90		
			PRC Over All Lanes (%):		100.0	Total Delay Over All Lanes(pcuHr):		9.25					

Full Input Data And Results

Scenario 28: '2037opHG' (FG28: '2037opHG', Plan 1: 'all stages')

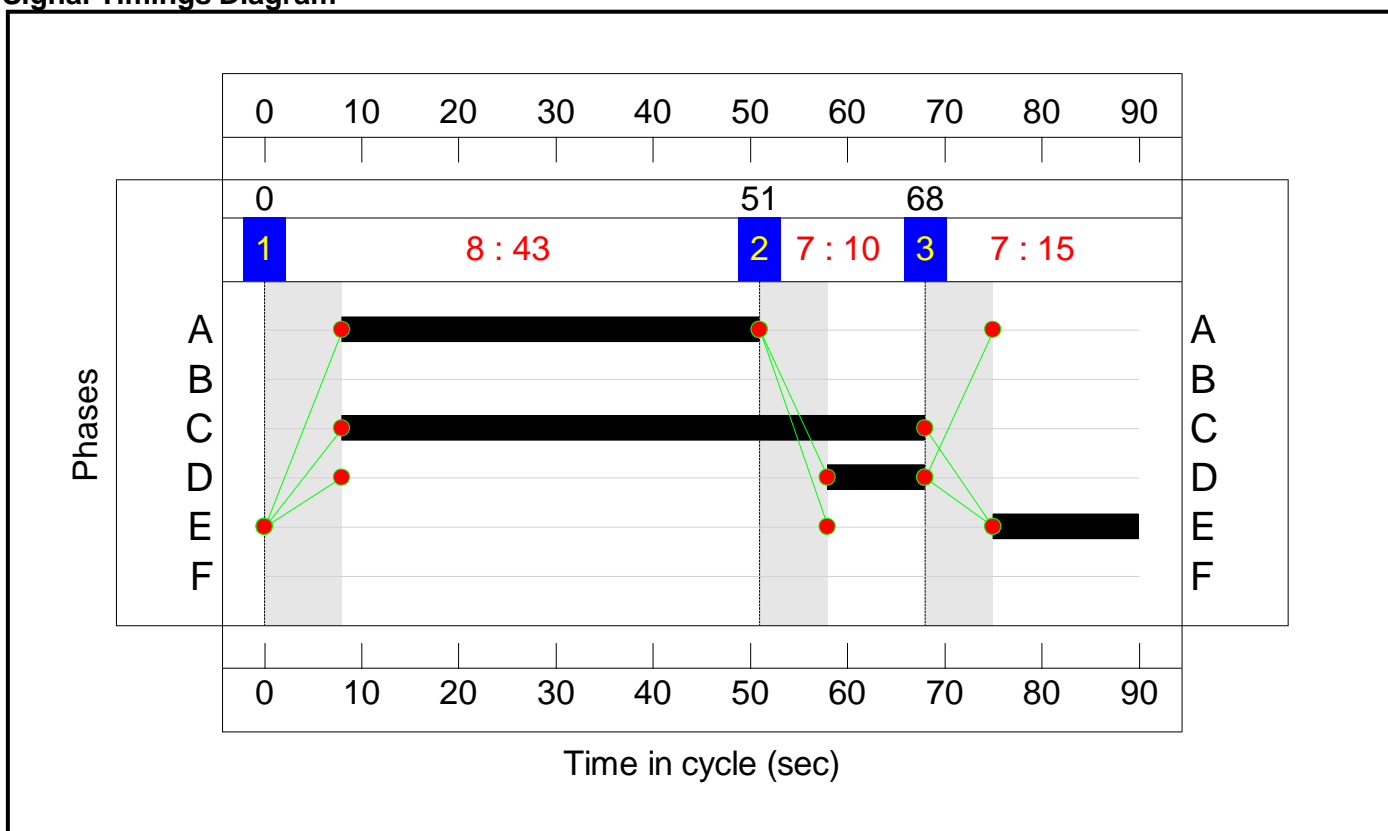
Stage Sequence Diagram



Stage Timings

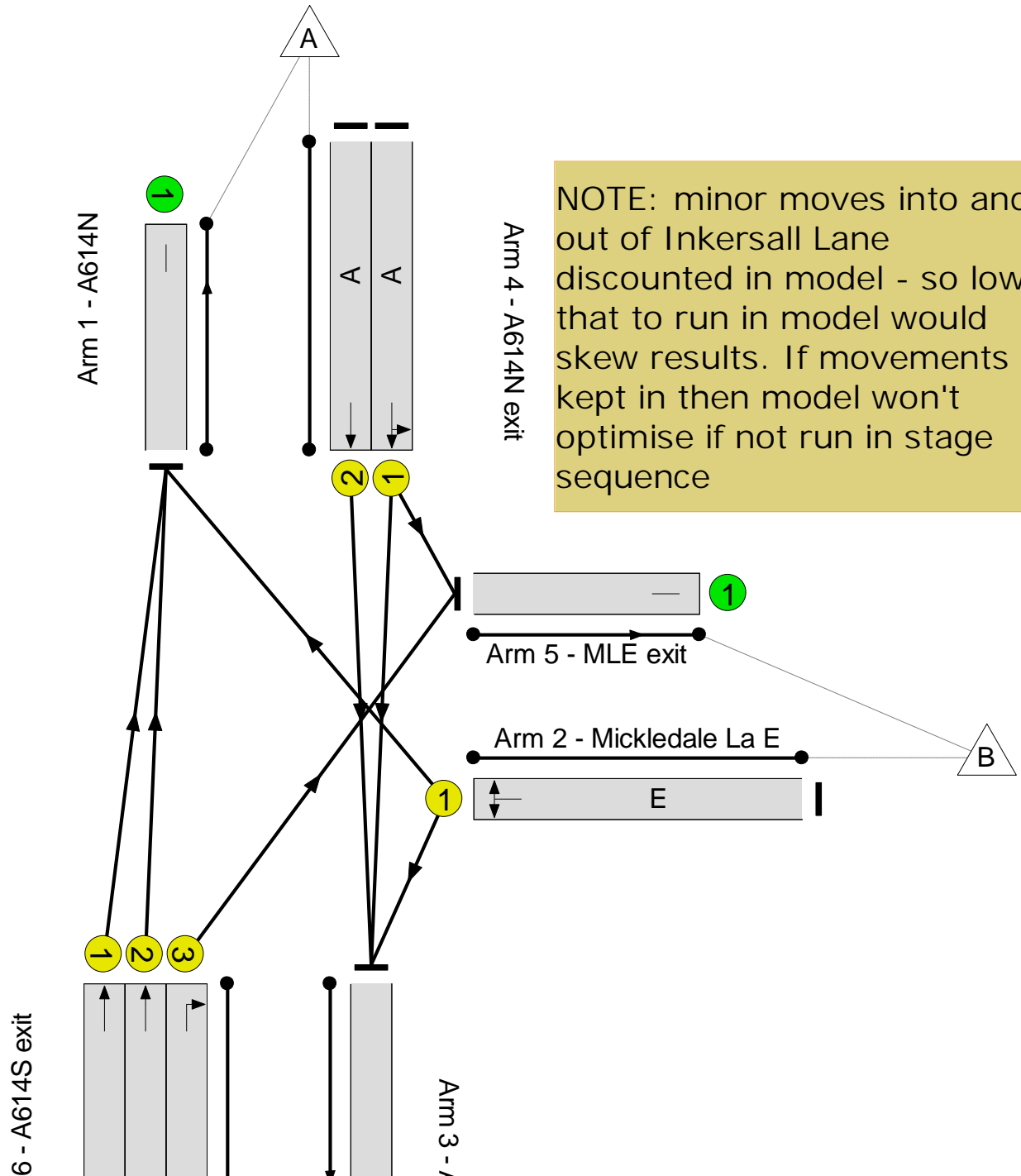

Stage	1	2	3
Duration	43	10	15
Change Point	0	51	68

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

A614/ Mickledale Lane  
PRC: 1957.1 %  
Total Traffic Delay: 0.7 pcuHr



NOTE: minor moves into and out of Inkersall Lane discounted in model - so low that to run in model would skew results. If movements kept in then model won't optimise if not run in stage sequence

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: A614/ Mickledale Lane - no minor moves</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>4.4%</b>
<b>A614/ Mickledale Lane</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>4.4%</b>
1/1	A614N Left Ahead	U	N/A	N/A	A		1	43	-	40	1900	929	4.3%
1/2	A614N Ahead	U	N/A	N/A	A		1	43	-	40	1900	929	4.3%
2/1	Mickledale La E Right Left	U	N/A	N/A	E		1	15	-	14	1800	320	4.4%
3/1	A614S Ahead	U	N/A	N/A	C		1	60	-	38	1900	1288	3.0%
3/2	A614S Ahead	U	N/A	N/A	C		1	60	-	37	1900	1288	2.9%
3/3	A614S Right	U	N/A	N/A	D		1	10	-	9	1800	220	4.1%
4/1	A614N exit	U	N/A	N/A	-		-	-	-	79	Inf	Inf	0.0%
5/1	MLE exit	U	N/A	N/A	-		-	-	-	14	Inf	Inf	0.0%
6/1	A614S exit	U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A614/ Mickledale Lane - no minor moves	-	-	0	0	0	0.6	0.1	0.0	0.7	-	-	-	-
A614/ Mickledale Lane	-	-	0	0	0	0.6	0.1	0.0	0.7	-	-	-	-
1/1	40	40	-	-	-	0.1	0.0	-	0.2	14.0	0.5	0.0	0.5
1/2	40	40	-	-	-	0.1	0.0	-	0.2	14.0	0.5	0.0	0.5
2/1	14	14	-	-	-	0.1	0.0	-	0.1	36.7	0.3	0.0	0.3
3/1	38	38	-	-	-	0.1	0.0	-	0.1	6.3	0.3	0.0	0.3
3/2	37	37	-	-	-	0.0	0.0	-	0.1	6.3	0.3	0.0	0.3
3/3	9	9	-	-	-	0.1	0.0	-	0.1	43.6	0.2	0.0	0.2
4/1	79	79	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	14	14	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 - A614/ Mickledale Lane			PRC for Signalled Lanes (%): 1957.1		PRC Over All Lanes (%): 1957.1		Total Delay for Signalled Lanes (pcuHr): 0.69		Total Delay Over All Lanes(pcuHr): 0.69		Cycle Time (s): 90		

# Appendix V – Lowdham Scheme Drawing and ARCADY Outputs










**NOTES**

1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
2. Do not scale from this drawing.
3. All measurements are given in metres unless otherwise stated.

**KEY**

-  Proposed carriageway
-  Proposed footway
-  Proposed grass verge
-  Proposed access road
-  New boundary fence and gate to property 15



Rev.	Description	Drawn	Ch'kd	Auth	Date
Project: A614/A6097 CORRIDOR IMPROVEMENTS LOWDHAM ROUNDABOUT					
Status: FOR INFOR		Project No: HW20949			
Drawing Title: ELLIPSE ROUNDABOUT WITH LEFT LANE FILTER ON A612					
Scale: 1:500 @A1	Drawn: JD	Date: MAR 20			
Drawing No: 20949/GEN/L006/SK/009	Rev: P02				

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Nottinghamshire, NG22 8ST



# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.1.7462  
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**The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution**

**Filename:** Junction 6 (Lowdham Rbt Existing) incl LG\_V4.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\6-Lowdham

**Report generation date:** 04/12/2020 10:22:48

- » Existing Layout - 2023, AM
- » Existing Layout - 2023, PM
- » Existing Layout - 2023, IP
- » Existing Layout - 2023, OP
- » Existing Layout - 2037, AM
- » Existing Layout - 2037, PM
- » Existing Layout - 2037, IP
- » Existing Layout - 2037, OP
- » Existing Layout - 2037 final, AM
- » Existing Layout - 2037 final, PM
- » Existing Layout - 2037 final, IP
- » Existing Layout - 2037 final, OP
- » Existing Layout - 2023LG, AM
- » Existing Layout - 2023LG, PM
- » Existing Layout - 2023LG, IP
- » Existing Layout - 2023LG, OP
- » Existing Layout - 2037LG, AM
- » Existing Layout - 2037LG, PM
- » Existing Layout - 2037LG, IP
- » Existing Layout - 2037LG, OP
- » Existing Layout - 2023HG, AM
- » Existing Layout - 2023HG, PM
- » Existing Layout - 2023HG, IP
- » Existing Layout - 2023HG, OP
- » Existing Layout - 2037HG, AM
- » Existing Layout - 2037HG, PM
- » Existing Layout - 2037HG, IP
- » Existing Layout - 2037HG, OP

### Summary of junction performance

	AM						PM						IP						OP														
	Set ID	Queue	Delay	RF	LOS	Junction	Set ID	Queue	Delay	RF	LOS	Junction	Network	Set ID	Queue	Delay	RF	LOS	Junction	Set ID	Queue	Delay	RF	LOS	Junction	Network							

	Level (PCU)	Speed (s)	Delay (s)	LOS	Residual Capacity	Level (PCU)	Speed (s)	Delay (s)	LOS	Residual Capacity	Level (PCU)	Speed (s)	Delay (s)	LOS	Residual Capacity	
<b>Existing Layout - 2023</b>																
2 - Southwell Road	6.6	5.0	6.3	F	-4%	1.7	1.0	2.3	B	0.8	7.0	0.5	4.5	A	33%	
3 - A6097	8.2	2.0	3.5	C	[2 - Southwell Road]	1.5	3.0	6.5	E	-18%	1.2	4.0	6.5	A	[4 - Nottingham Road]	
4 - Nottingham Road	4.9	2.0	4.0	C	24.6	1.1	4.0	7.5	F	12.1	1.4	7.0	6.9	A	5.53	
1 - Epperstone Bypass	6.2	1.0	6.0	C		1.7	5.0	8.5	A		0.8	3.0	7.4	A		
<b>Existing Layout - 2037</b>																
2 - Southwell Road	1.3	1.0	3.9	F	-8%	1.8	1.0	3.6	B	0.9	8.0	1.1	7.7	A	28%	
3 - A6097	1.3	3.0	3.0	E	[2 - Southwell Road]	2.7	5.0	9.2	F	-20%	1.4	5.0	0.1	8.5	A	[4 - Nottingham Road]
4 - Nottingham Road	8.2	3.0	8.6	E	40.2	1.3	5.0	3.4	F	15.3	1.6	8.0	5.6	A	5.99	
1 - Epperstone Bypass	9.5	2.0	4.0	C		1.8	6.0	1.4	A		0.9	3.0	9.4	A		
<b>Existing Layout - 2037 final</b>																
2 - Southwell Road	3.5	2.0	5.0	F	-13%	2.6	1.0	8.0	C	1.0	9.0	1.1	6.1	A	21%	
3 - A6097	2.2	5.0	2.8	F	[2 - Southwell Road]	6.9	1.0	7.8	F	-25%	1.5	5.0	4.6	A	[4 - Nottingham Road]	
4 - Nottingham Road	1.9	7.0	9.0	F	77.6	2.2	4.0	9.2	F	29.7	2.0	0.0	0.7	B	6.75	
1 - Epperstone Bypass	1.9	4.0	6.6	E		2.2	6.0	8.9	A		1.0	4.0	2.4	A		
<b>Existing Layout - 2023LG</b>																

2 - Southwell Road	D 13	3.333	2.978	0.78	D	15.46	C	1%	[2 - Southwell Road]	D 14	1.306	1.064	0.58	B	67.50	F	-13%	[4 - Nottingham Road]	D 15	0.766	6.861	0.41	A	5.04	A	41%	[4 - Nottingham Road]	D 16	0.079	2.703	0.03	A	2.11	A	90%
3 - A6097		5.011	4.984	0.84	B						7.608	1.089	0.89	C						1.129	4.052	0.52	A					0.090	1.004	0.04	A				
4 - Nottingham Road		3.207	6.377	0.70	C						6.788	2.493	1.17	F						1.182	6.054	0.24	A					0.041	2.004	0.44	A				
1 - Epperstone Bypass		4.211	1.281	0.11	B						1.545	5.460	0.60	A						0.751	3.041	0.41	A					0.076	1.003	0.03	A				

Existing Layout - 2037LG

2 - Southwell Road	D 17	2.988	2.678	0.86	D	14.65	B	2%	[2 - Southwell Road]	D 18	1.306	1.056	0.56	B	50.95	F	-11%	[4 - Nottingham Road]	D 19	0.773	6.730	0.40	A	4.95	A	42%	[4 - Nottingham Road]	D 20	0.079	2.703	0.03	A	2.10	A	90%
3 - A6097		4.784	4.383	0.83	B						6.927	1.888	0.88	C						1.125	4.052	0.52	A					0.090	1.004	0.04	A				
4 - Nottingham Road		3.217	6.177	0.77	C						4.822	1.311	1.11	F						1.166	6.563	0.63	A					0.041	2.004	0.44	A				
1 - Epperstone Bypass		4.088	1.881	0.81	B						1.540	5.460	0.60	A						0.748	3.041	0.41	A					0.076	1.003	0.03	A				

Existing Layout - 2023HG

2 - Southwell Road	D 21	1.842	1.322	1.04	F	46.00	E	-9%	[2 - Southwell Road]	D 22	2.497	1.968	0.68	B	20.64	F	-23%	[4 - Nottingham Road]	D 23	0.935	8.49	0.49	A	6.12	A	27%	[4 - Nottingham Road]	D 24	0.081	2.803	0.03	A	2.12	A	90%
3 - A6097		1.544	4.696	0.46	E						4.033	8.302	1.02	F						1.488	5.088	0.88	A					0.091	1.005	0.05	A				
4 - Nottingham Road		8.337	9.391	0.71	E						1.779	7.445	1.45	F						1.679	8.092	0.92	A					0.043	2.004	0.44	A				
1 - Epperstone Bypass		1.055	2.393	0.33	D						2.036	6.67	0.67	A						0.900	4.047	0.47	A					0.077	1.004	0.04	A				

Existing Layout - 2037HG

2 - Southwell Road	D 25	7.75	5.69	1.34	F	20.38	F	-20%	[2 - Southwell Road]	D 26	6.632	4.589	0.89	E	63.45	F	-33%	[4 - Nottingham Road]	D 27	1.592	1.960	0.60	B	8.92	A	11%	[4 - Nottingham Road]	D 28	0.084	2.803	0.03	A	2.15	A	90%
3 - A6097		7.161	6.228	1.08	F						1.933	4.533	1.23	F						2.175	6.688	0.88	A					0.093	1.006	0.06	A				
4 - Nottingham Road		5.573	9.391	1.11	F						3.999	2.176	1.66	F						3.277	4.077	0.77	B					0.146	2.005	0.05	A				

1 - Epperstone By- Pass	7 1. 4	1 3 2. 7 5	1 0 7	F					3. 3	9. 3 5	0 . 7 7	A							1. 2	4 . 9 8	0 . 5 6	A										0. 0	1 . 7 9	0 . 0 4	A
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There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

## File summary

### File Description

<b>Title</b>	Southwell Road / A6097 / Nottingham Road / Epperstone By-Pass
<b>Location</b>	Gedling, Nottingham
<b>Site number</b>	Junction 11
<b>Date</b>	04/04/2013
<b>Version</b>	
<b>Status</b>	Existing Layout
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	90372
<b>Enumerator</b>	T Nichol
<b>Description</b>	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15		✓
D3	2023	IP	ONE HOUR	12:45	14:15	15		✓
D4	2023	OP	ONE HOUR	22:45	00:15	15		✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15		✓
D7	2037	IP	ONE HOUR	12:45	14:15	15		✓
D8	2037	OP	ONE HOUR	22:45	00:15	15		✓
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓	✓
D10	2037 final	PM	ONE HOUR	16:45	18:15	15		✓
D11	2037 final	IP	ONE HOUR	12:45	14:15	15		✓
D12	2037 final	OP	ONE HOUR	22:45	00:15	15		✓
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15		✓

D15	2023LG	IP	ONE HOUR	12:45	14:15	15		✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15		✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15		✓
D19	2037LG	IP	ONE HOUR	12:45	14:15	15		✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15		✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15		✓
D23	2023HG	IP	ONE HOUR	12:45	14:15	15		✓
D24	2023HG	OP	ONE HOUR	22:45	00:15	15		✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15		✓
D27	2037HG	IP	ONE HOUR	12:45	14:15	15		✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15		✓

### Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	100.000	100.000

## Existing Layout - 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D1 - 2023, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	24.62	C

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-4	2 - Southwell Road

## Arms

### Arms

Arm	Name	Description
2	Southwell Road	
3	A6097	
4	Nottingham Road	
1	Epperstone By-Pass	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
2 - Southwell Road	3.50	5.40	10.0	48.8	42.3	48.0	
3 - A6097	6.70	6.70	0.0	26.3	42.3	36.0	
4 - Nottingham Road	3.70	6.50	10.0	27.5	42.3	29.0	
1 - Epperstone By-Pass	6.70	6.70	0.0	26.2	42.3	16.0	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
2 - Southwell Road	0.561	1371
3 - A6097	0.695	2012
4 - Nottingham Road	0.620	1595
1 - Epperstone By-Pass	0.744	2152

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	412	100.000
3 - A6097		ONE HOUR	✓	1214	100.000
4 - Nottingham Road		ONE HOUR	✓	705	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1320	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	78	259	75
	3 - A6097	122	0	300	792
	4 - Nottingham Road	206	258	1	240
	1 - Epperstone By-Pass	175	779	364	2

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.90	56.37	6.6	F	412	412
3 - A6097	0.90	23.57	8.2	C	1214	1214
4 - Nottingham Road	0.84	24.03	4.9	C	705	705
1 - Epperstone By-Pass	0.87	16.01	6.2	C	1320	1320

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	370	93	1258	665	0.557	368	451	0.6	1.2	12.026	B
3 - A6097	1091	273	627	1576	0.693	1087	999	1.2	2.2	7.317	A
4 - Nottingham Road	634	158	888	1044	0.607	631	827	0.9	1.5	8.659	A
1 - Epperstone By-Pass	1187	297	526	1761	0.674	1183	993	1.2	2.0	6.191	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	454	113	1529	514	0.883	437	546	1.2	5.4	40.639	E
3 - A6097	1337	334	754	1487	0.899	1316	1211	2.2	7.3	19.109	C
4 - Nottingham Road	776	194	1073	930	0.835	764	998	1.5	4.4	20.501	C
1 - Epperstone By-Pass	1453	363	636	1679	0.866	1438	1201	2.0	5.8	14.159	B

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	454	113	1544	505	0.898	449	553	5.4	6.6	56.371	F
3 - A6097	1337	334	767	1478	0.904	1333	1225	7.3	8.2	23.565	C
4 - Nottingham Road	776	194	1087	920	0.843	774	1013	4.4	4.9	24.031	C
1 - Epperstone By-Pass	1453	363	645	1673	0.869	1452	1217	5.8	6.2	16.008	C

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	370	93	1281	652	0.568	391	460	6.6	1.4	14.834	B
3 - A6097	1091	273	652	1559	0.700	1115	1021	8.2	2.4	8.513	A
4 - Nottingham Road	634	158	912	1029	0.616	647	854	4.9	1.6	9.726	A
1 - Epperstone By-Pass	1187	297	539	1752	0.677	1203	1020	6.2	2.1	6.745	A

## Existing Layout - 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	121.15	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-18	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	444	100.000
3 - A6097		ONE HOUR	✓	1451	100.000
4 - Nottingham Road		ONE HOUR	✓	854	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	963	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	137	169	138
	3 - A6097	155	1	290	1005
	4 - Nottingham Road	321	243	0	290
	1 - Epperstone By-Pass	190	633	139	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.63	12.38	1.7	B	407	611
3 - A6097	0.96	36.53	15.3	E	1331	1997
4 - Nottingham Road	1.32	451.52	117.5	F	784	1175
1 - Epperstone By-Pass	0.63	5.85	1.7	A	884	1325

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	334	84	761	944	0.354	332	497	0.0	0.5	5.865	A

3 - A6097	1092	273	335	1779	0.614	1086	759	0.0	1.6	5.149	A
4 - Nottingham Road	643	161	973	991	0.649	636	448	0.0	1.8	9.935	A
1 - Epperstone By-Pass	725	181	537	1753	0.414	722	1072	0.0	0.7	3.483	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	399	100	909	861	0.463	398	592	0.5	0.9	7.748	A
3 - A6097	1304	326	401	1733	0.753	1299	906	1.6	2.9	8.187	A
4 - Nottingham Road	768	192	1164	873	0.879	752	536	1.8	5.8	26.712	D
1 - Epperstone By-Pass	866	216	636	1679	0.516	864	1279	0.7	1.1	4.410	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	489	122	1056	779	0.628	486	647	0.9	1.6	12.153	B
3 - A6097	1598	399	490	1671	0.956	1559	1052	2.9	12.6	25.959	D
4 - Nottingham Road	940	235	1399	727	1.293	722	649	5.8	60.4	179.226	F
1 - Epperstone By-Pass	1060	265	644	1673	0.634	1058	1477	1.1	1.7	5.825	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	489	122	1055	779	0.627	489	646	1.6	1.7	12.376	B
3 - A6097	1598	399	492	1670	0.957	1587	1051	12.6	15.3	36.527	E
4 - Nottingham Road	940	235	1423	712	1.320	712	656	60.4	117.5	435.159	F
1 - Epperstone By-Pass	1060	265	641	1676	0.633	1060	1494	1.7	1.7	5.848	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	399	100	936	846	0.472	402	631	1.7	0.9	8.168	A
3 - A6097	1304	326	404	1731	0.754	1353	934	15.3	3.2	10.679	B
4 - Nottingham Road	768	192	1208	845	0.908	838	549	117.5	99.8	451.521	F
1 - Epperstone By-Pass	866	216	699	1632	0.530	868	1348	1.7	1.1	4.722	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	334	84	861	888	0.376	335	627	0.9	0.6	6.529	A
3 - A6097	1092	273	338	1777	0.615	1099	859	3.2	1.6	5.355	A
4 - Nottingham Road	643	161	984	985	0.653	975	452	99.8	16.9	220.045	F
1 - Epperstone By-Pass	725	181	762	1586	0.457	726	1197	1.1	0.8	4.195	A

## Existing Layout - 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	5.53	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	33	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	352	100.000
3 - A6097		ONE HOUR	✓	857	100.000
4 - Nottingham Road		ONE HOUR	✓	588	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	683	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	1	104	159	88
From 3 - A6097	113	3	245	496
From 4 - Nottingham Road	185	231	2	170
From 1 - Epperstone By-Pass	99	450	133	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0
From 1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.45	7.55	0.8	A	323	485
3 - A6097	0.55	4.65	1.2	A	786	1180
4 - Nottingham Road	0.58	7.69	1.4	A	540	809
1 - Epperstone By-Pass	0.44	3.74	0.8	A	627	940

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	265	66	615	1026	0.258	264	298	0.0	0.3	4.714	A
3 - A6097	645	161	288	1812	0.356	643	591	0.0	0.6	3.076	A
4 - Nottingham Road	443	111	527	1268	0.349	441	404	0.0	0.5	4.337	A
1 - Epperstone By-Pass	514	129	401	1854	0.277	513	566	0.0	0.4	2.682	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	316	79	736	958	0.330	316	357	0.3	0.5	5.602	A
3 - A6097	770	193	345	1772	0.435	770	707	0.6	0.8	3.587	A
4 - Nottingham Road	529	132	630	1204	0.439	528	484	0.5	0.8	5.315	A
1 - Epperstone By-Pass	614	154	480	1795	0.342	613	678	0.4	0.5	3.044	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	388	97	901	866	0.448	386	437	0.5	0.8	7.492	A
3 - A6097	944	236	422	1719	0.549	942	866	0.8	1.2	4.624	A
4 - Nottingham Road	647	162	771	1116	0.580	645	592	0.8	1.4	7.598	A
1 - Epperstone By-Pass	752	188	587	1716	0.438	751	829	0.5	0.8	3.729	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	388	97	903	865	0.448	388	438	0.8	0.8	7.546	A
3 - A6097	944	236	423	1718	0.549	944	868	1.2	1.2	4.649	A
4 - Nottingham Road	647	162	773	1116	0.580	647	593	1.4	1.4	7.687	A
1 - Epperstone By-Pass	752	188	589	1714	0.439	752	831	0.8	0.8	3.740	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	316	79	739	956	0.331	318	359	0.8	0.5	5.646	A
3 - A6097	770	193	346	1771	0.435	772	710	1.2	0.8	3.609	A
4 - Nottingham Road	529	132	633	1203	0.440	531	486	1.4	0.8	5.380	A
1 - Epperstone By-Pass	614	154	483	1793	0.342	615	681	0.8	0.5	3.059	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	265	66	618	1024	0.259	266	300	0.5	0.4	4.749	A
3 - A6097	645	161	290	1810	0.356	646	594	0.8	0.6	3.093	A

4 - Nottingham Road	443	111	529	1267	0.34 9	444	406	0.8	0.5	4.37 9	A
1 - Epperstone By-Pass	514	129	404	1852	0.27 8	515	569	0.5	0.4	2.69 4	A

## Existing Layout - 2023, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.12	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	35	100.000
3 - A6097		ONE HOUR	✓	83	100.000
4 - Nottingham Road		ONE HOUR	✓	58	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	67	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	10	16	9
3 - A6097	11	0	24	48
4 - Nottingham Road	18	23	0	17
1 - Epperstone By-Pass	10	44	13	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.81	0.0	A	32	48
3 - A6097	0.05	1.90	0.0	A	76	114
4 - Nottingham Road	0.04	2.42	0.0	A	53	80
1 - Epperstone By-Pass	0.03	1.77	0.0	A	61	92

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	26	7	60	1337	0.020	26	29	0.0	0.0	2.745	A
3 - A6097	62	16	29	1992	0.031	62	58	0.0	0.0	1.865	A
4 - Nottingham Road	44	11	51	1563	0.028	44	40	0.0	0.0	2.368	A
1 - Epperstone By-Pass	50	13	39	2123	0.024	50	56	0.0	0.0	1.735	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	31	8	72	1331	0.024	31	35	0.0	0.0	2.770	A
3 - A6097	75	19	34	1988	0.038	75	69	0.0	0.0	1.880	A
4 - Nottingham Road	52	13	61	1557	0.033	52	48	0.0	0.0	2.391	A
1 - Epperstone By-Pass	60	15	47	2117	0.028	60	66	0.0	0.0	1.749	A

#### 23:15 - 23:30



Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	39	10	88	1321	0.029	39	43	0.0	0.0	2.805	A
3 - A6097	91	23	42	1983	0.046	91	85	0.0	0.0	1.902	A
4 - Nottingham Road	64	16	75	1549	0.041	64	58	0.0	0.0	2.424	A
1 - Epperstone By-Pass	74	18	57	2110	0.035	74	81	0.0	0.0	1.767	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	39	10	88	1321	0.029	39	43	0.0	0.0	2.805	A
3 - A6097	91	23	42	1983	0.046	91	85	0.0	0.0	1.902	A
4 - Nottingham Road	64	16	75	1548	0.041	64	58	0.0	0.0	2.424	A
1 - Epperstone By-Pass	74	18	57	2110	0.035	74	81	0.0	0.0	1.767	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	31	8	72	1331	0.024	31	35	0.0	0.0	2.770	A
3 - A6097	75	19	34	1988	0.038	75	69	0.0	0.0	1.880	A
4 - Nottingham Road	52	13	61	1557	0.033	52	48	0.0	0.0	2.393	A
1 - Epperstone By-Pass	60	15	47	2117	0.028	60	67	0.0	0.0	1.749	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	26	7	60	1337	0.020	26	29	0.0	0.0	2.746	A
3 - A6097	62	16	29	1992	0.031	63	58	0.0	0.0	1.865	A
4 - Nottingham Road	44	11	51	1563	0.028	44	40	0.0	0.0	2.370	A
1 - Epperstone By-Pass	50	13	39	2123	0.024	50	56	0.0	0.0	1.736	A

## Existing Layout - 2037, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D5 - 2037, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	40.22	E

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-8	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	417	100.000
3 - A6097		ONE HOUR	✓	1280	100.000
4 - Nottingham Road		ONE HOUR	✓	742	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1368	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	82	260	75
	3 - A6097	127	0	323	830
	4 - Nottingham Road	209	290	1	242
	1 - Epperstone By-Pass	176	824	366	2

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	1.00	109.06	13.9	F	417	417
3 - A6097	0.95	36.01	13.3	E	1280	1280
4 - Nottingham Road	0.91	38.62	8.2	E	742	742
1 - Epperstone By-Pass	0.92	24.06	9.5	C	1368	1368

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	375	94	1328	626	0.599	372	458	0.7	1.4	14.015	B
3 - A6097	1151	288	629	1574	0.731	1146	1071	1.4	2.6	8.305	A
4 - Nottingham Road	667	167	925	1021	0.653	664	850	1.0	1.8	9.982	A
1 - Epperstone By-Pass	1230	307	561	1735	0.709	1226	1028	1.3	2.4	7.005	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	459	115	1604	471	0.975	429	552	1.4	9.0	62.374	F
3 - A6097	1409	352	744	1494	0.943	1377	1289	2.6	10.8	25.553	D
4 - Nottingham Road	817	204	1109	907	0.900	797	1012	1.8	6.8	28.677	D
1 - Epperstone By-Pass	1506	377	674	1651	0.912	1482	1232	2.4	8.3	19.123	C

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	459	115	1627	459	1.001	440	561	9.0	13.9	109.060	F
3 - A6097	1409	352	758	1485	0.949	1399	1308	10.8	13.3	36.008	E
4 - Nottingham Road	817	204	1128	896	0.912	811	1030	6.8	8.2	38.619	E
1 - Epperstone By-Pass	1506	377	686	1642	0.917	1502	1253	8.3	9.5	24.057	C

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	375	94	1367	604	0.620	424	475	13.9	1.7	25.045	D
3 - A6097	1151	288	680	1539	0.748	1191	1111	13.3	3.1	11.471	B
4 - Nottingham Road	667	167	969	994	0.671	691	902	8.2	2.1	12.784	B
1 - Epperstone By-Pass	1230	307	584	1718	0.716	1257	1076	9.5	2.6	8.257	A

## Existing Layout - 2037, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	153.82	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	449	100.000
3 - A6097		ONE HOUR	✓	1511	100.000
4 - Nottingham Road		ONE HOUR	✓	870	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	990	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	142	170	137
	3 - A6097	159	1	316	1035
	4 - Nottingham Road	320	261	0	289
	1 - Epperstone By-Pass	188	660	141	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.65	13.67	1.8	B	412	618
3 - A6097	1.00	59.28	27.4	F	1387	2080
4 - Nottingham Road	1.37	558.40	133.1	F	798	1197
1 - Epperstone By-Pass	0.65	6.14	1.8	A	908	1363

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	338	85	796	924	0.366	336	498	0.0	0.6	6.094	A

3 - A6097	1138	284	336	1778	0.640	1131	796	0.0	1.7	5.503	A
4 - Nottingham Road	655	164	997	976	0.671	647	469	0.0	2.0	10.697	B
1 - Epperstone By-Pass	745	186	552	1742	0.428	742	1093	0.0	0.7	3.591	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	404	101	949	839	0.481	402	591	0.6	0.9	8.221	A
3 - A6097	1358	340	402	1732	0.784	1351	949	1.7	3.5	9.294	A
4 - Nottingham Road	782	196	1192	855	0.914	760	561	2.0	7.4	32.420	D
1 - Epperstone By-Pass	890	222	651	1668	0.533	888	1302	0.7	1.1	4.607	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	494	124	1096	756	0.654	491	637	0.9	1.8	13.376	B
3 - A6097	1664	416	491	1670	0.996	1600	1095	3.5	19.5	35.356	E
4 - Nottingham Road	958	239	1416	717	1.337	713	675	7.4	68.6	205.981	F
1 - Epperstone By-Pass	1090	273	646	1672	0.652	1087	1483	1.1	1.8	6.125	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	494	124	1094	757	0.653	494	636	1.8	1.8	13.666	B
3 - A6097	1664	416	494	1668	0.997	1632	1094	19.5	27.4	59.283	F
4 - Nottingham Road	958	239	1443	700	1.368	700	684	68.6	133.1	502.621	F
1 - Epperstone By-Pass	1090	273	640	1676	0.650	1090	1502	1.8	1.8	6.140	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	404	101	964	830	0.486	407	616	1.8	1.0	8.575	A
3 - A6097	1358	340	406	1729	0.786	1452	964	27.4	3.9	17.151	C
4 - Nottingham Road	782	196	1274	805	0.972	799	585	133.1	128.9	558.404	F
1 - Epperstone By-Pass	890	222	687	1641	0.542	893	1385	1.8	1.2	4.826	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	338	85	894	870	0.389	339	616	1.0	0.6	6.806	A
3 - A6097	1138	284	339	1776	0.641	1146	894	3.9	1.8	5.785	A
4 - Nottingham Road	655	164	1011	968	0.677	961	474	128.9	52.5	342.469	F
1 - Epperstone By-Pass	745	186	763	1585	0.470	747	1208	1.2	0.9	4.301	A

## Existing Layout - 2037, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	5.99	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	28	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	358	100.000
3 - A6097		ONE HOUR	✓	906	100.000
4 - Nottingham Road		ONE HOUR	✓	612	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	711	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	1	109	160	88
From 3 - A6097	118	3	266	519
From 4 - Nottingham Road	186	252	2	172
From 1 - Epperstone By-Pass	100	475	135	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0
From 1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.47	8.17	0.9	A	329	493
3 - A6097	0.58	5.01	1.4	A	831	1247
4 - Nottingham Road	0.61	8.51	1.6	A	562	842
1 - Epperstone By-Pass	0.46	3.96	0.9	A	652	979

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	270	67	651	1006	0.268	268	304	0.0	0.4	4.873	A
3 - A6097	682	171	290	1810	0.377	680	629	0.0	0.6	3.178	A
4 - Nottingham Road	461	115	548	1255	0.367	458	422	0.0	0.6	4.505	A
1 - Epperstone By-Pass	535	134	421	1839	0.291	534	585	0.0	0.4	2.754	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	322	80	779	934	0.345	321	364	0.4	0.5	5.870	A
3 - A6097	814	204	347	1770	0.460	813	753	0.6	0.8	3.759	A
4 - Nottingham Road	550	138	655	1188	0.463	549	505	0.6	0.9	5.622	A
1 - Epperstone By-Pass	639	160	504	1777	0.360	639	700	0.4	0.6	3.160	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	394	99	954	836	0.471	393	445	0.5	0.9	8.093	A
3 - A6097	998	249	425	1716	0.581	995	921	0.8	1.4	4.980	A
4 - Nottingham Road	674	168	802	1098	0.614	671	618	0.9	1.6	8.385	A
1 - Epperstone By-Pass	783	196	616	1694	0.462	782	856	0.6	0.9	3.942	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	394	99	956	835	0.472	394	446	0.9	0.9	8.166	A
3 - A6097	998	249	426	1716	0.581	997	924	1.4	1.4	5.013	A
4 - Nottingham Road	674	168	804	1096	0.615	674	620	1.6	1.6	8.513	A
1 - Epperstone By-Pass	783	196	619	1692	0.463	783	859	0.9	0.9	3.958	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	322	80	782	932	0.345	323	365	0.9	0.5	5.929	A
3 - A6097	814	204	349	1769	0.460	817	757	1.4	0.9	3.789	A
4 - Nottingham Road	550	138	658	1187	0.464	553	508	1.6	0.9	5.704	A
1 - Epperstone By-Pass	639	160	508	1775	0.360	640	704	0.9	0.6	3.178	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	270	67	654	1004	0.269	270	305	0.5	0.4	4.913	A
3 - A6097	682	171	292	1809	0.377	683	633	0.9	0.6	3.200	A

4 - Nottingham Road	461	115	550	1253	0.368	462	425	0.9	0.6	4.554	A
1 - Epperstone By-Pass	535	134	424	1837	0.291	536	588	0.6	0.4	2.767	A

## Existing Layout - 2037, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.12	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	36	100.000
3 - A6097		ONE HOUR	✓	89	100.000
4 - Nottingham Road		ONE HOUR	✓	60	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	69	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	11	16	9
3 - A6097	12	0	26	51
4 - Nottingham Road	18	25	0	17
1 - Epperstone By-Pass	10	46	13	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.81	0.0	A	33	50
3 - A6097	0.05	1.91	0.1	A	82	123
4 - Nottingham Road	0.04	2.43	0.0	A	55	83
1 - Epperstone By-Pass	0.04	1.77	0.0	A	63	95

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	27	7	63	1335	0.020	27	30	0.0	0.0	2.750	A
3 - A6097	67	17	29	1992	0.034	67	62	0.0	0.0	1.869	A
4 - Nottingham Road	45	11	54	1561	0.029	45	41	0.0	0.0	2.373	A
1 - Epperstone By-Pass	52	13	41	2122	0.024	52	58	0.0	0.0	1.738	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	32	8	75	1329	0.024	32	36	0.0	0.0	2.776	A
3 - A6097	80	20	34	1988	0.040	80	74	0.0	0.0	1.885	A
4 - Nottingham Road	54	13	65	1555	0.035	54	49	0.0	0.0	2.398	A
1 - Epperstone By-Pass	62	16	49	2115	0.029	62	69	0.0	0.0	1.752	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	40	10	92	1319	0.030	40	44	0.0	0.0	2.813	A
3 - A6097	98	24	42	1983	0.049	98	90	0.0	0.1	1.909	A
4 - Nottingham Road	66	17	79	1546	0.043	66	61	0.0	0.0	2.432	A
1 - Epperstone By-Pass	76	19	61	2107	0.036	76	85	0.0	0.0	1.771	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	40	10	92	1319	0.030	40	44	0.0	0.0	2.813	A
3 - A6097	98	24	42	1983	0.049	98	90	0.1	0.1	1.909	A
4 - Nottingham Road	66	17	79	1546	0.043	66	61	0.0	0.0	2.432	A
1 - Epperstone By-Pass	76	19	61	2107	0.036	76	85	0.0	0.0	1.771	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	32	8	76	1328	0.024	32	36	0.0	0.0	2.777	A
3 - A6097	80	20	34	1988	0.040	80	74	0.1	0.0	1.886	A
4 - Nottingham Road	54	13	65	1555	0.035	54	49	0.0	0.0	2.400	A
1 - Epperstone By-Pass	62	16	49	2115	0.029	62	69	0.0	0.0	1.755	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	27	7	63	1335	0.020	27	30	0.0	0.0	2.753	A
3 - A6097	67	17	29	1992	0.034	67	62	0.0	0.0	1.869	A
4 - Nottingham Road	45	11	54	1561	0.029	45	41	0.0	0.0	2.375	A
1 - Epperstone By-Pass	52	13	41	2121	0.024	52	58	0.0	0.0	1.738	A

## Existing Layout - 2037 final, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D9 - 2037 final, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	77.76	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	438	100.000
3 - A6097		ONE HOUR	✓	1321	100.000
4 - Nottingham Road		ONE HOUR	✓	809	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1442	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	82	278	78
	3 - A6097	127	0	342	852
	4 - Nottingham Road	227	309	1	272
	1 - Epperstone By-Pass	183	855	404	0

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	1.16	240.87	35.3	F	438	438
3 - A6097	0.99	56.88	22.5	F	1321	1321
4 - Nottingham Road	1.00	79.00	19.5	F	809	809
1 - Epperstone By-Pass	0.98	46.64	19.9	E	1442	1442

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	394	98	1403	584	0.675	389	480	0.8	2.0	18.114	C
3 - A6097	1188	297	679	1540	0.771	1181	1114	1.6	3.2	9.853	A
4 - Nottingham Road	727	182	945	1009	0.721	722	915	1.2	2.5	12.339	B
1 - Epperstone By-Pass	1296	324	593	1711	0.758	1290	1074	1.5	3.0	8.435	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	482	121	1670	434	1.110	417	568	2.0	18.3	109.085	F
3 - A6097	1454	364	771	1476	0.986	1401	1315	3.2	16.5	35.124	E
4 - Nottingham Road	891	223	1113	905	0.985	848	1060	2.5	13.1	45.887	E
1 - Epperstone By-Pass	1588	397	698	1633	0.972	1540	1263	3.0	14.8	29.671	D

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	482	121	1700	417	1.155	415	579	18.3	35.3	240.874	F
3 - A6097	1454	364	777	1472	0.988	1430	1337	16.5	22.5	56.881	F
4 - Nottingham Road	891	223	1134	892	0.999	865	1074	13.1	19.5	79.000	F
1 - Epperstone By-Pass	1588	397	712	1623	0.978	1567	1287	14.8	19.9	46.644	E

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	394	98	1492	534	0.737	517	516	35.3	4.3	146.461	F
3 - A6097	1188	297	803	1454	0.817	1258	1207	22.5	4.9	23.439	C
4 - Nottingham Road	727	182	1025	959	0.758	792	1037	19.5	3.4	28.150	D
1 - Epperstone By-Pass	1296	324	647	1671	0.776	1361	1170	19.9	3.6	13.872	B

## Existing Layout - 2037 final, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	297.69	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-25	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037 final	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	477	100.000
3 - A6097		ONE HOUR	✓	1584	100.000
4 - Nottingham Road		ONE HOUR	✓	952	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1055	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	145	188	144
	3 - A6097	162	1	336	1085
	4 - Nottingham Road	344	284	0	324
	1 - Epperstone By-Pass	198	691	165	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.73	18.03	2.6	C	438	657
3 - A6097	1.07	127.88	69.2	F	1454	2180
4 - Nottingham Road	1.49	1042.62	229.7	F	874	1310
1 - Epperstone By-Pass	0.69	6.89	2.2	A	968	1452

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	359	90	854	892	0.403	356	524	0.0	0.7	6.686	A



3 - A6097	1193	298	373	1753	0.680	1184	837	0.0	2.1	6.244	A
4 - Nottingham Road	717	179	1041	949	0.755	705	515	0.0	2.9	14.165	B
1 - Epperstone By-Pass	794	199	587	1716	0.463	791	1159	0.0	0.9	3.878	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	429	107	1006	807	0.532	427	608	0.7	1.1	9.434	A
3 - A6097	1424	356	446	1702	0.837	1413	987	2.1	4.7	12.059	B
4 - Nottingham Road	856	214	1243	824	1.039	791	616	2.9	19.1	65.551	F
1 - Epperstone By-Pass	948	237	667	1656	0.573	947	1367	0.9	1.3	5.060	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	525	131	1154	724	0.726	520	639	1.1	2.5	17.208	C
3 - A6097	1744	436	544	1634	1.068	1605	1130	4.7	39.5	59.705	F
4 - Nottingham Road	1048	262	1423	713	1.471	712	726	19.1	103.3	322.380	F
1 - Epperstone By-Pass	1162	290	635	1680	0.691	1158	1500	1.3	2.2	6.844	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	525	131	1154	724	0.726	525	638	2.5	2.6	18.029	C
3 - A6097	1744	436	548	1631	1.069	1625	1131	39.5	69.2	127.885	F
4 - Nottingham Road	1048	262	1440	702	1.494	702	733	103.3	189.9	761.774	F
1 - Epperstone By-Pass	1162	290	630	1684	0.690	1162	1511	2.2	2.2	6.891	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	429	107	982	820	0.523	435	601	2.6	1.1	9.474	A
3 - A6097	1424	356	452	1697	0.839	1670	965	69.2	7.8	87.426	F
4 - Nottingham Road	856	214	1448	697	1.228	697	674	189.9	229.7	1042.625	F
1 - Epperstone By-Pass	948	237	631	1683	0.564	952	1513	2.2	1.3	4.952	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	359	90	924	853	0.421	361	609	1.1	0.7	7.340	A
3 - A6097	1193	298	376	1750	0.681	1215	909	7.8	2.2	6.995	A
4 - Nottingham Road	717	179	1067	933	0.768	929	524	229.7	176.5	787.556	F
1 - Epperstone By-Pass	794	199	738	1604	0.495	796	1258	1.3	1.0	4.462	A

## Existing Layout - 2037 final, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	6.75	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	21	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037 final	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	374	100.000
3 - A6097		ONE HOUR	✓	934	100.000
4 - Nottingham Road		ONE HOUR	✓	659	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	750	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To				
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	1	109	173	91
	3 - A6097	118	3	278	535
	4 - Nottingham Road	199	265	2	193
	1 - Epperstone By-Pass	103	491	155	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.51	9.16	1.0	A	343	515
3 - A6097	0.61	5.46	1.5	A	857	1286
4 - Nottingham Road	0.67	10.05	2.0	B	605	907
1 - Epperstone By-Pass	0.49	4.26	1.0	A	688	1032

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	282	70	688	985	0.286	280	316	0.0	0.4	5.094	A
3 - A6097	703	176	317	1791	0.393	701	651	0.0	0.6	3.294	A
4 - Nottingham Road	496	124	562	1247	0.398	494	456	0.0	0.7	4.765	A
1 - Epperstone By-Pass	565	141	440	1825	0.309	563	615	0.0	0.4	2.849	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	336	84	823	909	0.370	335	378	0.4	0.6	6.267	A
3 - A6097	840	210	380	1748	0.480	839	779	0.6	0.9	3.954	A
4 - Nottingham Road	592	148	672	1178	0.503	591	546	0.7	1.0	6.119	A
1 - Epperstone By-Pass	674	169	527	1760	0.383	674	736	0.4	0.6	3.312	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	412	103	1007	806	0.511	410	462	0.6	1.0	9.047	A
3 - A6097	1028	257	464	1689	0.609	1026	953	0.9	1.5	5.407	A
4 - Nottingham Road	726	181	822	1085	0.669	722	668	1.0	2.0	9.813	A
1 - Epperstone By-Pass	826	206	644	1673	0.494	824	900	0.6	1.0	4.234	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	412	103	1010	805	0.512	412	463	1.0	1.0	9.159	A
3 - A6097	1028	257	466	1688	0.609	1028	956	1.5	1.5	5.457	A
4 - Nottingham Road	726	181	825	1083	0.670	725	669	2.0	2.0	10.045	B
1 - Epperstone By-Pass	826	206	647	1671	0.494	826	903	1.0	1.0	4.259	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	336	84	827	907	0.371	338	380	1.0	0.6	6.348	A
3 - A6097	840	210	382	1746	0.481	842	783	1.5	0.9	3.993	A
4 - Nottingham Road	592	148	675	1176	0.504	596	548	2.0	1.0	6.252	A
1 - Epperstone By-Pass	674	169	532	1757	0.384	676	740	1.0	0.6	3.332	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	282	70	692	983	0.286	282	318	0.6	0.4	5.145	A
3 - A6097	703	176	319	1790	0.393	704	655	0.9	0.7	3.319	A

4 - Nottingham Road	496	124	565	1245	0.39 9	498	459	1.0	0.7	4.83 0	A
1 - Epperstone By-Pass	565	141	444	1822	0.31 0	565	619	0.6	0.5	2.86 7	A

## Existing Layout - 2037 final, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.13	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2037 final	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	37	100.000
3 - A6097		ONE HOUR	✓	91	100.000
4 - Nottingham Road		ONE HOUR	✓	64	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	73	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	11	17	9
3 - A6097	12	0	27	52
4 - Nottingham Road	19	26	0	19
1 - Epperstone By-Pass	10	48	15	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.82	0.0	A	34	51
3 - A6097	0.05	1.91	0.1	A	84	125
4 - Nottingham Road	0.05	2.44	0.0	A	59	88
1 - Epperstone By-Pass	0.04	1.78	0.0	A	67	100

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	28	7	67	1333	0.021	28	31	0.0	0.0	2.756	A
3 - A6097	69	17	31	1990	0.034	68	64	0.0	0.0	1.872	A
4 - Nottingham Road	48	12	55	1561	0.031	48	44	0.0	0.0	2.379	A
1 - Epperstone By-Pass	55	14	43	2120	0.026	55	60	0.0	0.0	1.742	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	33	8	80	1326	0.025	33	37	0.0	0.0	2.784	A
3 - A6097	82	20	37	1986	0.041	82	76	0.0	0.0	1.889	A
4 - Nottingham Road	58	14	66	1554	0.037	58	53	0.0	0.0	2.404	A
1 - Epperstone By-Pass	66	16	51	2114	0.031	66	72	0.0	0.0	1.756	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	41	10	98	1316	0.031	41	45	0.0	0.0	2.822	A
3 - A6097	100	25	45	1980	0.051	100	94	0.0	0.1	1.913	A
4 - Nottingham Road	70	18	80	1545	0.046	70	65	0.0	0.0	2.440	A
1 - Epperstone By-Pass	80	20	63	2106	0.038	80	88	0.0	0.0	1.776	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	41	10	98	1316	0.031	41	45	0.0	0.0	2.822	A
3 - A6097	100	25	45	1980	0.051	100	94	0.1	0.1	1.913	A
4 - Nottingham Road	70	18	80	1545	0.046	70	65	0.0	0.0	2.440	A
1 - Epperstone By-Pass	80	20	63	2106	0.038	80	88	0.0	0.0	1.776	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	33	8	80	1326	0.025	33	37	0.0	0.0	2.786	A
3 - A6097	82	20	37	1986	0.041	82	76	0.1	0.0	1.892	A
4 - Nottingham Road	58	14	66	1554	0.037	58	53	0.0	0.0	2.405	A
1 - Epperstone By-Pass	66	16	51	2114	0.031	66	72	0.0	0.0	1.756	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	28	7	67	1333	0.021	28	31	0.0	0.0	2.759	A
3 - A6097	69	17	31	1990	0.034	69	64	0.0	0.0	1.872	A
4 - Nottingham Road	48	12	55	1561	0.031	48	44	0.0	0.0	2.381	A
1 - Epperstone By-Pass	55	14	43	2120	0.026	55	60	0.0	0.0	1.744	A

## Existing Layout - 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D13 - 2023LG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	15.46	C

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	1	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	390	100.000
3 - A6097		ONE HOUR	✓	1151	100.000
4 - Nottingham Road		ONE HOUR	✓	668	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1252	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	74	245	71
	3 - A6097	115	0	285	751
	4 - Nottingham Road	195	245	1	227
	1 - Epperstone By-Pass	166	740	344	2

## Vehicle Mix



## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.78	29.33	3.3	D	390	390
3 - A6097	0.84	14.91	5.0	B	1151	1151
4 - Nottingham Road	0.77	16.30	3.2	C	668	668
1 - Epperstone By-Pass	0.81	11.21	4.2	B	1252	1252

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	351	88	1194	701	0.500	349	427	0.6	1.0	10.178	B
3 - A6097	1035	259	594	1599	0.647	1032	949	1.1	1.8	6.316	A
4 - Nottingham Road	601	150	842	1073	0.560	599	784	0.8	1.2	7.557	A
1 - Epperstone By-Pass	1126	281	498	1782	0.632	1123	942	1.0	1.7	5.442	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	429	107	1456	554	0.775	421	520	1.0	3.1	25.591	D
3 - A6097	1267	317	721	1511	0.839	1255	1156	1.8	4.8	13.509	B
4 - Nottingham Road	735	184	1023	960	0.766	728	953	1.2	3.1	15.075	C
1 - Epperstone By-Pass	1378	345	606	1701	0.810	1369	1145	1.7	4.0	10.546	B

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	429	107	1466	549	0.782	428	524	3.1	3.3	29.332	D
3 - A6097	1267	317	729	1505	0.842	1266	1165	4.8	5.0	14.905	B
4 - Nottingham Road	735	184	1033	954	0.771	735	962	3.1	3.2	16.296	C
1 - Epperstone By-Pass	1378	345	612	1697	0.812	1378	1156	4.0	4.2	11.212	B

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	351	88	1209	693	0.506	360	433	3.3	1.0	11.082	B
3 - A6097	1035	259	606	1590	0.651	1047	962	5.0	1.9	6.778	A
4 - Nottingham Road	601	150	855	1064	0.564	608	798	3.2	1.3	8.017	A
1 - Epperstone By-Pass	1126	281	506	1776	0.634	1135	957	4.2	1.8	5.702	A

## Existing Layout - 2023LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	67.50	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	418	100.000
3 - A6097		ONE HOUR	✓	1369	100.000
4 - Nottingham Road		ONE HOUR	✓	803	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	908	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	129	159	130
	3 - A6097	146	1	274	948
	4 - Nottingham Road	302	229	0	272
	1 - Epperstone By-Pass	178	597	132	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.58	10.64	1.3	B	384	575
3 - A6097	0.89	19.08	7.6	C	1256	1884
4 - Nottingham Road	1.17	249.83	67.8	F	737	1105
1 - Epperstone By-Pass	0.60	5.45	1.5	A	833	1250

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	315	79	719	968	0.325	313	468	0.0	0.5	5.483	A

3 - A6097	1031	258	316	1792	0.575	1025	716	0.0	1.3	4.663	A
4 - Nottingham Road	605	151	918	1025	0.590	599	423	0.0	1.4	8.335	A
1 - Epperstone By-Pass	684	171	506	1776	0.385	681	1011	0.0	0.6	3.282	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	376	94	860	889	0.423	375	559	0.5	0.7	6.993	A
3 - A6097	1231	308	379	1749	0.704	1227	856	1.3	2.3	6.847	A
4 - Nottingham Road	722	180	1099	913	0.790	714	507	1.4	3.5	17.348	C
1 - Epperstone By-Pass	816	204	604	1703	0.479	815	1209	0.6	0.9	4.048	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	460	115	1018	800	0.575	458	638	0.7	1.3	10.450	B
3 - A6097	1507	377	463	1690	0.892	1488	1013	2.3	7.0	16.498	C
4 - Nottingham Road	884	221	1334	767	1.152	754	617	3.5	36.0	108.896	F
1 - Epperstone By-Pass	1000	250	658	1663	0.601	997	1430	0.9	1.5	5.393	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	460	115	1021	798	0.576	460	641	1.3	1.3	10.636	B
3 - A6097	1507	377	465	1689	0.893	1505	1016	7.0	7.6	19.076	C
4 - Nottingham Road	884	221	1348	759	1.165	757	622	36.0	67.8	249.834	F
1 - Epperstone By-Pass	1000	250	662	1660	0.602	1000	1443	1.5	1.5	5.453	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	376	94	912	859	0.437	378	628	1.3	0.8	7.512	A
3 - A6097	1231	308	381	1747	0.705	1251	909	7.6	2.4	7.551	A
4 - Nottingham Road	722	180	1119	901	0.802	888	513	67.8	26.3	193.773	F
1 - Epperstone By-Pass	816	204	721	1616	0.505	818	1286	1.5	1.0	4.522	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	315	79	752	949	0.332	316	509	0.8	0.5	5.695	A
3 - A6097	1031	258	319	1790	0.576	1035	749	2.4	1.4	4.795	A
4 - Nottingham Road	605	151	927	1020	0.593	704	427	26.3	1.5	15.520	C
1 - Epperstone By-Pass	684	171	577	1723	0.397	685	1054	1.0	0.7	3.470	A

## Existing Layout - 2023LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	5.04	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	41	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	332	100.000
3 - A6097		ONE HOUR	✓	813	100.000
4 - Nottingham Road		ONE HOUR	✓	556	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	648	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From				
2 - Southwell Road	1	98	150	83
3 - A6097	107	3	232	471
4 - Nottingham Road	174	219	2	161
1 - Epperstone By-Pass	94	427	126	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From				
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.41	6.86	0.7	A	305	457
3 - A6097	0.52	4.29	1.1	A	746	1119
4 - Nottingham Road	0.54	6.82	1.1	A	510	765
1 - Epperstone By-Pass	0.41	3.51	0.7	A	595	892

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	250	62	584	1043	0.240	249	282	0.0	0.3	4.530	A
3 - A6097	612	153	272	1823	0.336	610	560	0.0	0.5	2.964	A
4 - Nottingham Road	419	105	500	1285	0.326	417	383	0.0	0.5	4.136	A
1 - Epperstone By-Pass	488	122	379	1870	0.261	486	537	0.0	0.4	2.599	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	298	75	699	979	0.305	298	338	0.3	0.4	5.283	A
3 - A6097	731	183	326	1785	0.409	730	671	0.5	0.7	3.411	A
4 - Nottingham Road	500	125	598	1224	0.408	499	458	0.5	0.7	4.961	A
1 - Epperstone By-Pass	583	146	454	1815	0.321	582	643	0.4	0.5	2.921	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	366	91	855	891	0.410	365	413	0.4	0.7	6.822	A
3 - A6097	895	224	399	1734	0.516	894	821	0.7	1.1	4.273	A
4 - Nottingham Road	612	153	732	1141	0.537	610	560	0.7	1.1	6.762	A
1 - Epperstone By-Pass	713	178	556	1739	0.410	713	787	0.5	0.7	3.503	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	366	91	857	890	0.411	366	414	0.7	0.7	6.857	A
3 - A6097	895	224	400	1734	0.516	895	822	1.1	1.1	4.291	A
4 - Nottingham Road	612	153	733	1140	0.537	612	562	1.1	1.1	6.818	A
1 - Epperstone By-Pass	713	178	557	1738	0.411	713	788	0.7	0.7	3.512	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	298	75	701	978	0.305	299	339	0.7	0.4	5.316	A
3 - A6097	731	183	327	1784	0.410	732	673	1.1	0.7	3.428	A
4 - Nottingham Road	500	125	600	1223	0.409	502	460	1.1	0.7	5.006	A
1 - Epperstone By-Pass	583	146	456	1813	0.321	583	645	0.7	0.5	2.931	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	250	62	586	1042	0.240	250	284	0.4	0.3	4.552	A
3 - A6097	612	153	274	1821	0.336	613	563	0.7	0.5	2.982	A

4 - Nottingham Road	419	105	502	1284	0.326	419	384	0.7	0.5	4.171	A
1 - Epperstone By-Pass	488	122	382	1868	0.261	488	540	0.5	0.4	2.610	A

## Existing Layout - 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.11	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	33	100.000
3 - A6097		ONE HOUR	✓	79	100.000
4 - Nottingham Road		ONE HOUR	✓	54	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	63	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	10	15	8
3 - A6097	10	0	23	46
4 - Nottingham Road	17	21	0	16
1 - Epperstone By-Pass	9	42	12	0



## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.79	0.0	A	30	45
3 - A6097	0.04	1.90	0.0	A	72	109
4 - Nottingham Road	0.04	2.41	0.0	A	50	74
1 - Epperstone By-Pass	0.03	1.76	0.0	A	58	87

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	25	6	56	1339	0.019	25	27	0.0	0.0	2.738	A
3 - A6097	59	15	26	1993	0.030	59	55	0.0	0.0	1.860	A
4 - Nottingham Road	41	10	48	1565	0.026	41	38	0.0	0.0	2.361	A
1 - Epperstone By-Pass	47	12	36	2125	0.022	47	53	0.0	0.0	1.731	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	30	7	67	1333	0.022	30	32	0.0	0.0	2.761	A
3 - A6097	71	18	31	1990	0.036	71	66	0.0	0.0	1.875	A
4 - Nottingham Road	49	12	58	1559	0.031	49	45	0.0	0.0	2.382	A
1 - Epperstone By-Pass	57	14	43	2120	0.027	57	63	0.0	0.0	1.743	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	36	9	83	1325	0.027	36	40	0.0	0.0	2.793	A
3 - A6097	87	22	39	1985	0.044	87	80	0.0	0.0	1.895	A
4 - Nottingham Road	59	15	70	1551	0.038	59	55	0.0	0.0	2.412	A
1 - Epperstone By-Pass	69	17	53	2113	0.033	69	77	0.0	0.0	1.760	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	36	9	83	1325	0.027	36	40	0.0	0.0	2.793	A
3 - A6097	87	22	39	1985	0.044	87	80	0.0	0.0	1.895	A
4 - Nottingham Road	59	15	70	1551	0.038	59	55	0.0	0.0	2.412	A
1 - Epperstone By-Pass	69	17	53	2113	0.033	69	77	0.0	0.0	1.760	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	30	7	67	1333	0.022	30	32	0.0	0.0	2.761	A
3 - A6097	71	18	31	1990	0.036	71	66	0.0	0.0	1.875	A
4 - Nottingham Road	49	12	58	1559	0.031	49	45	0.0	0.0	2.384	A
1 - Epperstone By-Pass	57	14	43	2120	0.027	57	63	0.0	0.0	1.743	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	25	6	56	1339	0.019	25	27	0.0	0.0	2.738	A
3 - A6097	59	15	26	1993	0.030	60	55	0.0	0.0	1.860	A
4 - Nottingham Road	41	10	48	1565	0.026	41	38	0.0	0.0	2.363	A
1 - Epperstone By-Pass	47	12	36	2125	0.022	47	53	0.0	0.0	1.731	A

## Existing Layout - 2037LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D17 - 2037LG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	14.65	B

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	2	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	373	100.000
3 - A6097		ONE HOUR	✓	1157	100.000
4 - Nottingham Road		ONE HOUR	✓	670	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1234	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	74	232	67
	3 - A6097	115	0	293	749
	4 - Nottingham Road	187	265	1	217
	1 - Epperstone By-Pass	157	748	327	2

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.76	26.88	2.9	D	373	373
3 - A6097	0.83	13.84	4.7	B	1157	1157
4 - Nottingham Road	0.77	16.17	3.2	C	670	670
1 - Epperstone By-Pass	0.81	10.88	4.0	B	1234	1234

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	335	84	1204	695	0.482	334	411	0.5	0.9	9.913	A
3 - A6097	1040	260	564	1620	0.642	1037	975	1.1	1.8	6.149	A
4 - Nottingham Road	602	151	836	1076	0.560	600	764	0.8	1.2	7.534	A
1 - Epperstone By-Pass	1109	277	509	1774	0.625	1107	928	1.0	1.6	5.377	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	411	103	1468	547	0.750	403	501	0.9	2.7	23.905	C
3 - A6097	1274	318	684	1536	0.829	1263	1187	1.8	4.5	12.703	B
4 - Nottingham Road	738	184	1018	964	0.766	730	930	1.2	3.1	14.997	B
1 - Epperstone By-Pass	1359	340	619	1692	0.803	1350	1129	1.6	3.9	10.271	B

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	411	103	1478	542	0.758	410	505	2.7	2.9	26.878	D
3 - A6097	1274	318	692	1531	0.832	1273	1196	4.5	4.7	13.838	B
4 - Nottingham Road	738	184	1026	958	0.770	737	938	3.1	3.2	16.172	C
1 - Epperstone By-Pass	1359	340	625	1688	0.805	1358	1139	3.9	4.0	10.881	B

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	335	84	1218	688	0.488	343	417	2.9	1.0	10.679	B
3 - A6097	1040	260	574	1613	0.645	1052	987	4.7	1.9	6.545	A
4 - Nottingham Road	602	151	849	1068	0.564	610	777	3.2	1.3	7.974	A
1 - Epperstone By-Pass	1109	277	517	1768	0.627	1118	942	4.0	1.7	5.620	A

## Existing Layout - 2037LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	50.95	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-11	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	403	100.000
3 - A6097		ONE HOUR	✓	1363	100.000
4 - Nottingham Road		ONE HOUR	✓	779	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	894	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	128	152	123
	3 - A6097	143	1	286	933
	4 - Nottingham Road	285	236	0	258
	1 - Epperstone By-Pass	168	598	127	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.56	10.36	1.3	B	370	555
3 - A6097	0.88	17.27	6.9	C	1251	1876
4 - Nottingham Road	1.11	183.16	48.2	F	715	1072
1 - Epperstone By-Pass	0.60	5.40	1.5	A	820	1231

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	303	76	721	966	0.314	302	446	0.0	0.5	5.403	A

3 - A6097	1026	257	302	1802	0.569	1021	721	0.0	1.3	4.580	A
4 - Nottingham Road	586	147	899	1037	0.566	581	423	0.0	1.3	7.817	A
1 - Epperstone By-Pass	673	168	497	1783	0.378	671	984	0.0	0.6	3.230	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Sowell Road	362	91	863	887	0.408	361	533	0.5	0.7	6.839	A
3 - A6097	1225	306	362	1760	0.696	1222	863	1.3	2.2	6.635	A
4 - Nottingham Road	700	175	1076	927	0.755	694	507	1.3	2.9	15.022	C
1 - Epperstone By-Pass	804	201	593	1711	0.470	803	1177	0.6	0.9	3.957	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Sowell Road	444	111	1030	793	0.559	441	619	0.7	1.2	10.164	B
3 - A6097	1501	375	442	1705	0.880	1484	1029	2.2	6.4	15.268	C
4 - Nottingham Road	858	214	1308	783	1.095	762	617	2.9	26.7	85.018	F
1 - Epperstone By-Pass	984	246	667	1657	0.594	982	1404	0.9	1.4	5.319	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Sowell Road	444	111	1034	791	0.561	444	625	1.2	1.3	10.361	B
3 - A6097	1501	375	444	1703	0.881	1499	1034	6.4	6.9	17.272	C
4 - Nottingham Road	858	214	1321	776	1.106	772	622	26.7	48.2	183.156	F
1 - Epperstone By-Pass	984	246	674	1651	0.596	984	1418	1.4	1.5	5.401	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Sowell Road	362	91	921	855	0.424	364	603	1.3	0.7	7.373	A
3 - A6097	1225	306	364	1759	0.697	1243	921	6.9	2.4	7.218	A
4 - Nottingham Road	700	175	1095	916	0.765	877	513	48.2	4.2	104.458	F
1 - Epperstone By-Pass	804	201	718	1619	0.497	806	1254	1.5	1.0	4.439	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	303	76	730	962	0.316	305	454	0.7	0.5	5.489	A
3 - A6097	1026	257	304	1800	0.570	1030	730	2.4	1.3	4.699	A
4 - Nottingham Road	586	147	908	1032	0.568	598	427	4.2	1.3	8.502	A
1 - Epperstone By-Pass	673	168	509	1774	0.379	675	997	1.0	0.6	3.278	A

## Existing Layout - 2037LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	4.95	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	42	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	320	100.000
3 - A6097		ONE HOUR	✓	818	100.000
4 - Nottingham Road		ONE HOUR	✓	550	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	641	100.000

## Origin-Destination Data



## Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	1	98	143	78
3 - A6097	106	2	241	469
4 - Nottingham Road	166	229	1	154
1 - Epperstone By-Pass	89	430	121	1

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.40	6.73	0.7	A	294	440
3 - A6097	0.52	4.25	1.1	A	751	1126
4 - Nottingham Road	0.53	6.66	1.1	A	505	757
1 - Epperstone By-Pass	0.41	3.48	0.7	A	588	882

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	241	60	588	1041	0.231	240	272	0.0	0.3	4.487	A
3 - A6097	616	154	259	1832	0.336	614	569	0.0	0.5	2.950	A
4 - Nottingham Road	414	104	493	1289	0.321	412	380	0.0	0.5	4.097	A
1 - Epperstone By-Pass	483	121	379	1871	0.258	481	527	0.0	0.3	2.588	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	288	72	704	976	0.295	287	325	0.3	0.4	5.223	A
3 - A6097	735	184	310	1796	0.409	735	682	0.5	0.7	3.389	A
4 - Nottingham Road	494	124	590	1229	0.402	494	454	0.5	0.7	4.891	A
1 - Epperstone By-Pass	576	144	453	1815	0.317	576	630	0.3	0.5	2.905	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	352	88	862	888	0.397	351	398	0.4	0.7	6.701	A
3 - A6097	901	225	379	1748	0.515	899	834	0.7	1.1	4.233	A
4 - Nottingham Road	606	151	722	1147	0.528	604	556	0.7	1.1	6.606	A
1 - Epperstone By-Pass	706	176	555	1740	0.406	705	771	0.5	0.7	3.474	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	352	88	863	887	0.397	352	399	0.7	0.7	6.735	A
3 - A6097	901	225	380	1748	0.515	901	836	1.1	1.1	4.249	A
4 - Nottingham Road	606	151	723	1146	0.528	606	557	1.1	1.1	6.657	A
1 - Epperstone By-Pass	706	176	556	1739	0.406	706	773	0.7	0.7	3.483	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	288	72	706	975	0.295	289	326	0.7	0.4	5.255	A
3 - A6097	735	184	311	1796	0.410	737	684	1.1	0.7	3.404	A
4 - Nottingham Road	494	124	592	1228	0.403	496	456	1.1	0.7	4.931	A
1 - Epperstone By-Pass	576	144	455	1814	0.318	577	633	0.7	0.5	2.912	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	241	60	591	1039	0.232	241	273	0.4	0.3	4.515	A
3 - A6097	616	154	260	1831	0.336	617	572	0.7	0.5	2.968	A

4 - Nottingham Road	414	104	495	1288	0.32 2	415	381	0.7	0.5	4.12 9	A
1 - Epperstone By-Pass	483	121	381	1869	0.25 8	483	529	0.5	0.3	2.59 9	A

## Existing Layout - 2037LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.10	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	32	100.000
3 - A6097		ONE HOUR	✓	80	100.000
4 - Nottingham Road		ONE HOUR	✓	53	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	63	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	10	14	8
3 - A6097	10	0	24	46
4 - Nottingham Road	16	22	0	15
1 - Epperstone By-Pass	9	42	12	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.79	0.0	A	29	44
3 - A6097	0.04	1.90	0.0	A	73	110
4 - Nottingham Road	0.04	2.41	0.0	A	49	73
1 - Epperstone By-Pass	0.03	1.76	0.0	A	58	87

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	24	6	57	1339	0.018	24	26	0.0	0.0	2.737	A
3 - A6097	60	15	26	1994	0.030	60	56	0.0	0.0	1.860	A
4 - Nottingham Road	40	10	48	1565	0.025	40	38	0.0	0.0	2.359	A
1 - Epperstone By-Pass	47	12	36	2125	0.022	47	52	0.0	0.0	1.731	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	29	7	68	1333	0.022	29	31	0.0	0.0	2.760	A
3 - A6097	72	18	31	1990	0.036	72	66	0.0	0.0	1.875	A
4 - Nottingham Road	48	12	58	1559	0.031	48	45	0.0	0.0	2.381	A
1 - Epperstone By-Pass	57	14	43	2120	0.027	57	62	0.0	0.0	1.743	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	35	9	84	1324	0.027	35	39	0.0	0.0	2.792	A
3 - A6097	88	22	37	1986	0.044	88	81	0.0	0.0	1.896	A
4 - Nottingham Road	58	15	70	1551	0.038	58	55	0.0	0.0	2.410	A
1 - Epperstone By-Pass	69	17	53	2113	0.033	69	76	0.0	0.0	1.760	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	35	9	84	1324	0.027	35	39	0.0	0.0	2.792	A
3 - A6097	88	22	37	1986	0.044	88	81	0.0	0.0	1.896	A
4 - Nottingham Road	58	15	70	1551	0.038	58	55	0.0	0.0	2.411	A
1 - Epperstone By-Pass	69	17	53	2113	0.033	69	76	0.0	0.0	1.760	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	29	7	68	1333	0.022	29	31	0.0	0.0	2.760	A
3 - A6097	72	18	31	1990	0.036	72	67	0.0	0.0	1.878	A
4 - Nottingham Road	48	12	58	1559	0.031	48	45	0.0	0.0	2.381	A
1 - Epperstone By-Pass	57	14	43	2120	0.027	57	62	0.0	0.0	1.746	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	24	6	57	1339	0.018	24	26	0.0	0.0	2.737	A
3 - A6097	60	15	26	1994	0.030	60	56	0.0	0.0	1.860	A
4 - Nottingham Road	40	10	48	1565	0.026	40	38	0.0	0.0	2.361	A
1 - Epperstone By-Pass	47	12	36	2125	0.022	47	52	0.0	0.0	1.734	A

## Existing Layout - 2023HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D21 - 2023HG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	46.00	E

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-9	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	436	100.000
3 - A6097		ONE HOUR	✓	1277	100.000
4 - Nottingham Road		ONE HOUR	✓	741	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1390	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	82	274	80
	3 - A6097	128	0	316	833
	4 - Nottingham Road	218	270	1	252
	1 - Epperstone By-Pass	185	819	384	2

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	1.04	132.72	18.4	F	436	436
3 - A6097	0.96	41.64	15.4	E	1277	1277
4 - Nottingham Road	0.91	39.37	8.3	E	741	741
1 - Epperstone By-Pass	0.93	26.35	10.5	D	1390	1390

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	392	98	1322	630	0.623	389	475	0.8	1.6	14.749	B
3 - A6097	1148	287	662	1551	0.740	1143	1048	1.4	2.7	8.697	A
4 - Nottingham Road	666	167	933	1016	0.656	663	872	1.0	1.8	10.089	B
1 - Epperstone By-Pass	1250	312	552	1742	0.717	1245	1044	1.4	2.5	7.183	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	480	120	1595	476	1.008	442	571	1.6	11.1	71.047	F
3 - A6097	1406	352	778	1471	0.956	1369	1259	2.7	12.1	28.223	D
4 - Nottingham Road	816	204	1113	904	0.902	796	1033	1.8	6.9	28.998	D
1 - Epperstone By-Pass	1530	383	662	1660	0.922	1504	1247	2.5	9.1	20.375	C

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	480	120	1618	463	1.036	451	581	11.1	18.4	132.725	F
3 - A6097	1406	352	791	1462	0.962	1393	1278	12.1	15.4	41.645	E
4 - Nottingham Road	816	204	1133	892	0.915	810	1050	6.9	8.3	39.365	E
1 - Epperstone By-Pass	1530	383	674	1651	0.927	1525	1269	9.1	10.5	26.347	D

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	392	98	1363	606	0.646	458	494	18.4	2.0	34.088	D
3 - A6097	1148	287	728	1506	0.762	1196	1092	15.4	3.4	13.301	B
4 - Nottingham Road	666	167	986	983	0.677	691	938	8.3	2.2	13.265	B
1 - Epperstone By-Pass	1250	312	576	1724	0.725	1281	1101	10.5	2.7	8.661	A

## Existing Layout - 2023HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	206.64	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-23	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)



Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	470	100.000
3 - A6097		ONE HOUR	✓	1534	100.000
4 - Nottingham Road		ONE HOUR	✓	904	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1017	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	144	179	147
	3 - A6097	164	1	307	1062
	4 - Nottingham Road	340	257	0	307
	1 - Epperstone By-Pass	201	668	147	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.68	14.97	2.1	B	431	647
3 - A6097	1.02	81.33	40.3	F	1408	2111
4 - Nottingham Road	1.45	744.25	177.9	F	830	1244
1 - Epperstone By-Pass	0.67	6.36	2.0	A	933	1400

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	354	88	803	920	0.384	351	526	0.0	0.6	6.302	A

3 - A6097	1155	289	355	1765	0.654	1147	800	0.0	1.9	5.762	A
4 - Nottingham Road	681	170	1028	957	0.711	671	474	0.0	2.3	12.227	B
1 - Epperstone By-Pass	766	191	567	1731	0.442	763	1133	0.0	0.8	3.705	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	423	106	953	836	0.505	421	618	0.6	1.0	8.638	A
3 - A6097	1379	345	425	1716	0.803	1371	950	1.9	3.9	10.189	B
4 - Nottingham Road	813	203	1229	832	0.976	775	567	2.3	11.8	46.040	E
1 - Epperstone By-Pass	914	229	659	1662	0.550	913	1345	0.8	1.2	4.792	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	517	129	1096	756	0.684	513	655	1.0	2.1	14.557	B
3 - A6097	1689	422	519	1651	1.023	1601	1090	3.9	25.8	43.465	E
4 - Nottingham Road	995	249	1442	700	1.421	699	677	11.8	86.0	265.921	F
1 - Epperstone By-Pass	1120	280	634	1681	0.666	1117	1507	1.2	2.0	6.343	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	517	129	1094	757	0.683	517	653	2.1	2.1	14.972	B
3 - A6097	1689	422	522	1649	1.024	1631	1090	25.8	40.3	81.334	F
4 - Nottingham Road	995	249	1468	685	1.454	684	685	86.0	163.7	637.859	F
1 - Epperstone By-Pass	1120	280	627	1686	0.664	1120	1525	2.0	2.0	6.360	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	423	106	952	837	0.505	427	628	2.1	1.0	8.863	A
3 - A6097	1379	345	429	1713	0.805	1522	949	40.3	4.5	30.277	D
4 - Nottingham Road	813	203	1352	756	1.075	756	600	163.7	177.9	744.247	F
1 - Epperstone By-Pass	914	229	663	1659	0.551	917	1445	2.0	1.2	4.871	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	354	88	884	875	0.404	355	630	1.0	0.7	6.942	A
3 - A6097	1155	289	358	1763	0.655	1165	881	4.5	1.9	6.123	A
4 - Nottingham Road	681	170	1044	947	0.718	942	479	177.9	112.5	555.964	F
1 - Epperstone By-Pass	766	191	748	1596	0.480	767	1238	1.2	0.9	4.346	A

## Existing Layout - 2023HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	6.12	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	27	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	370	100.000
3 - A6097		ONE HOUR	✓	902	100.000
4 - Nottingham Road		ONE HOUR	✓	619	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	720	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	1	109	168	92
From 3 - A6097	119	3	258	522
From 4 - Nottingham Road	195	242	2	180
From 1 - Epperstone By-Pass	105	473	141	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0
From 1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.49	8.35	0.9	A	340	509
3 - A6097	0.58	5.08	1.4	A	828	1242
4 - Nottingham Road	0.62	8.79	1.6	A	568	852
1 - Epperstone By-Pass	0.47	4.00	0.9	A	661	991

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	279	70	647	1008	0.276	277	315	0.0	0.4	4.914	A
3 - A6097	679	170	304	1801	0.377	677	620	0.0	0.6	3.196	A
4 - Nottingham Road	466	117	554	1252	0.372	464	427	0.0	0.6	4.555	A
1 - Epperstone By-Pass	542	136	421	1839	0.295	540	596	0.0	0.4	2.768	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	333	83	774	937	0.355	332	377	0.4	0.5	5.946	A
3 - A6097	811	203	363	1759	0.461	810	742	0.6	0.8	3.790	A
4 - Nottingham Road	556	139	663	1184	0.470	555	511	0.6	0.9	5.716	A
1 - Epperstone By-Pass	647	162	504	1777	0.364	647	714	0.4	0.6	3.182	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	407	102	947	840	0.485	406	461	0.5	0.9	8.263	A
3 - A6097	993	248	445	1703	0.583	991	908	0.8	1.4	5.043	A
4 - Nottingham Road	682	170	811	1092	0.624	679	625	0.9	1.6	8.643	A
1 - Epperstone By-Pass	793	198	616	1694	0.468	792	873	0.6	0.9	3.985	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	407	102	949	839	0.486	407	462	0.9	0.9	8.346	A
3 - A6097	993	248	446	1702	0.584	993	910	1.4	1.4	5.079	A
4 - Nottingham Road	682	170	813	1091	0.625	681	626	1.6	1.6	8.786	A
1 - Epperstone By-Pass	793	198	619	1692	0.468	793	875	0.9	0.9	4.002	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	333	83	777	935	0.356	334	379	0.9	0.6	6.007	A
3 - A6097	811	203	365	1758	0.461	813	746	1.4	0.9	3.818	A
4 - Nottingham Road	556	139	665	1182	0.471	559	513	1.6	0.9	5.809	A
1 - Epperstone By-Pass	647	162	508	1775	0.365	648	717	0.9	0.6	3.201	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	279	70	650	1006	0.277	279	317	0.6	0.4	4.955	A
3 - A6097	679	170	306	1799	0.377	680	624	0.9	0.6	3.218	A

4 - Nottingham Road	466	117	557	1250	0.37 3	467	429	0.9	0.6	4.60 7	A
1 - Epperstone By-Pass	542	136	424	1837	0.29 5	543	600	0.6	0.4	2.78 4	A

## Existing Layout - 2023HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.12	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	36	100.000
3 - A6097		ONE HOUR	✓	88	100.000
4 - Nottingham Road		ONE HOUR	✓	61	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	70	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	11	16	9
3 - A6097	12	0	25	51
4 - Nottingham Road	19	24	0	18
1 - Epperstone By-Pass	10	46	14	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.81	0.0	A	33	50
3 - A6097	0.05	1.91	0.1	A	81	121
4 - Nottingham Road	0.04	2.43	0.0	A	56	84
1 - Epperstone By-Pass	0.04	1.77	0.0	A	64	96

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	27	7	63	1335	0.020	27	31	0.0	0.0	2.750	A
3 - A6097	66	17	29	1991	0.033	66	61	0.0	0.0	1.869	A
4 - Nottingham Road	46	11	54	1561	0.029	46	41	0.0	0.0	2.375	A
1 - Epperstone By-Pass	53	13	41	2122	0.025	53	59	0.0	0.0	1.739	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	32	8	75	1329	0.024	32	37	0.0	0.0	2.776	A
3 - A6097	79	20	35	1987	0.040	79	73	0.0	0.0	1.885	A
4 - Nottingham Road	55	14	65	1555	0.035	55	49	0.0	0.0	2.399	A
1 - Epperstone By-Pass	63	16	49	2115	0.030	63	70	0.0	0.0	1.753	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise d level of service
2 - Southwell Road	40	10	92	1319	0.030	40	45	0.0	0.0	2.813	A
3 - A6097	97	24	43	1982	0.049	97	89	0.0	0.1	1.908	A
4 - Nottingham Road	67	17	79	1546	0.043	67	61	0.0	0.0	2.434	A
1 - Epperstone By-Pass	77	19	61	2107	0.037	77	86	0.0	0.0	1.772	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise d level of service
2 - Southwell Road	40	10	92	1319	0.030	40	45	0.0	0.0	2.813	A
3 - A6097	97	24	43	1982	0.049	97	89	0.1	0.1	1.908	A
4 - Nottingham Road	67	17	79	1546	0.043	67	61	0.0	0.0	2.434	A
1 - Epperstone By-Pass	77	19	61	2107	0.037	77	86	0.0	0.0	1.772	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise d level of service
2 - Southwell Road	32	8	76	1328	0.024	32	37	0.0	0.0	2.779	A
3 - A6097	79	20	35	1987	0.040	79	73	0.1	0.0	1.885	A
4 - Nottingham Road	55	14	65	1555	0.035	55	49	0.0	0.0	2.401	A
1 - Epperstone By-Pass	63	16	49	2115	0.030	63	70	0.0	0.0	1.755	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalise d level of service
2 - Southwell Road	27	7	63	1335	0.020	27	31	0.0	0.0	2.753	A
3 - A6097	66	17	29	1991	0.033	66	61	0.0	0.0	1.872	A
4 - Nottingham Road	46	11	54	1561	0.029	46	41	0.0	0.0	2.375	A
1 - Epperstone By-Pass	53	13	41	2121	0.025	53	59	0.0	0.0	1.742	A

## Existing Layout - 2037HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
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Warning	Demand Sets	D25 - 2037HG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	200.38	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-20	2 - Southwell Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	482	100.000
3 - A6097		ONE HOUR	✓	1444	100.000
4 - Nottingham Road		ONE HOUR	✓	881	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1577	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	90	306	86
	3 - A6097	140	0	372	932
	4 - Nottingham Road	249	334	1	297
	1 - Epperstone By-Pass	202	931	442	2

## Vehicle Mix

## Heavy Vehicle Percentages

From	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0
1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	1.34	595.69	77.5	F	482	482
3 - A6097	1.08	146.21	71.6	F	1444	1444
4 - Nottingham Road	1.11	193.93	55.7	F	881	881
1 - Epperstone By-Pass	1.07	132.75	71.4	F	1577	1577

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	433	108	1523	517	0.838	421	525	1.2	4.2	34.237	D
3 - A6097	1298	325	739	1498	0.867	1284	1205	2.2	5.7	15.849	C
4 - Nottingham Road	792	198	1030	956	0.828	781	993	1.6	4.3	19.523	C
1 - Epperstone By-Pass	1418	354	642	1675	0.847	1406	1169	2.1	5.1	12.848	B

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	531	133	1719	407	1.305	401	589	4.2	36.5	203.906	F
3 - A6097	1590	397	777	1472	1.080	1449	1344	5.7	40.9	68.602	F
4 - Nottingham Road	970	242	1150	882	1.100	864	1076	4.3	30.9	87.651	F
1 - Epperstone By-Pass	1736	434	713	1622	1.070	1595	1300	5.1	40.4	61.403	F

#### 08:30 - 08:45

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	531	133	1737	397	1.337	396	595	36.5	70.1	496.740	F
3 - A6097	1590	397	777	1472	1.080	1467	1356	40.9	71.6	146.211	F
4 - Nottingham Road	970	242	1162	874	1.110	871	1082	30.9	55.7	190.166	F
1 - Epperstone By-Pass	1736	434	719	1617	1.074	1612	1313	40.4	71.4	132.752	F

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	433	108	1723	404	1.071	404	590	70.1	77.5	595.692	F
3 - A6097	1298	325	779	1470	0.883	1450	1347	71.6	33.7	133.499	F
4 - Nottingham Road	792	198	1150	881	0.899	866	1079	55.7	37.2	193.930	F
1 - Epperstone By-Pass	1418	354	715	1621	0.875	1599	1302	71.4	26.2	113.222	F

## Existing Layout - 2037HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	634.45	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-33	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	535	100.000
3 - A6097		ONE HOUR	✓	1770	100.000
4 - Nottingham Road		ONE HOUR	✓	1067	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	1180	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	162	210	163
	3 - A6097	182	1	373	1214
	4 - Nottingham Road	388	316	0	363
	1 - Epperstone By-Pass	223	772	184	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.89	43.52	6.6	E	491	736
3 - A6097	1.23	405.56	193.3	F	1624	2436
4 - Nottingham Road	1.66	2001.76	392.9	F	979	1469
1 - Epperstone By-Pass	0.77	9.35	3.3	A	1083	1624

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	403	101	946	840	0.479	399	584	0.0	0.9	8.099	A

3 - A6097	1333	333	417	1722	0.774	1319	929	0.0	3.3	8.683	A
4 - Nottingham Road	803	201	1164	873	0.920	773	573	0.0	7.7	30.002	D
1 - Epperstone By-Pass	888	222	646	1672	0.531	884	1290	0.0	1.1	4.544	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	481	120	1078	766	0.628	478	629	0.9	1.6	12.371	B
3 - A6097	1591	398	499	1665	0.956	1554	1057	3.3	12.6	26.339	D
4 - Nottingham Road	959	240	1373	743	1.290	739	680	7.7	62.7	186.644	F
1 - Epperstone By-Pass	1061	265	648	1670	0.635	1058	1464	1.1	1.7	5.863	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	589	147	1259	665	0.886	572	665	1.6	5.8	34.253	D
3 - A6097	1949	487	602	1593	1.223	1589	1230	12.6	102.6	138.650	F
4 - Nottingham Road	1175	294	1430	708	1.659	708	761	62.7	179.4	624.286	F
1 - Epperstone By-Pass	1299	325	631	1683	0.772	1293	1506	1.7	3.2	9.094	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	589	147	1264	662	0.890	586	666	5.8	6.6	43.516	E
3 - A6097	1949	487	612	1586	1.229	1586	1237	102.6	193.3	337.404	F
4 - Nottingham Road	1175	294	1431	707	1.661	707	767	179.4	296.3	1217.717	F
1 - Epperstone By-Pass	1299	325	631	1683	0.772	1299	1508	3.2	3.3	9.345	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	481	120	1072	770	0.625	501	623	6.6	1.7	14.292	B
3 - A6097	1591	398	516	1653	0.963	1644	1056	193.3	180.1	405.564	F
4 - Nottingham Road	959	240	1451	695	1.381	695	709	296.3	362.4	1729.051	F
1 - Epperstone By-Pass	1061	265	628	1685	0.630	1067	1518	3.3	1.7	5.886	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	403	101	925	852	0.473	406	592	1.7	0.9	8.132	A
3 - A6097	1333	333	423	1718	0.776	1708	908	180.1	86.1	281.879	F
4 - Nottingham Road	803	201	1473	681	1.179	681	658	362.4	392.9	2001.759	F
1 - Epperstone By-Pass	888	222	626	1687	0.527	891	1528	1.7	1.1	4.538	A

## Existing Layout - 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	8.92	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	11	4 - Nottingham Road

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	411	100.000
3 - A6097		ONE HOUR	✓	1021	100.000
4 - Nottingham Road		ONE HOUR	✓	720	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	820	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	1	120	190	100
From 3 - A6097	130	3	303	585
From 4 - Nottingham Road	219	288	2	211
From 1 - Epperstone By-Pass	114	536	169	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0
From 1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.60	11.92	1.5	B	377	566
3 - A6097	0.68	6.75	2.1	A	937	1405
4 - Nottingham Road	0.77	14.77	3.2	B	661	991
1 - Epperstone By-Pass	0.56	4.98	1.2	A	752	1129

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	309	77	749	951	0.325	308	348	0.0	0.5	5.579	A
3 - A6097	769	192	347	1771	0.434	766	710	0.0	0.8	3.572	A
4 - Nottingham Road	542	136	615	1214	0.447	539	498	0.0	0.8	5.311	A
1 - Epperstone By-Pass	617	154	481	1794	0.344	615	672	0.0	0.5	3.048	A

#### 13:00 - 13:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
2 - Southwell Road	369	92	897	868	0.426	368	416	0.5	0.7	7.191	A
3 - A6097	918	229	415	1723	0.533	916	850	0.8	1.1	4.455	A
4 - Nottingham Road	647	162	736	1138	0.569	645	596	0.8	1.3	7.270	A
1 - Epperstone By-Pass	737	184	576	1724	0.428	736	805	0.5	0.7	3.642	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	453	113	1095	756	0.598	450	508	0.7	1.4	11.624	B
3 - A6097	1124	281	507	1659	0.678	1120	1038	1.1	2.1	6.637	A
4 - Nottingham Road	793	198	900	1037	0.764	786	728	1.3	3.0	13.953	B
1 - Epperstone By-Pass	903	226	703	1630	0.554	901	983	0.7	1.2	4.925	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	453	113	1100	754	0.600	452	511	1.4	1.5	11.920	B
3 - A6097	1124	281	510	1657	0.678	1124	1042	2.1	2.1	6.747	A
4 - Nottingham Road	793	198	903	1035	0.766	792	731	3.0	3.2	14.767	B
1 - Epperstone By-Pass	903	226	708	1626	0.555	903	987	1.2	1.2	4.977	A

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	369	92	903	865	0.427	372	420	1.5	0.8	7.357	A
3 - A6097	918	229	419	1721	0.533	922	856	2.1	1.2	4.525	A
4 - Nottingham Road	647	162	740	1136	0.570	655	600	3.2	1.4	7.593	A
1 - Epperstone By-Pass	737	184	584	1718	0.429	739	811	1.2	0.8	3.685	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	309	77	754	948	0.326	310	350	0.8	0.5	5.656	A
3 - A6097	769	192	350	1769	0.435	770	715	1.2	0.8	3.612	A



4 - Nottingham Road	542	136	619	1211	0.44 8	544	501	1.4	0.8	5.41 3	A
1 - Epperstone By-Pass	617	154	486	1791	0.34 5	618	677	0.8	0.5	3.07 1	A

## Existing Layout - 2037HG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 11	Standard Roundabout		2, 3, 4, 1	2.15	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
2 - Southwell Road		ONE HOUR	✓	41	100.000
3 - A6097		ONE HOUR	✓	100	100.000
4 - Nottingham Road		ONE HOUR	✓	70	100.000
1 - Epperstone By-Pass		ONE HOUR	✓	80	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	12	19	10
	3 - A6097	13	0	30	57
	4 - Nottingham Road	21	28	0	21
	1 - Epperstone By-Pass	11	52	17	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		2 - Southwell Road	3 - A6097	4 - Nottingham Road	1 - Epperstone By-Pass
From	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0
	1 - Epperstone By-Pass	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
2 - Southwell Road	0.03	2.84	0.0	A	38	56
3 - A6097	0.06	1.93	0.1	A	92	138
4 - Nottingham Road	0.05	2.46	0.1	A	64	96
1 - Epperstone By-Pass	0.04	1.79	0.0	A	73	110

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	31	8	73	1330	0.023	31	34	0.0	0.0	2.770	A
3 - A6097	75	19	35	1988	0.038	75	69	0.0	0.0	1.881	A
4 - Nottingham Road	53	13	60	1558	0.034	53	50	0.0	0.0	2.391	A
1 - Epperstone By-Pass	60	15	47	2118	0.028	60	66	0.0	0.0	1.748	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	37	9	87	1322	0.028	37	40	0.0	0.0	2.800	A
3 - A6097	90	22	41	1983	0.045	90	83	0.0	0.0	1.900	A
4 - Nottingham Road	63	16	72	1550	0.041	63	59	0.0	0.0	2.419	A
1 - Epperstone By-Pass	72	18	56	2111	0.034	72	79	0.0	0.0	1.764	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	45	11	107	1311	0.034	45	50	0.0	0.0	2.843	A
3 - A6097	110	28	51	1976	0.056	110	101	0.0	0.1	1.928	A
4 - Nottingham Road	77	19	88	1540	0.050	77	73	0.0	0.1	2.459	A
1 - Epperstone By-Pass	88	22	68	2101	0.042	88	97	0.0	0.0	1.787	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	45	11	107	1311	0.034	45	50	0.0	0.0	2.843	A
3 - A6097	110	28	51	1976	0.056	110	101	0.1	0.1	1.928	A
4 - Nottingham Road	77	19	88	1540	0.050	77	73	0.1	0.1	2.459	A
1 - Epperstone By-Pass	88	22	68	2101	0.042	88	97	0.0	0.0	1.787	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	37	9	87	1322	0.028	37	40	0.0	0.0	2.803	A
3 - A6097	90	22	41	1983	0.045	90	83	0.1	0.0	1.900	A
4 - Nottingham Road	63	16	72	1550	0.041	63	59	0.1	0.0	2.420	A
1 - Epperstone By-Pass	72	18	56	2111	0.034	72	79	0.0	0.0	1.767	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
2 - Southwell Road	31	8	73	1330	0.023	31	34	0.0	0.0	2.772	A
3 - A6097	75	19	35	1988	0.038	75	69	0.0	0.0	1.884	A
4 - Nottingham Road	53	13	60	1558	0.034	53	50	0.0	0.0	2.393	A
1 - Epperstone By-Pass	60	15	47	2117	0.028	60	66	0.0	0.0	1.751	A

# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.1.7462  
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**Filename:** Junction 6 (Lowdham Proposed) 45-50 ICD test final\_V4.j9

**Path:** L:\DATA\Projects\CH\_TP\60625845\_A614 MRN DfT responses\08\_Models\Junction Models\6-Lowdham

**Report generation date:** 04/12/2020 10:19:03

- »Proposed Layout - 2023, AM
- »Proposed Layout - 2023, PM
- »Proposed Layout - 2023, IP
- »Proposed Layout - 2023, OP
- »Proposed Layout - 2037, AM
- »Proposed Layout - 2037, PM
- »Proposed Layout - 2037, IP
- »Proposed Layout - 2037, OP
- »Proposed Layout - 2037 final, AM
- »Proposed Layout - 2037 final, PM
- »Proposed Layout - 2037 final, IP
- »Proposed Layout - 2037 final, OP
- »Proposed Layout - 2023LG, AM
- »Proposed Layout - 2023LG, PM
- »Proposed Layout - 2023LG, IP
- »Proposed Layout - 2023LG, OP
- »Proposed Layout - 2037LG, AM
- »Proposed Layout - 2037LG, PM
- »Proposed Layout - 2037LG, IP
- »Proposed Layout - 2037LG, OP
- »Proposed Layout - 2023HG, AM
- »Proposed Layout - 2023HG, PM
- »Proposed Layout - 2023HG, IP
- »Proposed Layout - 2023HG, OP
- »Proposed Layout - 2037HG, AM
- »Proposed Layout - 2037HG, PM
- »Proposed Layout - 2037HG, IP
- »Proposed Layout - 2037HG, OP

### Summary of junction performance

	AM					PM					IP					OP								
	Se t ID	Qu e u e (P)	De l a y (s)	R F C	L O S	Jun ctio n	Se t ID	Qu e u e (P)	De l a y (s)	R F C	L O S	Jun ctio n	Se t ID	Qu e u e (P)	De l a y (s)	R F C	L O S	Jun ctio n	Se t ID	Qu e u e (P)	De l a y (s)	R F C	L O S	Jun ctio n

		CU			Delay (s)		CU			Delay (s)		CU			Delay (s)		CU			Delay (s)				
<b>Proposed Layout - 2023</b>																								
1 - Epperstone By-Pass	D1	5.4	13.77	0.85	B	12.35	D2	1.9	6.59	0.66	A	11.39	D3	0.7	3.60	0.43	A	3.75	D4	0.0	1.87	0.03	A	1.86
2 - Southwell Road		2.1	16.77	0.68	C			1.1	8.41	0.53	A			0.6	5.48	0.37	A			0.0	2.46	0.03	A	
3 - A6097		5.2	14.55	0.85	B			8.0	18.97	0.90	C			1.1	4.07	0.52	A			0.0	1.90	0.04	A	
4 - Nottingham Road		0.7	3.30	0.42	A			1.4	5.49	0.59	A			0.4	2.44	0.31	A			0.0	1.41	0.02	A	
<b>Proposed Layout - 2037</b>																								
1 - Epperstone By-Pass	D5	7.9	19.83	0.90	C	17.09	D6	2.2	7.20	0.69	A	15.12	D7	0.8	3.79	0.45	A	3.97	D8	0.0	1.87	0.04	A	1.86
2 - Southwell Road		2.8	22.48	0.74	C			1.2	9.17	0.56	A			0.6	5.81	0.39	A			0.0	2.47	0.03	A	
3 - A6097		7.5	20.26	0.89	C			11.9	27.40	0.94	D			1.2	4.34	0.55	A			0.1	1.91	0.05	A	
4 - Nottingham Road		0.8	3.55	0.45	A			1.5	5.88	0.61	A			0.5	2.53	0.32	A			0.0	1.42	0.02	A	
<b>Proposed Layout - 2037 final</b>																								
1 - Epperstone By-Pass	D9	16.5	39.49	0.96	E	30.55	D10	2.9	9.19	0.75	A	29.51	D11	0.9	4.07	0.48	A	4.24	D12	0.0	1.88	0.04	A	1.86
2 - Southwell Road		4.9	39.31	0.85	E			1.7	11.55	0.63	B			0.7	6.32	0.42	A			0.0	2.47	0.03	A	
3 - A6097		13.0	34.19	0.95	D			30.2	61.76	1.00	F			1.3	4.67	0.57	A			0.1	1.91	0.05	A	
4 - Nottingham Road		1.0	3.90	0.49	A			2.1	7.37	0.68	A			0.5	2.66	0.35	A			0.0	1.42	0.03	A	
<b>Proposed Layout - 2023LG</b>																								
1 - Epperstone By-Pass	D13	3.8	10.03	0.79	B	9.12	D14	1.5	5.63	0.61	A	8.18	D15	0.7	3.39	0.40	A	3.52	D16	0.0	1.86	0.03	A	1.85
2 - Southwell Road		1.5	12.65	0.60	B			0.9	7.29	0.48	A			0.5	5.10	0.34	A			0.0	2.45	0.02	A	
3 - A6097		3.6	10.46	0.79	B			5.0	12.23	0.84	B			0.9	3.79	0.49	A			0.0	1.90	0.04	A	
4 - Nottingham Road		0.6	3.06	0.38	A			1.1	4.64	0.53	A			0.4	2.34	0.28	A			0.0	1.41	0.02	A	
<b>Proposed Layout - 2037LG</b>																								
1 - Epperstone By-Pass	D17	3.6	9.76	0.79	A	8.75	D18	1.5	5.41	0.60	A	7.75	D19	0.7	3.36	0.40	A	3.48	D20	0.0	1.86	0.03	A	1.85
2 - Southwell Road		1.4	12.16	0.58	B			0.9	7.08	0.47	A			0.5	5.03	0.33	A			0.0	2.45	0.02	A	
3 - A6097		3.4	9.89	0.78	A			4.6	11.41	0.83	B			0.9	3.75	0.48	A			0.0	1.90	0.04	A	
4 - Nottingham Road		0.6	3.05	0.38	A			1.0	4.37	0.51	A			0.4	2.32	0.28	A			0.0	1.41	0.02	A	

Proposed Layout - 2023HG																								
1 - Epperstone By-Pass		8.6	21.55	0.91	C			2.4	7.92	0.71	A			0.8	3.83	0.46	A			0.0	1.87	0.04	A	
2 - Southwell Road	D2 1	3.2	24.85	0.77	C	19.01	D2 2	1.4	9.92	0.59	A	19.12	D2 3	0.7	5.90	0.40	A	4.02	D2 4	0.0	2.47	0.03	A	1.86
3 - A6097		8.5	23.23	0.91	C			16.3	36.71	0.96	E			1.2	4.39	0.55	A			0.1	1.91	0.05	A	
4 - Nottingham Road		0.8	3.57	0.45	A			1.8	6.65	0.65	A			0.5	2.56	0.33	A			0.0	1.41	0.03	A	
Proposed Layout - 2037HG																								
1 - Epperstone By-Pass		75.4	139.08	1.08	F			6.2	18.09	0.87	C			1.2	4.71	0.54	A			0.0	1.89	0.04	A	
2 - Southwell Road	D2 5	13.9	96.55	0.99	F	97.32	D2 6	3.4	21.74	0.78	C	102.90	D2 7	0.9	7.56	0.49	A	4.98	D2 8	0.0	2.49	0.03	A	1.87
3 - A6097		52.7	108.61	1.05	F			137.1	239.88	1.15	F			1.7	5.60	0.64	A			0.1	1.93	0.05	A	
4 - Nottingham Road		1.2	4.48	0.55	A			3.2	10.18	0.77	B			0.6	2.94	0.39	A			0.0	1.42	0.03	A	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

## File summary

### File Description

Title	A6097/ A612 rdbt 45/50m ICD - final
Location	Lowdham
Site number	Junction 11
Date	04/04/2013
Version	
Status	45-50m ICD
Identifier	
Client	
Jobnumber	90372
Enumerator	T Nichol
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15		✓
D3	2023	IP	ONE HOUR	12:15	13:45	15		✓
D4	2023	OP	ONE HOUR	22:45	00:15	15		✓
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓	✓
D6	2037	PM	ONE HOUR	16:45	18:15	15		✓
D7	2037	IP	ONE HOUR	12:15	13:45	15		✓
D8	2037	OP	ONE HOUR	22:45	00:15	15		✓
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓	✓
D10	2037 final	PM	ONE HOUR	16:45	18:15	15		✓
D11	2037 final	IP	ONE HOUR	12:15	13:45	15		✓
D12	2037 final	OP	ONE HOUR	22:45	00:15	15		✓
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15		✓
D15	2023LG	IP	ONE HOUR	12:15	13:45	15		✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15		✓
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D18	2037LG	PM	ONE HOUR	16:45	18:15	15		✓
D19	2037LG	IP	ONE HOUR	12:15	13:45	15		✓
D20	2037LG	OP	ONE HOUR	22:45	00:15	15		✓
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D22	2023HG	PM	ONE HOUR	16:45	18:15	15		✓
D23	2023HG	IP	ONE HOUR	12:15	13:45	15		✓
D24	2023HG	OP	ONE HOUR	22:45	00:15	15		✓
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D26	2037HG	PM	ONE HOUR	16:45	18:15	15		✓
D27	2037HG	IP	ONE HOUR	12:15	13:45	15		✓
D28	2037HG	OP	ONE HOUR	22:45	00:15	15		✓

### Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed Layout	✓	100.000	100.000

## Proposed Layout - 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D1 - 2023, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	12.35	B

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	Epperstone By-Pass	
2	Southwell Road	
3	A6097	
4	Nottingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Epperstone By-Pass	7.20	7.20	0.0	29.0	45.0	35.0	
2 - Southwell Road	3.50	7.00	10.0	43.0	50.0	35.0	
3 - A6097	7.00	7.00	0.0	22.0	45.0	30.0	
4 - Nottingham Road	7.00	10.50	20.0	50.0	50.0	45.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Epperstone By-Pass	0.720	2177
2 - Southwell Road	0.587	1574
3 - A6097	0.713	2130
4 - Nottingham Road	0.798	2737

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1320	100.000
2 - Southwell Road		ONE HOUR	✓	412	100.000
3 - A6097		ONE HOUR	✓	1214	100.000
4 - Nottingham Road		ONE HOUR	✓	705	100.000

## Origin-Destination Data



## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	175	779	364
From 2 - Southwell Road	75	0	78	259
From 3 - A6097	792	122	0	300
From 4 - Nottingham Road	240	206	258	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.85	13.77	5.4	B	1320	1320
2 - Southwell Road	0.68	16.77	2.1	C	412	412
3 - A6097	0.85	14.55	5.2	B	1214	1214
4 - Nottingham Road	0.42	3.30	0.7	A	705	705

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1187	297	527	1797	0.660	1184	995	1.1	1.9	5.838	A
2 - Southwell Road	370	93	1259	835	0.444	369	451	0.5	0.8	7.709	A
3 - A6097	1091	273	628	1682	0.649	1088	1000	1.1	1.8	6.031	A
4 - Nottingham Road	634	158	888	2028	0.313	633	828	0.3	0.5	2.581	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1453	363	644	1713	0.849	1440	1212	1.9	5.1	12.662	B
2 - Southwell Road	454	113	1534	673	0.674	449	551	0.8	2.0	15.720	C
3 - A6097	1337	334	764	1585	0.843	1324	1219	1.8	4.9	13.204	B
4 - Nottingham Road	776	194	1081	1874	0.414	775	1008	0.5	0.7	3.272	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1453	363	646	1711	0.849	1452	1220	5.1	5.4	13.771	B
2 - Southwell Road	454	113	1545	667	0.680	453	554	2.0	2.1	16.772	C
3 - A6097	1337	334	771	1580	0.846	1336	1227	4.9	5.2	14.546	B
4 - Nottingham Road	776	194	1090	1867	0.416	776	1017	0.7	0.7	3.300	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1187	297	530	1795	0.661	1200	1007	5.4	2.0	6.180	A
2 - Southwell Road	370	93	1274	826	0.448	375	456	2.1	0.8	8.071	A
3 - A6097	1091	273	638	1675	0.651	1105	1012	5.2	1.9	6.444	A
4 - Nottingham Road	634	158	902	2017	0.314	635	841	0.7	0.5	2.607	A

## Proposed Layout - 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	11.39	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	963	100.000
2 - Southwell Road		ONE HOUR	✓	444	100.000
3 - A6097		ONE HOUR	✓	1451	100.000
4 - Nottingham Road		ONE HOUR	✓	854	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	190	633	139
	2 - Southwell Road	138	0	137	169
	3 - A6097	1005	155	1	290
	4 - Nottingham Road	290	321	243	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.66	6.59	1.9	A	884	1325
2 - Southwell Road	0.53	8.41	1.1	A	407	611
3 - A6097	0.90	18.97	8.0	C	1331	1997
4 - Nottingham Road	0.59	5.49	1.4	A	784	1175

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	725	181	540	1788	0.406	722	1075	0.0	0.7	3.370	A
2 - Southwell Road	334	84	763	1126	0.297	333	500	0.0	0.4	4.526	A
3 - A6097	1092	273	335	1892	0.578	1087	761	0.0	1.4	4.446	A
4 - Nottingham Road	643	161	974	1960	0.328	641	448	0.0	0.5	2.726	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	866	216	646	1711	0.506	864	1286	0.7	1.0	4.243	A
2 - Southwell Road	399	100	913	1038	0.384	398	598	0.4	0.6	5.618	A
3 - A6097	1304	326	401	1844	0.707	1300	910	1.4	2.4	6.570	A
4 - Nottingham Road	768	192	1165	1807	0.425	767	536	0.5	0.7	3.457	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1060	265	789	1609	0.659	1057	1563	1.0	1.9	6.481	A
2 - Southwell Road	489	122	1116	919	0.532	487	729	0.6	1.1	8.293	A
3 - A6097	1598	399	490	1781	0.897	1577	1113	2.4	7.4	16.302	C
4 - Nottingham Road	940	235	1415	1608	0.585	938	653	0.7	1.4	5.351	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1060	265	792	1606	0.660	1060	1577	1.9	1.9	6.592	A
2 - Southwell Road	489	122	1120	917	0.533	489	733	1.1	1.1	8.406	A
3 - A6097	1598	399	492	1779	0.898	1595	1116	7.4	8.0	18.974	C
4 - Nottingham Road	940	235	1429	1596	0.589	940	658	1.4	1.4	5.487	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	866	216	651	1708	0.507	869	1306	1.9	1.0	4.312	A
2 - Southwell Road	399	100	918	1035	0.386	401	603	1.1	0.6	5.694	A
3 - A6097	1304	326	404	1842	0.708	1326	915	8.0	2.5	7.261	A
4 - Nottingham Road	768	192	1187	1790	0.429	770	543	1.4	0.8	3.540	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	725	181	543	1786	0.406	726	1083	1.0	0.7	3.402	A
2 - Southwell Road	334	84	767	1124	0.297	335	503	0.6	0.4	4.567	A
3 - A6097	1092	273	337	1890	0.578	1097	765	2.5	1.4	4.563	A
4 - Nottingham Road	643	161	982	1953	0.329	644	452	0.8	0.5	2.752	A

## Proposed Layout - 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	3.75	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	683	100.000
2 - Southwell Road		ONE HOUR	✓	352	100.000
3 - A6097		ONE HOUR	✓	857	100.000
4 - Nottingham Road		ONE HOUR	✓	588	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	99	450	133
	2 - Southwell Road	88	1	104	159
	3 - A6097	496	113	3	245
	4 - Nottingham Road	170	185	231	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.43	3.60	0.7	A	627	940
2 - Southwell Road	0.37	5.48	0.6	A	323	485
3 - A6097	0.52	4.07	1.1	A	786	1180
4 - Nottingham Road	0.31	2.44	0.4	A	540	809

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	514	129	402	1887	0.272	513	567	0.0	0.4	2.616	A

2 - Southwell Road	265	66	616	1213	0.218	264	299	0.0	0.3	3.791	A
3 - A6097	645	161	288	1925	0.335	643	592	0.0	0.5	2.808	A
4 - Nottingham Road	443	111	527	2317	0.191	442	404	0.0	0.2	1.919	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	614	154	481	1831	0.335	613	678	0.4	0.5	2.955	A
2 - Southwell Road	316	79	737	1142	0.277	316	358	0.3	0.4	4.357	A
3 - A6097	770	193	345	1885	0.409	770	708	0.5	0.7	3.228	A
4 - Nottingham Road	529	132	630	2234	0.237	528	484	0.2	0.3	2.110	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	752	188	588	1753	0.429	751	830	0.5	0.7	3.589	A
2 - Southwell Road	388	97	902	1045	0.371	387	438	0.4	0.6	5.463	A
3 - A6097	944	236	422	1829	0.516	942	867	0.7	1.1	4.050	A
4 - Nottingham Road	647	162	772	2121	0.305	647	592	0.3	0.4	2.442	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	752	188	589	1753	0.429	752	831	0.7	0.7	3.597	A
2 - Southwell Road	388	97	903	1044	0.371	388	438	0.6	0.6	5.481	A
3 - A6097	944	236	423	1829	0.516	944	868	1.1	1.1	4.065	A
4 - Nottingham Road	647	162	773	2120	0.305	647	593	0.4	0.4	2.443	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	614	154	482	1830	0.336	615	680	0.7	0.5	2.964	A
2 - Southwell Road	316	79	738	1141	0.277	317	358	0.6	0.4	4.374	A
3 - A6097	770	193	346	1884	0.409	772	709	1.1	0.7	3.243	A
4 - Nottingham Road	529	132	632	2232	0.237	529	486	0.4	0.3	2.113	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	514	129	403	1887	0.273	515	569	0.5	0.4	2.626	A
2 - Southwell Road	265	66	618	1212	0.219	265	300	0.4	0.3	3.805	A
3 - A6097	645	161	289	1924	0.335	646	594	0.7	0.5	2.817	A
4 - Nottingham Road	443	111	529	2315	0.191	443	406	0.3	0.2	1.924	A

## Proposed Layout - 2023, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.86	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	67	100.000
2 - Southwell Road		ONE HOUR	✓	35	100.000
3 - A6097		ONE HOUR	✓	83	100.000
4 - Nottingham Road		ONE HOUR	✓	58	100.000

## Origin-Destination Data



## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	10	44	13
2 - Southwell Road	9	0	10	16
3 - A6097	48	11	0	24
4 - Nottingham Road	17	18	23	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.03	1.87	0.0	A	61	92
2 - Southwell Road	0.03	2.46	0.0	A	32	48
3 - A6097	0.04	1.90	0.0	A	76	114
4 - Nottingham Road	0.02	1.41	0.0	A	53	80

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	50	13	39	2149	0.023	50	56	0.0	0.0	1.834	A
2 - Southwell Road	26	7	60	1539	0.017	26	29	0.0	0.0	2.413	A
3 - A6097	62	16	29	2110	0.030	62	58	0.0	0.0	1.868	A
4 - Nottingham Road	44	11	51	2696	0.016	44	40	0.0	0.0	1.391	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	60	15	47	2143	0.028	60	67	0.0	0.0	1.847	A
2 - Southwell Road	31	8	72	1532	0.021	31	35	0.0	0.0	2.433	A
3 - A6097	75	19	34	2106	0.035	75	69	0.0	0.0	1.883	A
4 - Nottingham Road	52	13	61	2688	0.019	52	48	0.0	0.0	1.399	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	74	18	57	2136	0.035	74	81	0.0	0.0	1.866	A
2 - Southwell Road	39	10	88	1523	0.025	39	43	0.0	0.0	2.460	A
3 - A6097	91	23	42	2101	0.044	91	85	0.0	0.0	1.904	A
4 - Nottingham Road	64	16	75	2677	0.024	64	58	0.0	0.0	1.411	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	74	18	57	2136	0.035	74	81	0.0	0.0	1.866	A
2 - Southwell Road	39	10	88	1523	0.025	39	43	0.0	0.0	2.460	A
3 - A6097	91	23	42	2101	0.044	91	85	0.0	0.0	1.904	A
4 - Nottingham Road	64	16	75	2677	0.024	64	58	0.0	0.0	1.411	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	60	15	47	2143	0.028	60	67	0.0	0.0	1.847	A
2 - Southwell Road	31	8	72	1532	0.021	31	35	0.0	0.0	2.435	A
3 - A6097	75	19	34	2106	0.035	75	69	0.0	0.0	1.883	A
4 - Nottingham Road	52	13	61	2688	0.019	52	48	0.0	0.0	1.399	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	50	13	39	2149	0.023	50	56	0.0	0.0	1.834	A
2 - Southwell Road	26	7	60	1539	0.017	26	29	0.0	0.0	2.414	A

3 - A6097	62	16	29	2110	0.03 0	63	58	0.0	0.0	1.87 1	A
4 - Nottingham Road	44	11	51	2696	0.01 6	44	40	0.0	0.0	1.39 1	A

## Proposed Layout - 2037, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D5 - 2037, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	17.09	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D5	2037	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1368	100.000
2 - Southwell Road		ONE HOUR	✓	417	100.000
3 - A6097		ONE HOUR	✓	1280	100.000
4 - Nottingham Road		ONE HOUR	✓	742	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	176	824	366
From 2 - Southwell Road	75	0	82	260
From 3 - A6097	830	127	0	323
From 4 - Nottingham Road	242	209	290	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.90	19.83	7.9	C	1368	1368
2 - Southwell Road	0.74	22.48	2.8	C	417	417
3 - A6097	0.89	20.26	7.5	C	1280	1280
4 - Nottingham Road	0.45	3.55	0.8	A	742	742

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1230	307	563	1771	0.694	1226	1030	1.3	2.2	6.555	A
2 - Southwell Road	375	94	1330	794	0.472	373	459	0.5	0.9	8.541	A
3 - A6097	1151	288	631	1681	0.685	1147	1072	1.2	2.1	6.699	A
4 - Nottingham Road	667	167	927	1998	0.334	666	851	0.4	0.5	2.703	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1506	377	688	1682	0.896	1486	1251	2.2	7.3	16.918	C
2 - Southwell Road	459	115	1615	626	0.733	452	559	0.9	2.5	20.023	C
3 - A6097	1409	352	764	1585	0.889	1390	1303	2.1	6.8	17.055	C
4 - Nottingham Road	817	204	1123	1841	0.444	816	1032	0.5	0.8	3.510	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1506	377	690	1680	0.897	1504	1263	7.3	7.9	19.826	C
2 - Southwell Road	459	115	1631	617	0.744	458	563	2.5	2.8	22.482	C
3 - A6097	1409	352	774	1579	0.893	1407	1315	6.8	7.5	20.256	C
4 - Nottingham Road	817	204	1136	1830	0.446	817	1044	0.8	0.8	3.552	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1230	307	567	1769	0.695	1252	1048	7.9	2.3	7.251	A
2 - Southwell Road	375	94	1353	780	0.481	382	466	2.8	0.9	9.207	A
3 - A6097	1151	288	645	1671	0.689	1172	1090	7.5	2.3	7.505	A
4 - Nottingham Road	667	167	947	1982	0.337	668	870	0.8	0.5	2.745	A

## Proposed Layout - 2037, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	15.12	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2037	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	990	100.000
2 - Southwell Road		ONE HOUR	✓	449	100.000
3 - A6097		ONE HOUR	✓	1511	100.000
4 - Nottingham Road		ONE HOUR	✓	870	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	188	660	141
	2 - Southwell Road	137	0	142	170
	3 - A6097	1035	159	1	316
	4 - Nottingham Road	289	320	261	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.69	7.20	2.2	A	908	1363
2 - Southwell Road	0.56	9.17	1.2	A	412	618
3 - A6097	0.94	27.40	11.9	D	1387	2080
4 - Nottingham Road	0.61	5.88	1.5	A	798	1197

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	745	186	556	1776	0.420	742	1095	0.0	0.7	3.471	A
2 - Southwell Road	338	85	798	1106	0.306	336	500	0.0	0.4	4.668	A
3 - A6097	1138	284	336	1890	0.602	1132	798	0.0	1.5	4.708	A
4 - Nottingham Road	655	164	998	1940	0.338	653	470	0.0	0.5	2.788	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	890	222	665	1698	0.524	889	1310	0.7	1.1	4.439	A
2 - Southwell Road	404	101	955	1014	0.398	403	598	0.4	0.7	5.885	A
3 - A6097	1358	340	403	1843	0.737	1353	955	1.5	2.7	7.277	A
4 - Nottingham Road	782	196	1194	1784	0.438	781	562	0.5	0.8	3.587	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1090	273	811	1593	0.684	1086	1587	1.1	2.1	7.042	A
2 - Southwell Road	494	124	1167	889	0.556	492	729	0.7	1.2	9.020	A
3 - A6097	1664	416	492	1779	0.935	1633	1167	2.7	10.4	21.200	C
4 - Nottingham Road	958	239	1443	1585	0.604	955	682	0.8	1.5	5.684	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1090	273	815	1590	0.686	1090	1606	2.1	2.2	7.197	A
2 - Southwell Road	494	124	1171	887	0.558	494	734	1.2	1.2	9.173	A
3 - A6097	1664	416	494	1778	0.936	1658	1171	10.4	11.9	27.405	D
4 - Nottingham Road	958	239	1463	1569	0.610	958	689	1.5	1.5	5.883	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	890	222	672	1693	0.526	894	1341	2.2	1.1	4.529	A
2 - Southwell Road	404	101	961	1010	0.400	406	605	1.2	0.7	5.981	A
3 - A6097	1358	340	406	1841	0.738	1394	961	11.9	2.9	8.671	A
4 - Nottingham Road	782	196	1227	1757	0.445	785	573	1.5	0.8	3.716	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	745	186	559	1774	0.420	747	1105	1.1	0.7	3.511	A
2 - Southwell Road	338	85	803	1103	0.306	339	503	0.7	0.4	4.716	A
3 - A6097	1138	284	339	1889	0.602	1143	803	2.9	1.5	4.862	A
4 - Nottingham Road	655	164	1008	1932	0.339	656	474	0.8	0.5	2.822	A

## Proposed Layout - 2037, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	3.97	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2037	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00



## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	711	100.000
2 - Southwell Road		ONE HOUR	✓	358	100.000
3 - A6097		ONE HOUR	✓	906	100.000
4 - Nottingham Road		ONE HOUR	✓	612	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	100	475	135
	2 - Southwell Road	88	1	109	160
	3 - A6097	519	118	3	266
	4 - Nottingham Road	172	186	252	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.45	3.79	0.8	A	652	979
2 - Southwell Road	0.39	5.81	0.6	A	329	493
3 - A6097	0.55	4.34	1.2	A	831	1247
4 - Nottingham Road	0.32	2.53	0.5	A	562	842

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	535	134	422	1873	0.286	534	585	0.0	0.4	2.684	A

2 - Southwell Road	270	67	652	1192	0.226	268	304	0.0	0.3	3.894	A
3 - A6097	682	171	290	1923	0.355	680	630	0.0	0.5	2.890	A
4 - Nottingham Road	461	115	548	2300	0.200	460	422	0.0	0.2	1.955	A

#### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	639	160	505	1813	0.353	639	701	0.4	0.5	3.063	A
2 - Southwell Road	322	80	780	1117	0.288	321	364	0.3	0.4	4.525	A
3 - A6097	814	204	347	1883	0.433	814	754	0.5	0.8	3.364	A
4 - Nottingham Road	550	138	656	2214	0.249	550	506	0.2	0.3	2.163	A

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	783	196	618	1732	0.452	782	857	0.5	0.8	3.784	A
2 - Southwell Road	394	99	954	1014	0.389	393	445	0.4	0.6	5.792	A
3 - A6097	998	249	425	1827	0.546	996	922	0.8	1.2	4.322	A
4 - Nottingham Road	674	168	802	2097	0.321	673	619	0.3	0.5	2.527	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	783	196	619	1731	0.452	783	859	0.8	0.8	3.795	A
2 - Southwell Road	394	99	956	1013	0.389	394	446	0.6	0.6	5.814	A
3 - A6097	998	249	426	1827	0.546	997	924	1.2	1.2	4.342	A
4 - Nottingham Road	674	168	804	2096	0.322	674	620	0.5	0.5	2.531	A

#### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	639	160	506	1812	0.353	640	703	0.8	0.5	3.073	A
2 - Southwell Road	322	80	781	1115	0.289	323	365	0.6	0.4	4.545	A
3 - A6097	814	204	349	1882	0.433	816	755	1.2	0.8	3.383	A
4 - Nottingham Road	550	138	658	2212	0.249	551	507	0.5	0.3	2.168	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	535	134	423	1872	0.286	536	588	0.5	0.4	2.697	A
2 - Southwell Road	270	67	654	1190	0.226	270	305	0.4	0.3	3.913	A
3 - A6097	682	171	292	1922	0.355	683	632	0.8	0.6	2.906	A
4 - Nottingham Road	461	115	550	2298	0.201	461	424	0.3	0.3	1.960	A

## Proposed Layout - 2037, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.86	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2037	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	69	100.000
2 - Southwell Road		ONE HOUR	✓	36	100.000
3 - A6097		ONE HOUR	✓	89	100.000
4 - Nottingham Road		ONE HOUR	✓	60	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	10	46	13
2 - Southwell Road	9	0	11	16
3 - A6097	51	12	0	26
4 - Nottingham Road	17	18	25	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.04	1.87	0.0	A	63	95
2 - Southwell Road	0.03	2.47	0.0	A	33	50
3 - A6097	0.05	1.91	0.1	A	82	123
4 - Nottingham Road	0.02	1.42	0.0	A	55	83

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	52	13	41	2147	0.024	52	58	0.0	0.0	1.838	A
2 - Southwell Road	27	7	63	1537	0.018	27	30	0.0	0.0	2.417	A
3 - A6097	67	17	29	2110	0.032	67	62	0.0	0.0	1.871	A
4 - Nottingham Road	45	11	54	2694	0.017	45	41	0.0	0.0	1.394	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	62	16	49	2141	0.029	62	69	0.0	0.0	1.852	A
2 - Southwell Road	32	8	75	1530	0.021	32	36	0.0	0.0	2.437	A
3 - A6097	80	20	34	2106	0.038	80	74	0.0	0.0	1.887	A
4 - Nottingham Road	54	13	65	2686	0.020	54	49	0.0	0.0	1.403	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	76	19	61	2133	0.036	76	85	0.0	0.0	1.872	A
2 - Southwell Road	40	10	92	1520	0.026	40	44	0.0	0.0	2.466	A
3 - A6097	98	24	42	2101	0.047	98	90	0.0	0.1	1.909	A
4 - Nottingham Road	66	17	79	2674	0.025	66	61	0.0	0.0	1.416	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	76	19	61	2133	0.036	76	85	0.0	0.0	1.872	A
2 - Southwell Road	40	10	92	1520	0.026	40	44	0.0	0.0	2.466	A
3 - A6097	98	24	42	2101	0.047	98	90	0.1	0.1	1.909	A
4 - Nottingham Road	66	17	79	2674	0.025	66	61	0.0	0.0	1.416	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	62	16	49	2141	0.029	62	69	0.0	0.0	1.855	A
2 - Southwell Road	32	8	76	1530	0.021	32	36	0.0	0.0	2.437	A
3 - A6097	80	20	34	2106	0.038	80	74	0.1	0.0	1.887	A
4 - Nottingham Road	54	13	65	2686	0.020	54	49	0.0	0.0	1.403	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	52	13	41	2147	0.024	52	58	0.0	0.0	1.838	A
2 - Southwell Road	27	7	63	1537	0.018	27	30	0.0	0.0	2.419	A

3 - A6097	67	17	29	2110	0.03 2	67	62	0.0	0.0	1.87 1	A
4 - Nottingham Road	45	11	54	2694	0.01 7	45	41	0.0	0.0	1.39 6	A

## Proposed Layout - 2037 final, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D9 - 2037 final, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	30.55	D

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D9	2037 final	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1444	100.000
2 - Southwell Road		ONE HOUR	✓	438	100.000
3 - A6097		ONE HOUR	✓	1321	100.000
4 - Nottingham Road		ONE HOUR	✓	809	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	183	855	404
From 2 - Southwell Road	78	0	82	278
From 3 - A6097	852	127	0	342
From 4 - Nottingham Road	272	227	309	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.96	39.49	16.5	E	1444	1444
2 - Southwell Road	0.85	39.31	4.9	E	438	438
3 - A6097	0.95	34.19	13.0	D	1321	1321
4 - Nottingham Road	0.49	3.90	1.0	A	809	809

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1298	325	596	1748	0.743	1293	1079	1.5	2.8	7.825	A
2 - Southwell Road	394	98	1407	748	0.526	392	481	0.6	1.1	10.051	B
3 - A6097	1188	297	683	1643	0.723	1183	1116	1.3	2.5	7.735	A
4 - Nottingham Road	727	182	948	1980	0.367	727	917	0.4	0.6	2.870	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1590	397	727	1653	0.962	1548	1302	2.8	13.4	27.137	D
2 - Southwell Road	482	121	1692	581	0.831	470	582	1.1	4.1	29.932	D
3 - A6097	1454	364	818	1547	0.940	1422	1344	2.5	10.6	24.363	C
4 - Nottingham Road	891	223	1140	1827	0.487	889	1101	0.6	0.9	3.826	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1590	397	730	1651	0.963	1577	1319	13.4	16.5	39.493	E
2 - Southwell Road	482	121	1719	565	0.853	479	589	4.1	4.9	39.311	E
3 - A6097	1454	364	834	1536	0.947	1445	1364	10.6	13.0	34.192	D
4 - Nottingham Road	891	223	1158	1813	0.491	891	1120	0.9	1.0	3.905	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1298	325	602	1743	0.745	1352	1112	16.5	3.0	10.420	B
2 - Southwell Road	394	98	1460	717	0.549	408	494	4.9	1.3	12.192	B
3 - A6097	1188	297	713	1622	0.732	1228	1155	13.0	2.8	10.038	B
4 - Nottingham Road	727	182	985	1951	0.373	729	956	1.0	0.6	2.950	A

## Proposed Layout - 2037 final, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	29.51	D

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown



## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2037 final	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1055	100.000
2 - Southwell Road		ONE HOUR	✓	477	100.000
3 - A6097		ONE HOUR	✓	1584	100.000
4 - Nottingham Road		ONE HOUR	✓	952	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	198	691	165
	2 - Southwell Road	144	0	145	188
	3 - A6097	1085	162	1	336
	4 - Nottingham Road	324	344	284	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.75	9.19	2.9	A	968	1452
2 - Southwell Road	0.63	11.55	1.7	B	438	657
3 - A6097	1.00	61.76	30.2	F	1454	2180
4 - Nottingham Road	0.68	7.37	2.1	A	874	1310

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	794	199	593	1750	0.454	791	1164	0.0	0.8	3.743	A
2 - Southwell Road	359	90	856	1072	0.335	357	528	0.0	0.5	5.025	A
3 - A6097	1193	298	373	1864	0.640	1186	840	0.0	1.7	5.250	A
4 - Nottingham Road	717	179	1043	1905	0.376	714	516	0.0	0.6	3.017	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	948	237	709	1666	0.569	947	1391	0.8	1.3	4.991	A
2 - Southwell Road	429	107	1025	973	0.441	428	631	0.5	0.8	6.592	A
3 - A6097	1424	356	447	1812	0.786	1417	1006	1.7	3.5	8.955	A
4 - Nottingham Road	856	214	1246	1742	0.491	854	617	0.6	1.0	4.048	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1162	290	861	1557	0.746	1155	1660	1.3	2.8	8.839	A
2 - Southwell Road	525	131	1251	840	0.625	522	765	0.8	1.6	11.208	B
3 - A6097	1744	436	545	1742	1.001	1674	1228	3.5	21.1	35.857	E
4 - Nottingham Road	1048	262	1477	1558	0.673	1044	741	1.0	2.0	6.951	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1162	290	867	1552	0.748	1161	1686	2.8	2.9	9.186	A
2 - Southwell Road	525	131	1257	836	0.628	525	771	1.6	1.7	11.554	B
3 - A6097	1744	436	548	1739	1.003	1707	1234	21.1	30.2	61.762	F
4 - Nottingham Road	1048	262	1505	1536	0.682	1048	751	2.0	2.1	7.365	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	948	237	725	1655	0.573	955	1472	2.9	1.4	5.184	A
2 - Southwell Road	429	107	1033	968	0.443	432	646	1.7	0.8	6.765	A
3 - A6097	1424	356	451	1809	0.787	1529	1014	30.2	3.9	17.534	C
4 - Nottingham Road	856	214	1336	1670	0.512	860	644	2.1	1.1	4.464	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	794	199	598	1746	0.455	796	1177	1.4	0.8	3.796	A
2 - Southwell Road	359	90	862	1068	0.336	360	532	0.8	0.5	5.093	A
3 - A6097	1193	298	376	1862	0.640	1201	846	3.9	1.8	5.513	A
4 - Nottingham Road	717	179	1056	1894	0.378	719	521	1.1	0.6	3.065	A

## Proposed Layout - 2037 final, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	4.24	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2037 final	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	750	100.000
2 - Southwell Road		ONE HOUR	✓	374	100.000
3 - A6097		ONE HOUR	✓	934	100.000
4 - Nottingham Road		ONE HOUR	✓	659	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	103	491	155
	2 - Southwell Road	91	1	109	173
	3 - A6097	535	118	3	278
	4 - Nottingham Road	193	199	265	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.48	4.07	0.9	A	688	1032
2 - Southwell Road	0.42	6.32	0.7	A	343	515
3 - A6097	0.57	4.67	1.3	A	857	1286
4 - Nottingham Road	0.35	2.66	0.5	A	605	907

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	565	141	442	1859	0.304	563	615	0.0	0.4	2.774	A

2 - Southwell Road	282	70	688	1170	0.241	280	316	0.0	0.3	4.039	A
3 - A6097	703	176	317	1904	0.369	701	652	0.0	0.6	2.987	A
4 - Nottingham Road	496	124	562	2289	0.217	495	456	0.0	0.3	2.006	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	674	169	528	1796	0.375	674	736	0.4	0.6	3.204	A
2 - Southwell Road	336	84	824	1091	0.308	336	378	0.3	0.4	4.765	A
3 - A6097	840	210	380	1860	0.452	839	780	0.6	0.8	3.523	A
4 - Nottingham Road	592	148	673	2200	0.269	592	546	0.3	0.4	2.238	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	826	206	647	1711	0.483	824	901	0.6	0.9	4.054	A
2 - Southwell Road	412	103	1008	982	0.419	411	463	0.4	0.7	6.286	A
3 - A6097	1028	257	465	1799	0.572	1026	954	0.8	1.3	4.647	A
4 - Nottingham Road	726	181	823	2080	0.349	725	668	0.4	0.5	2.655	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	826	206	647	1711	0.483	826	903	0.9	0.9	4.068	A
2 - Southwell Road	412	103	1010	982	0.420	412	464	0.7	0.7	6.317	A
3 - A6097	1028	257	466	1798	0.572	1028	956	1.3	1.3	4.675	A
4 - Nottingham Road	726	181	825	2079	0.349	726	669	0.5	0.5	2.659	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	674	169	529	1796	0.376	676	739	0.9	0.6	3.219	A
2 - Southwell Road	336	84	826	1090	0.309	337	379	0.7	0.4	4.792	A
3 - A6097	840	210	381	1858	0.452	842	782	1.3	0.8	3.546	A
4 - Nottingham Road	592	148	675	2198	0.269	593	548	0.5	0.4	2.244	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	565	141	443	1858	0.304	565	618	0.6	0.4	2.786	A
2 - Southwell Road	282	70	691	1169	0.241	282	317	0.4	0.3	4.064	A
3 - A6097	703	176	319	1903	0.370	704	654	0.8	0.6	3.007	A
4 - Nottingham Road	496	124	565	2286	0.217	496	458	0.4	0.3	2.013	A

## Proposed Layout - 2037 final, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.86	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2037 final	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	73	100.000
2 - Southwell Road		ONE HOUR	✓	37	100.000
3 - A6097		ONE HOUR	✓	91	100.000
4 - Nottingham Road		ONE HOUR	✓	64	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	10	48	15
2 - Southwell Road	9	0	11	17
3 - A6097	52	12	0	27
4 - Nottingham Road	19	19	26	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.04	1.88	0.0	A	67	100
2 - Southwell Road	0.03	2.47	0.0	A	34	51
3 - A6097	0.05	1.91	0.1	A	84	125
4 - Nottingham Road	0.03	1.42	0.0	A	59	88

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	55	14	43	2146	0.026	55	60	0.0	0.0	1.840	A
2 - Southwell Road	28	7	67	1535	0.018	28	31	0.0	0.0	2.422	A
3 - A6097	69	17	31	2108	0.032	68	64	0.0	0.0	1.874	A
4 - Nottingham Road	48	12	55	2693	0.018	48	44	0.0	0.0	1.395	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	66	16	51	2140	0.031	66	72	0.0	0.0	1.855	A
2 - Southwell Road	33	8	80	1528	0.022	33	37	0.0	0.0	2.443	A
3 - A6097	82	20	37	2104	0.039	82	76	0.0	0.0	1.890	A
4 - Nottingham Road	58	14	66	2685	0.021	58	53	0.0	0.0	1.405	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	80	20	63	2132	0.038	80	88	0.0	0.0	1.876	A
2 - Southwell Road	41	10	98	1517	0.027	41	45	0.0	0.0	2.473	A
3 - A6097	100	25	45	2098	0.048	100	94	0.0	0.1	1.913	A
4 - Nottingham Road	70	18	80	2673	0.026	70	65	0.0	0.0	1.418	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	80	20	63	2132	0.038	80	88	0.0	0.0	1.876	A
2 - Southwell Road	41	10	98	1517	0.027	41	45	0.0	0.0	2.473	A
3 - A6097	100	25	45	2098	0.048	100	94	0.1	0.1	1.913	A
4 - Nottingham Road	70	18	80	2673	0.026	70	65	0.0	0.0	1.418	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	66	16	51	2140	0.031	66	72	0.0	0.0	1.858	A
2 - Southwell Road	33	8	80	1527	0.022	33	37	0.0	0.0	2.445	A
3 - A6097	82	20	37	2104	0.039	82	76	0.1	0.0	1.890	A
4 - Nottingham Road	58	14	66	2685	0.021	58	53	0.0	0.0	1.405	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	55	14	43	2146	0.026	55	60	0.0	0.0	1.840	A
2 - Southwell Road	28	7	67	1535	0.018	28	31	0.0	0.0	2.422	A



3 - A6097	69	17	31	2108	0.03 2	69	64	0.0	0.0	1.87 4	A
4 - Nottingham Road	48	12	55	2693	0.01 8	48	44	0.0	0.0	1.39 7	A

## Proposed Layout - 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D13 - 2023LG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	9.12	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1252	100.000
2 - Southwell Road		ONE HOUR	✓	390	100.000
3 - A6097		ONE HOUR	✓	1151	100.000
4 - Nottingham Road		ONE HOUR	✓	668	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	166	740	344
From 2 - Southwell Road	71	0	74	245
From 3 - A6097	751	115	0	285
From 4 - Nottingham Road	227	195	245	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.79	10.03	3.8	B	1252	1252
2 - Southwell Road	0.60	12.65	1.5	B	390	390
3 - A6097	0.79	10.46	3.6	B	1151	1151
4 - Nottingham Road	0.38	3.06	0.6	A	668	668

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1126	281	499	1817	0.619	1123	943	1.0	1.6	5.169	A
2 - Southwell Road	351	88	1195	873	0.402	350	427	0.4	0.7	6.872	A
3 - A6097	1035	259	595	1706	0.606	1032	950	0.9	1.5	5.323	A
4 - Nottingham Road	601	150	842	2065	0.291	600	785	0.3	0.4	2.458	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1378	345	611	1737	0.794	1370	1151	1.6	3.7	9.608	A
2 - Southwell Road	429	107	1459	718	0.598	426	522	0.7	1.4	12.232	B
3 - A6097	1267	317	725	1613	0.786	1259	1160	1.5	3.5	9.958	A
4 - Nottingham Road	735	184	1027	1917	0.384	735	957	0.4	0.6	3.043	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1378	345	612	1736	0.794	1378	1157	3.7	3.8	10.030	B
2 - Southwell Road	429	107	1466	713	0.602	429	524	1.4	1.5	12.655	B
3 - A6097	1267	317	730	1610	0.787	1267	1166	3.5	3.6	10.458	B
4 - Nottingham Road	735	184	1034	1912	0.385	735	963	0.6	0.6	3.058	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1126	281	501	1816	0.620	1134	951	3.8	1.7	5.341	A
2 - Southwell Road	351	88	1205	867	0.405	354	430	1.5	0.7	7.059	A
3 - A6097	1035	259	601	1702	0.608	1043	958	3.6	1.6	5.526	A
4 - Nottingham Road	601	150	851	2058	0.292	601	793	0.6	0.4	2.474	A

## Proposed Layout - 2023LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	8.18	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	908	100.000
2 - Southwell Road		ONE HOUR	✓	418	100.000
3 - A6097		ONE HOUR	✓	1369	100.000
4 - Nottingham Road		ONE HOUR	✓	803	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	178	597	132
	2 - Southwell Road	130	0	129	159
	3 - A6097	948	146	1	274
	4 - Nottingham Road	272	302	229	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.61	5.63	1.5	A	833	1250
2 - Southwell Road	0.48	7.29	0.9	A	384	575
3 - A6097	0.84	12.23	5.0	B	1256	1884
4 - Nottingham Road	0.53	4.64	1.1	A	737	1105

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	684	171	509	1810	0.378	681	1013	0.0	0.6	3.181	A
2 - Southwell Road	315	79	720	1151	0.273	313	470	0.0	0.4	4.286	A
3 - A6097	1031	258	316	1905	0.541	1026	717	0.0	1.2	4.076	A
4 - Nottingham Road	605	151	919	2004	0.302	603	424	0.0	0.4	2.566	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	816	204	609	1738	0.470	815	1212	0.6	0.9	3.894	A
2 - Southwell Road	376	94	862	1068	0.352	375	562	0.4	0.5	5.189	A
3 - A6097	1231	308	379	1860	0.662	1228	858	1.2	1.9	5.663	A
4 - Nottingham Road	722	180	1100	1859	0.388	721	507	0.4	0.6	3.161	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1000	250	744	1641	0.609	997	1478	0.9	1.5	5.569	A
2 - Southwell Road	460	115	1054	955	0.482	459	687	0.5	0.9	7.228	A
3 - A6097	1507	377	463	1800	0.837	1496	1050	1.9	4.8	11.425	B
4 - Nottingham Road	884	221	1340	1667	0.530	882	619	0.6	1.1	4.575	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1000	250	746	1639	0.610	1000	1487	1.5	1.5	5.628	A
2 - Southwell Road	460	115	1057	954	0.483	460	689	0.9	0.9	7.293	A
3 - A6097	1507	377	465	1799	0.838	1507	1053	4.8	5.0	12.226	B
4 - Nottingham Road	884	221	1349	1660	0.533	884	622	1.1	1.1	4.639	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	816	204	612	1736	0.470	819	1224	1.5	0.9	3.936	A
2 - Southwell Road	376	94	866	1066	0.352	377	565	0.9	0.5	5.239	A
3 - A6097	1231	308	381	1859	0.662	1243	862	5.0	2.0	5.949	A
4 - Nottingham Road	722	180	1112	1849	0.390	724	511	1.1	0.6	3.203	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	684	171	511	1809	0.378	685	1020	0.9	0.6	3.205	A
2 - Southwell Road	315	79	724	1149	0.274	315	472	0.5	0.4	4.321	A
3 - A6097	1031	258	318	1903	0.541	1034	721	2.0	1.2	4.155	A
4 - Nottingham Road	605	151	926	1998	0.303	605	426	0.6	0.4	2.587	A

## Proposed Layout - 2023LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	3.52	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	648	100.000
2 - Southwell Road		ONE HOUR	✓	332	100.000
3 - A6097		ONE HOUR	✓	813	100.000
4 - Nottingham Road		ONE HOUR	✓	556	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	94	427	126
	2 - Southwell Road	83	1	98	150
	3 - A6097	471	107	3	232
	4 - Nottingham Road	161	174	219	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.40	3.39	0.7	A	595	892
2 - Southwell Road	0.34	5.10	0.5	A	305	457
3 - A6097	0.49	3.79	0.9	A	746	1119
4 - Nottingham Road	0.28	2.34	0.4	A	510	765

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	488	122	380	1903	0.256	486	537	0.0	0.3	2.539	A

2 - Southwell Road	250	62	584	1231	0.203	249	282	0.0	0.3	3.661	A
3 - A6097	612	153	272	1936	0.316	610	561	0.0	0.5	2.711	A
4 - Nottingham Road	419	105	500	2338	0.179	418	383	0.0	0.2	1.874	A

#### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	583	146	455	1849	0.315	582	643	0.3	0.5	2.841	A
2 - Southwell Road	298	75	699	1164	0.256	298	338	0.3	0.3	4.155	A
3 - A6097	731	183	326	1898	0.385	730	671	0.5	0.6	3.081	A
4 - Nottingham Road	500	125	598	2260	0.221	500	458	0.2	0.3	2.045	A

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	713	178	557	1776	0.402	713	787	0.5	0.7	3.382	A
2 - Southwell Road	366	91	856	1072	0.341	365	414	0.3	0.5	5.087	A
3 - A6097	895	224	399	1846	0.485	894	822	0.6	0.9	3.776	A
4 - Nottingham Road	612	153	732	2153	0.284	612	561	0.3	0.4	2.336	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	713	178	557	1776	0.402	713	788	0.7	0.7	3.388	A
2 - Southwell Road	366	91	857	1071	0.341	366	414	0.5	0.5	5.099	A
3 - A6097	895	224	400	1845	0.485	895	822	0.9	0.9	3.787	A
4 - Nottingham Road	612	153	733	2152	0.284	612	562	0.4	0.4	2.337	A

#### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	583	146	455	1849	0.315	583	645	0.7	0.5	2.846	A
2 - Southwell Road	298	75	700	1163	0.257	299	338	0.5	0.3	4.169	A
3 - A6097	731	183	327	1897	0.385	732	672	0.9	0.6	3.094	A
4 - Nottingham Road	500	125	600	2258	0.221	500	459	0.4	0.3	2.047	A



13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	488	122	381	1902	0.256	488	540	0.5	0.3	2.548	A
2 - Southwell Road	250	62	586	1230	0.203	250	283	0.3	0.3	3.677	A
3 - A6097	612	153	274	1935	0.316	613	563	0.6	0.5	2.724	A
4 - Nottingham Road	419	105	502	2336	0.179	419	384	0.3	0.2	1.876	A

## Proposed Layout - 2023LG, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.85	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	63	100.000
2 - Southwell Road		ONE HOUR	✓	33	100.000
3 - A6097		ONE HOUR	✓	79	100.000
4 - Nottingham Road		ONE HOUR	✓	54	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	9	42	12
2 - Southwell Road	8	0	10	15
3 - A6097	46	10	0	23
4 - Nottingham Road	16	17	21	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.03	1.86	0.0	A	58	87
2 - Southwell Road	0.02	2.45	0.0	A	30	45
3 - A6097	0.04	1.90	0.0	A	72	109
4 - Nottingham Road	0.02	1.41	0.0	A	50	74

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	47	12	36	2151	0.022	47	53	0.0	0.0	1.831	A
2 - Southwell Road	25	6	56	1541	0.016	25	27	0.0	0.0	2.407	A
3 - A6097	59	15	26	2112	0.028	59	55	0.0	0.0	1.865	A
4 - Nottingham Road	41	10	48	2699	0.015	41	38	0.0	0.0	1.387	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	57	14	43	2146	0.026	57	63	0.0	0.0	1.843	A
2 - Southwell Road	30	7	67	1535	0.019	30	32	0.0	0.0	2.425	A
3 - A6097	71	18	31	2108	0.034	71	66	0.0	0.0	1.878	A
4 - Nottingham Road	49	12	58	2691	0.018	49	45	0.0	0.0	1.395	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	69	17	53	2139	0.032	69	77	0.0	0.0	1.861	A
2 - Southwell Road	36	9	83	1526	0.024	36	40	0.0	0.0	2.451	A
3 - A6097	87	22	39	2103	0.041	87	80	0.0	0.0	1.898	A
4 - Nottingham Road	59	15	70	2681	0.022	59	55	0.0	0.0	1.407	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	69	17	53	2139	0.032	69	77	0.0	0.0	1.861	A
2 - Southwell Road	36	9	83	1526	0.024	36	40	0.0	0.0	2.451	A
3 - A6097	87	22	39	2103	0.041	87	80	0.0	0.0	1.898	A
4 - Nottingham Road	59	15	70	2681	0.022	59	55	0.0	0.0	1.407	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	57	14	43	2146	0.026	57	63	0.0	0.0	1.843	A
2 - Southwell Road	30	7	67	1535	0.019	30	32	0.0	0.0	2.426	A
3 - A6097	71	18	31	2108	0.034	71	66	0.0	0.0	1.879	A
4 - Nottingham Road	49	12	58	2691	0.018	49	45	0.0	0.0	1.395	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	47	12	36	2151	0.022	47	53	0.0	0.0	1.831	A
2 - Southwell Road	25	6	56	1541	0.016	25	27	0.0	0.0	2.409	A

3 - A6097	59	15	26	2112	0.028	60	55	0.0	0.0	1.868	A
4 - Nottingham Road	41	10	48	2699	0.015	41	38	0.0	0.0	1.390	A

## Proposed Layout - 2037LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D17 - 2037LG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	8.75	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D17	2037LG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1234	100.000
2 - Southwell Road		ONE HOUR	✓	373	100.000
3 - A6097		ONE HOUR	✓	1157	100.000
4 - Nottingham Road		ONE HOUR	✓	670	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	157	748	327
From 2 - Southwell Road	67	0	74	232
From 3 - A6097	749	115	0	293
From 4 - Nottingham Road	217	187	265	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.79	9.76	3.6	A	1234	1234
2 - Southwell Road	0.58	12.16	1.4	B	373	373
3 - A6097	0.78	9.89	3.4	A	1157	1157
4 - Nottingham Road	0.38	3.05	0.6	A	670	670

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1109	277	510	1809	0.613	1107	929	1.0	1.6	5.107	A
2 - Southwell Road	335	84	1205	867	0.387	334	412	0.4	0.6	6.752	A
3 - A6097	1040	260	564	1728	0.602	1038	975	0.9	1.5	5.199	A
4 - Nottingham Road	602	151	837	2069	0.291	602	765	0.3	0.4	2.453	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1359	340	624	1727	0.787	1351	1134	1.6	3.5	9.371	A
2 - Southwell Road	411	103	1472	710	0.578	408	503	0.6	1.3	11.796	B
3 - A6097	1274	318	688	1640	0.777	1267	1191	1.5	3.3	9.465	A
4 - Nottingham Road	738	184	1021	1922	0.384	737	933	0.4	0.6	3.036	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1359	340	625	1726	0.787	1358	1139	3.5	3.6	9.755	A
2 - Southwell Road	411	103	1478	706	0.582	411	505	1.3	1.4	12.163	B
3 - A6097	1274	318	692	1637	0.778	1274	1197	3.3	3.4	9.888	A
4 - Nottingham Road	738	184	1027	1917	0.385	738	939	0.6	0.6	3.051	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1109	277	512	1808	0.614	1117	936	3.6	1.6	5.271	A
2 - Southwell Road	335	84	1215	861	0.389	338	415	1.4	0.6	6.920	A
3 - A6097	1040	260	570	1724	0.603	1048	983	3.4	1.5	5.379	A
4 - Nottingham Road	602	151	845	2063	0.292	603	773	0.6	0.4	2.469	A

## Proposed Layout - 2037LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	7.75	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2037LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	894	100.000
2 - Southwell Road		ONE HOUR	✓	403	100.000
3 - A6097		ONE HOUR	✓	1363	100.000
4 - Nottingham Road		ONE HOUR	✓	779	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	168	598	127
	2 - Southwell Road	123	0	128	152
	3 - A6097	933	143	1	286
	4 - Nottingham Road	258	285	236	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.60	5.41	1.5	A	820	1231
2 - Southwell Road	0.47	7.08	0.9	A	370	555
3 - A6097	0.83	11.41	4.6	B	1251	1876
4 - Nottingham Road	0.51	4.37	1.0	A	715	1072

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	673	168	499	1817	0.370	671	986	0.0	0.6	3.132	A
2 - Southwell Road	303	76	723	1150	0.264	302	447	0.0	0.4	4.238	A
3 - A6097	1026	257	302	1915	0.536	1022	722	0.0	1.1	4.010	A
4 - Nottingham Road	586	147	900	2019	0.291	585	424	0.0	0.4	2.509	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	804	201	597	1747	0.460	803	1180	0.6	0.8	3.810	A
2 - Southwell Road	362	91	865	1067	0.340	362	535	0.4	0.5	5.102	A
3 - A6097	1225	306	362	1872	0.654	1222	865	1.1	1.9	5.514	A
4 - Nottingham Road	700	175	1077	1877	0.373	700	507	0.4	0.6	3.055	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	984	246	730	1651	0.596	982	1440	0.8	1.5	5.360	A
2 - Southwell Road	444	111	1058	953	0.465	442	654	0.5	0.9	7.024	A
3 - A6097	1501	375	442	1815	0.827	1490	1058	1.9	4.5	10.756	B
4 - Nottingham Road	858	214	1314	1688	0.508	856	619	0.6	1.0	4.316	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	984	246	732	1650	0.597	984	1447	1.5	1.5	5.411	A
2 - Southwell Road	444	111	1060	952	0.466	444	656	0.9	0.9	7.084	A
3 - A6097	1501	375	444	1814	0.827	1500	1060	4.5	4.6	11.408	B
4 - Nottingham Road	858	214	1322	1682	0.510	858	622	1.0	1.0	4.367	A



### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	804	201	600	1745	0.461	806	1191	1.5	0.9	3.847	A
2 - Southwell Road	362	91	868	1065	0.340	364	538	0.9	0.5	5.145	A
3 - A6097	1225	306	364	1871	0.655	1236	868	4.6	1.9	5.761	A
4 - Nottingham Road	700	175	1089	1868	0.375	702	511	1.0	0.6	3.091	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	673	168	501	1816	0.371	674	993	0.9	0.6	3.155	A
2 - Southwell Road	303	76	726	1148	0.264	304	450	0.5	0.4	4.268	A
3 - A6097	1026	257	304	1914	0.536	1029	726	1.9	1.2	4.084	A
4 - Nottingham Road	586	147	907	2013	0.291	587	426	0.6	0.4	2.525	A

## Proposed Layout - 2037LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	3.48	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2037LG	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	641	100.000
2 - Southwell Road		ONE HOUR	✓	320	100.000
3 - A6097		ONE HOUR	✓	818	100.000
4 - Nottingham Road		ONE HOUR	✓	550	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	89	430	121
	2 - Southwell Road	78	1	98	143
	3 - A6097	469	106	2	241
	4 - Nottingham Road	154	166	229	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.40	3.36	0.7	A	588	882
2 - Southwell Road	0.33	5.03	0.5	A	294	440
3 - A6097	0.48	3.75	0.9	A	751	1126
4 - Nottingham Road	0.28	2.32	0.4	A	505	757

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	483	121	379	1904	0.254	481	527	0.0	0.3	2.528	A

2 - Southwell Road	241	60	589	1229	0.196	240	272	0.0	0.2	3.637	A
3 - A6097	616	154	259	1946	0.316	614	570	0.0	0.5	2.699	A
4 - Nottingham Road	414	104	493	2344	0.177	413	380	0.0	0.2	1.864	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	576	144	454	1850	0.311	576	631	0.3	0.5	2.825	A
2 - Southwell Road	288	72	704	1161	0.248	287	325	0.2	0.3	4.118	A
3 - A6097	735	184	310	1909	0.385	735	682	0.5	0.6	3.063	A
4 - Nottingham Road	494	124	590	2266	0.218	494	454	0.2	0.3	2.031	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	706	176	556	1777	0.397	705	772	0.5	0.7	3.358	A
2 - Southwell Road	352	88	862	1068	0.330	352	398	0.3	0.5	5.021	A
3 - A6097	901	225	379	1860	0.484	899	835	0.6	0.9	3.742	A
4 - Nottingham Road	606	151	722	2161	0.280	605	556	0.3	0.4	2.314	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	706	176	556	1776	0.397	706	773	0.7	0.7	3.361	A
2 - Southwell Road	352	88	863	1068	0.330	352	399	0.5	0.5	5.033	A
3 - A6097	901	225	380	1860	0.484	901	836	0.9	0.9	3.753	A
4 - Nottingham Road	606	151	723	2160	0.280	606	557	0.4	0.4	2.315	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	576	144	454	1850	0.312	577	632	0.7	0.5	2.832	A
2 - Southwell Road	288	72	706	1160	0.248	288	326	0.5	0.3	4.134	A
3 - A6097	735	184	311	1909	0.385	737	683	0.9	0.6	3.073	A
4 - Nottingham Road	494	124	592	2265	0.218	495	456	0.4	0.3	2.034	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	483	121	380	1903	0.254	483	529	0.5	0.3	2.535	A
2 - Southwell Road	241	60	591	1228	0.196	241	273	0.3	0.2	3.653	A
3 - A6097	616	154	260	1945	0.317	616	572	0.6	0.5	2.710	A
4 - Nottingham Road	414	104	495	2342	0.177	414	381	0.3	0.2	1.869	A

## Proposed Layout - 2037LG, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.85	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2037LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	63	100.000
2 - Southwell Road		ONE HOUR	✓	32	100.000
3 - A6097		ONE HOUR	✓	80	100.000
4 - Nottingham Road		ONE HOUR	✓	53	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	9	42	12
2 - Southwell Road	8	0	10	14
3 - A6097	46	10	0	24
4 - Nottingham Road	15	16	22	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.03	1.86	0.0	A	58	87
2 - Southwell Road	0.02	2.45	0.0	A	29	44
3 - A6097	0.04	1.90	0.0	A	73	110
4 - Nottingham Road	0.02	1.41	0.0	A	49	73

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	47	12	36	2151	0.022	47	52	0.0	0.0	1.831	A
2 - Southwell Road	24	6	57	1541	0.016	24	26	0.0	0.0	2.406	A
3 - A6097	60	15	26	2112	0.029	60	56	0.0	0.0	1.864	A
4 - Nottingham Road	40	10	48	2699	0.015	40	38	0.0	0.0	1.388	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	57	14	43	2146	0.026	57	62	0.0	0.0	1.843	A
2 - Southwell Road	29	7	68	1534	0.019	29	31	0.0	0.0	2.424	A
3 - A6097	72	18	31	2109	0.034	72	67	0.0	0.0	1.878	A
4 - Nottingham Road	48	12	58	2691	0.018	48	45	0.0	0.0	1.396	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	69	17	53	2139	0.032	69	76	0.0	0.0	1.861	A
2 - Southwell Road	35	9	84	1525	0.023	35	39	0.0	0.0	2.450	A
3 - A6097	88	22	37	2104	0.042	88	81	0.0	0.0	1.897	A
4 - Nottingham Road	58	15	70	2681	0.022	58	55	0.0	0.0	1.408	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	69	17	53	2139	0.032	69	76	0.0	0.0	1.861	A
2 - Southwell Road	35	9	84	1525	0.023	35	39	0.0	0.0	2.450	A
3 - A6097	88	22	37	2104	0.042	88	81	0.0	0.0	1.897	A
4 - Nottingham Road	58	15	70	2681	0.022	58	55	0.0	0.0	1.408	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	57	14	43	2146	0.026	57	62	0.0	0.0	1.846	A
2 - Southwell Road	29	7	68	1534	0.019	29	31	0.0	0.0	2.426	A
3 - A6097	72	18	31	2109	0.034	72	67	0.0	0.0	1.881	A
4 - Nottingham Road	48	12	58	2691	0.018	48	45	0.0	0.0	1.399	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	47	12	36	2151	0.022	47	52	0.0	0.0	1.833	A
2 - Southwell Road	24	6	57	1541	0.016	24	26	0.0	0.0	2.409	A

3 - A6097	60	15	26	2112	0.029	60	56	0.0	0.0	1.867	A
4 - Nottingham Road	40	10	48	2699	0.015	40	38	0.0	0.0	1.388	A

## Proposed Layout - 2023HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D21 - 2023HG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	19.01	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D21	2023HG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1390	100.000
2 - Southwell Road		ONE HOUR	✓	436	100.000
3 - A6097		ONE HOUR	✓	1277	100.000
4 - Nottingham Road		ONE HOUR	✓	741	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	2	185	819	384
From 2 - Southwell Road	80	0	82	274
From 3 - A6097	833	128	0	316
From 4 - Nottingham Road	252	218	270	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From 1 - Epperstone By-Pass	0	0	0	0
From 2 - Southwell Road	0	0	0	0
From 3 - A6097	0	0	0	0
From 4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.91	21.55	8.6	C	1390	1390
2 - Southwell Road	0.77	24.85	3.2	C	436	436
3 - A6097	0.91	23.23	8.5	C	1277	1277
4 - Nottingham Road	0.45	3.57	0.8	A	741	741

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1250	312	554	1778	0.703	1246	1046	1.3	2.3	6.712	A
2 - Southwell Road	392	98	1323	797	0.492	390	476	0.5	0.9	8.810	A
3 - A6097	1148	287	664	1657	0.693	1144	1050	1.2	2.2	6.965	A
4 - Nottingham Road	666	167	934	1991	0.335	666	873	0.4	0.5	2.714	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone By-Pass	1530	383	676	1690	0.906	1508	1269	2.3	7.9	17.976	C
2 - Southwell Road	480	120	1605	632	0.760	472	579	0.9	2.9	21.635	C
3 - A6097	1406	352	803	1557	0.903	1384	1274	2.2	7.6	18.842	C
4 - Nottingham Road	816	204	1131	1835	0.445	815	1057	0.5	0.8	3.527	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1530	383	679	1688	0.907	1527	1282	7.9	8.6	21.546	C
2 - Southwell Road	480	120	1622	622	0.772	479	584	2.9	3.2	24.854	C
3 - A6097	1406	352	814	1550	0.907	1402	1287	7.6	8.5	23.226	C
4 - Nottingham Road	816	204	1145	1823	0.448	816	1071	0.8	0.8	3.574	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1250	312	558	1775	0.704	1274	1067	8.6	2.4	7.531	A
2 - Southwell Road	392	98	1349	782	0.501	401	483	3.2	1.0	9.630	A
3 - A6097	1148	287	680	1645	0.698	1173	1069	8.5	2.4	7.994	A
4 - Nottingham Road	666	167	958	1973	0.338	667	895	0.8	0.5	2.762	A

## Proposed Layout - 2023HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	19.12	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D22	2023HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1017	100.000
2 - Southwell Road		ONE HOUR	✓	470	100.000
3 - A6097		ONE HOUR	✓	1534	100.000
4 - Nottingham Road		ONE HOUR	✓	904	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	201	668	147
	2 - Southwell Road	147	0	144	179
	3 - A6097	1062	164	1	307
	4 - Nottingham Road	307	340	257	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.71	7.92	2.4	A	933	1400
2 - Southwell Road	0.59	9.92	1.4	A	431	647
3 - A6097	0.96	36.71	16.3	E	1408	2111
4 - Nottingham Road	0.65	6.65	1.8	A	830	1244

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	766	191	572	1765	0.434	763	1136	0.0	0.8	3.581	A
2 - Southwell Road	354	88	805	1101	0.321	352	529	0.0	0.5	4.792	A
3 - A6097	1155	289	355	1877	0.615	1149	802	0.0	1.6	4.899	A
4 - Nottingham Road	681	170	1030	1915	0.355	678	474	0.0	0.5	2.905	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	914	229	684	1684	0.543	913	1359	0.8	1.2	4.653	A
2 - Southwell Road	423	106	964	1008	0.419	422	632	0.5	0.7	6.124	A
3 - A6097	1379	345	425	1827	0.755	1373	960	1.6	3.0	7.838	A
4 - Nottingham Road	813	203	1231	1754	0.463	811	567	0.5	0.9	3.813	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1120	280	832	1577	0.710	1115	1640	1.2	2.4	7.703	A
2 - Southwell Road	517	129	1178	883	0.586	515	770	0.7	1.4	9.711	A
3 - A6097	1689	422	519	1760	0.960	1648	1173	3.0	13.3	25.730	D
4 - Nottingham Road	995	249	1480	1556	0.640	992	687	0.9	1.7	6.345	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1120	280	838	1574	0.712	1120	1662	2.4	2.4	7.920	A
2 - Southwell Road	517	129	1182	880	0.588	517	775	1.4	1.4	9.918	A
3 - A6097	1689	422	522	1758	0.961	1677	1178	13.3	16.3	36.709	E
4 - Nottingham Road	995	249	1505	1536	0.648	995	695	1.7	1.8	6.648	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	914	229	693	1678	0.545	919	1402	2.4	1.2	4.777	A
2 - Southwell Road	423	106	970	1005	0.421	425	642	1.4	0.7	6.241	A
3 - A6097	1379	345	429	1825	0.756	1431	967	16.3	3.2	10.304	B
4 - Nottingham Road	813	203	1279	1716	0.473	816	581	1.8	0.9	4.015	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	766	191	575	1762	0.434	767	1147	1.2	0.8	3.623	A
2 - Southwell Road	354	88	810	1099	0.322	355	532	0.7	0.5	4.847	A
3 - A6097	1155	289	358	1875	0.616	1161	807	3.2	1.6	5.085	A
4 - Nottingham Road	681	170	1041	1906	0.357	682	478	0.9	0.6	2.945	A

## Proposed Layout - 2023HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	4.02	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D23	2023HG	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	720	100.000
2 - Southwell Road		ONE HOUR	✓	370	100.000
3 - A6097		ONE HOUR	✓	902	100.000
4 - Nottingham Road		ONE HOUR	✓	619	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	105	473	141
	2 - Southwell Road	92	1	109	168
	3 - A6097	522	119	3	258
	4 - Nottingham Road	180	195	242	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.46	3.83	0.8	A	661	991
2 - Southwell Road	0.40	5.90	0.7	A	340	509
3 - A6097	0.55	4.39	1.2	A	828	1242
4 - Nottingham Road	0.33	2.56	0.5	A	568	852

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	542	136	422	1873	0.289	540	597	0.0	0.4	2.698	A

2 - Southwell Road	279	70	647	1194	0.233	277	315	0.0	0.3	3.921	A
3 - A6097	679	170	304	1914	0.355	677	621	0.0	0.5	2.905	A
4 - Nottingham Road	466	117	554	2295	0.203	465	427	0.0	0.3	1.966	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	647	162	505	1813	0.357	647	714	0.4	0.6	3.084	A
2 - Southwell Road	333	83	774	1120	0.297	332	377	0.3	0.4	4.567	A
3 - A6097	811	203	364	1871	0.433	810	743	0.5	0.8	3.389	A
4 - Nottingham Road	556	139	663	2208	0.252	556	511	0.3	0.3	2.179	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	793	198	618	1732	0.458	792	874	0.6	0.8	3.824	A
2 - Southwell Road	407	102	948	1018	0.400	406	462	0.4	0.7	5.878	A
3 - A6097	993	248	445	1813	0.548	991	909	0.8	1.2	4.373	A
4 - Nottingham Road	682	170	811	2090	0.326	681	625	0.3	0.5	2.554	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	793	198	619	1731	0.458	793	875	0.8	0.8	3.835	A
2 - Southwell Road	407	102	949	1017	0.401	407	462	0.7	0.7	5.903	A
3 - A6097	993	248	446	1812	0.548	993	911	1.2	1.2	4.393	A
4 - Nottingham Road	682	170	813	2089	0.326	682	626	0.5	0.5	2.558	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	647	162	506	1812	0.357	648	716	0.8	0.6	3.094	A
2 - Southwell Road	333	83	776	1119	0.297	334	378	0.7	0.4	4.592	A
3 - A6097	811	203	365	1870	0.434	813	745	1.2	0.8	3.411	A
4 - Nottingham Road	556	139	665	2206	0.252	557	513	0.5	0.3	2.184	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	542	136	423	1872	0.290	543	599	0.6	0.4	2.711	A
2 - Southwell Road	279	70	650	1193	0.234	279	317	0.4	0.3	3.942	A
3 - A6097	679	170	305	1913	0.355	680	623	0.8	0.6	2.921	A
4 - Nottingham Road	466	117	556	2293	0.203	466	429	0.3	0.3	1.972	A

## Proposed Layout - 2023HG, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.86	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D24	2023HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	70	100.000
2 - Southwell Road		ONE HOUR	✓	36	100.000
3 - A6097		ONE HOUR	✓	88	100.000
4 - Nottingham Road		ONE HOUR	✓	61	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To				
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	10	46	14
	2 - Southwell Road	9	0	11	16
	3 - A6097	51	12	0	25
	4 - Nottingham Road	18	19	24	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	1	10	2
	2 - Southwell Road	1	0	1	2
	3 - A6097	10	1	0	2
	4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.04	1.87	0.0	A	64	96
2 - Southwell Road	0.03	2.47	0.0	A	33	50
3 - A6097	0.05	1.91	0.1	A	81	121
4 - Nottingham Road	0.03	1.41	0.0	A	56	84

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	53	13	41	2147	0.025	53	59	0.0	0.0	1.837	A
2 - Southwell Road	27	7	63	1537	0.018	27	31	0.0	0.0	2.417	A
3 - A6097	66	17	29	2110	0.031	66	61	0.0	0.0	1.872	A
4 - Nottingham Road	46	11	54	2694	0.017	46	41	0.0	0.0	1.393	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	63	16	49	2141	0.029	63	70	0.0	0.0	1.851	A
2 - Southwell Road	32	8	75	1530	0.021	32	37	0.0	0.0	2.437	A
3 - A6097	79	20	35	2105	0.038	79	73	0.0	0.0	1.888	A
4 - Nottingham Road	55	14	65	2686	0.020	55	49	0.0	0.0	1.402	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	77	19	61	2133	0.036	77	86	0.0	0.0	1.871	A
2 - Southwell Road	40	10	92	1520	0.026	40	45	0.0	0.0	2.466	A
3 - A6097	97	24	43	2100	0.046	97	89	0.0	0.1	1.910	A
4 - Nottingham Road	67	17	79	2674	0.025	67	61	0.0	0.0	1.415	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	77	19	61	2133	0.036	77	86	0.0	0.0	1.871	A
2 - Southwell Road	40	10	92	1520	0.026	40	45	0.0	0.0	2.466	A
3 - A6097	97	24	43	2100	0.046	97	89	0.1	0.1	1.910	A
4 - Nottingham Road	67	17	79	2674	0.025	67	61	0.0	0.0	1.415	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	63	16	49	2141	0.029	63	70	0.0	0.0	1.854	A
2 - Southwell Road	32	8	76	1530	0.021	32	37	0.0	0.0	2.437	A
3 - A6097	79	20	35	2105	0.038	79	73	0.1	0.0	1.891	A
4 - Nottingham Road	55	14	65	2686	0.020	55	49	0.0	0.0	1.402	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	53	13	41	2147	0.025	53	59	0.0	0.0	1.840	A
2 - Southwell Road	27	7	63	1537	0.018	27	31	0.0	0.0	2.417	A

3 - A6097	66	17	29	2109	0.03 1	66	61	0.0	0.0	1.87 2	A
4 - Nottingham Road	46	11	54	2694	0.01 7	46	41	0.0	0.0	1.39 3	A

## Proposed Layout - 2037HG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D25 - 2037HG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	97.32	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D25	2037HG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1577	100.000
2 - Southwell Road		ONE HOUR	✓	482	100.000
3 - A6097		ONE HOUR	✓	1444	100.000
4 - Nottingham Road		ONE HOUR	✓	881	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To				
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	2	202	931	442
	2 - Southwell Road	86	0	90	306
	3 - A6097	932	140	0	372
	4 - Nottingham Road	297	249	334	1

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	1.08	139.08	75.4	F	1577	1577
2 - Southwell Road	0.99	96.55	13.9	F	482	482
3 - A6097	1.05	108.61	52.7	F	1444	1444
4 - Nottingham Road	0.55	4.48	1.2	A	881	881

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1418	354	649	1709	0.829	1407	1177	1.9	4.5	11.548	B
2 - Southwell Road	433	108	1528	677	0.640	430	529	0.8	1.7	14.334	B
3 - A6097	1298	325	747	1598	0.812	1289	1211	1.8	4.1	11.328	B
4 - Nottingham Road	792	198	1035	1911	0.415	791	1000	0.5	0.7	3.212	A

#### 08:15 - 08:30

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side) (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	1736	434	786	1611	1.078	1585	1376	4.5	42.4	63.272	F
2 - Southwell Road	531	133	1750	547	0.971	500	621	1.7	9.4	56.803	F
3 - A6097	1590	397	854	1522	1.045	1484	1396	4.1	30.5	52.503	F
4 - Nottingham Road	970	242	1193	1785	0.544	968	1145	0.7	1.2	4.399	A

### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1736	434	788	1609	1.079	1604	1389	42.4	75.4	139.078	F
2 - Southwell Road	531	133	1768	536	0.990	513	625	9.4	13.9	96.552	F
3 - A6097	1590	397	870	1510	1.053	1501	1411	30.5	52.7	108.613	F
4 - Nottingham Road	970	242	1208	1773	0.547	970	1163	1.2	1.2	4.482	A

### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	1418	354	669	1695	0.837	1673	1307	75.4	11.6	98.335	F
2 - Southwell Road	433	108	1760	541	0.801	470	582	13.9	4.8	59.761	F
3 - A6097	1298	325	854	1522	0.853	1478	1376	52.7	7.9	75.188	F
4 - Nottingham Road	792	198	1183	1793	0.442	794	1148	1.2	0.8	3.607	A

## Proposed Layout - 2037HG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	102.90	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D26	2037HG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1180	100.000
2 - Southwell Road		ONE HOUR	✓	535	100.000
3 - A6097		ONE HOUR	✓	1770	100.000
4 - Nottingham Road		ONE HOUR	✓	1067	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	223	772	184
	2 - Southwell Road	163	0	162	210
	3 - A6097	1214	182	1	373
	4 - Nottingham Road	363	388	316	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.87	18.09	6.2	C	1083	1624
2 - Southwell Road	0.78	21.74	3.4	C	491	736
3 - A6097	1.15	239.88	137.1	F	1624	2436
4 - Nottingham Road	0.77	10.18	3.2	B	979	1469

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	888	222	665	1698	0.523	884	1302	0.0	1.1	4.400	A
2 - Southwell Road	403	101	955	1014	0.397	400	594	0.0	0.7	5.842	A
3 - A6097	1333	333	418	1833	0.727	1322	937	0.0	2.6	6.919	A
4 - Nottingham Road	803	201	1166	1806	0.445	800	574	0.0	0.8	3.556	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1061	265	794	1605	0.661	1058	1551	1.1	1.9	6.535	A
2 - Southwell Road	481	120	1142	904	0.532	479	709	0.7	1.1	8.439	A
3 - A6097	1591	398	500	1774	0.897	1572	1121	2.6	7.4	16.447	C
4 - Nottingham Road	959	240	1388	1629	0.589	957	684	0.8	1.4	5.333	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1299	325	945	1496	0.868	1284	1732	1.9	5.8	15.889	C
2 - Southwell Road	589	147	1388	759	0.776	581	841	1.1	3.2	19.348	C
3 - A6097	1949	487	606	1698	1.148	1687	1362	7.4	72.9	94.388	F
4 - Nottingham Road	1175	294	1509	1532	0.767	1168	784	1.4	3.1	9.700	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1299	325	950	1493	0.870	1298	1740	5.8	6.2	18.086	C
2 - Southwell Road	589	147	1401	752	0.784	588	846	3.2	3.4	21.738	C
3 - A6097	1949	487	613	1693	1.151	1692	1376	72.9	137.1	227.538	F
4 - Nottingham Road	1175	294	1516	1527	0.769	1174	790	3.1	3.2	10.175	B

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1061	265	818	1588	0.668	1077	1681	6.2	2.1	7.279	A
2 - Southwell Road	481	120	1161	893	0.539	490	735	3.4	1.2	9.120	A
3 - A6097	1591	398	510	1766	0.901	1754	1140	137.1	96.5	239.876	F
4 - Nottingham Road	959	240	1534	1512	0.634	965	730	3.2	1.8	6.647	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	888	222	708	1667	0.533	892	1569	2.1	1.2	4.668	A
2 - Southwell Road	403	101	963	1009	0.399	405	637	1.2	0.7	5.982	A
3 - A6097	1333	333	422	1829	0.728	1707	946	96.5	3.0	80.690	F
4 - Nottingham Road	803	201	1471	1563	0.514	806	658	1.8	1.1	4.777	A

## Proposed Layout - 2037HG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	4.98	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D27	2037HG	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	820	100.000
2 - Southwell Road		ONE HOUR	✓	411	100.000
3 - A6097		ONE HOUR	✓	1021	100.000
4 - Nottingham Road		ONE HOUR	✓	720	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	114	536	169
	2 - Southwell Road	100	1	120	190
	3 - A6097	585	130	3	303
	4 - Nottingham Road	211	219	288	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.54	4.71	1.2	A	752	1129
2 - Southwell Road	0.49	7.56	0.9	A	377	566
3 - A6097	0.64	5.60	1.7	A	937	1405
4 - Nottingham Road	0.39	2.94	0.6	A	661	991

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	617	154	483	1829	0.338	615	673	0.0	0.5	2.960	A



2 - Southwell Road	309	77	750	1134	0.273	308	348	0.0	0.4	4.349	A
3 - A6097	769	192	347	1883	0.408	766	711	0.0	0.7	3.215	A
4 - Nottingham Road	542	136	615	2246	0.241	541	498	0.0	0.3	2.110	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	737	184	578	1761	0.419	736	805	0.5	0.7	3.510	A
2 - Southwell Road	369	92	897	1048	0.353	369	417	0.4	0.5	5.298	A
3 - A6097	918	229	416	1834	0.500	917	850	0.7	1.0	3.919	A
4 - Nottingham Road	647	162	736	2150	0.301	647	596	0.3	0.4	2.395	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	903	226	707	1668	0.541	901	985	0.7	1.2	4.684	A
2 - Southwell Road	453	113	1098	930	0.487	451	510	0.5	0.9	7.497	A
3 - A6097	1124	281	508	1768	0.636	1121	1041	1.0	1.7	5.543	A
4 - Nottingham Road	793	198	900	2018	0.393	792	729	0.4	0.6	2.934	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	903	226	708	1667	0.542	903	988	1.2	1.2	4.711	A
2 - Southwell Road	453	113	1100	929	0.487	452	511	0.9	0.9	7.562	A
3 - A6097	1124	281	510	1767	0.636	1124	1043	1.7	1.7	5.600	A
4 - Nottingham Road	793	198	903	2016	0.393	793	731	0.6	0.6	2.941	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	737	184	579	1760	0.419	739	809	1.2	0.7	3.531	A
2 - Southwell Road	369	92	900	1046	0.353	371	418	0.9	0.6	5.348	A
3 - A6097	918	229	418	1833	0.501	921	853	1.7	1.0	3.960	A
4 - Nottingham Road	647	162	740	2147	0.302	648	599	0.6	0.4	2.404	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	617	154	485	1828	0.338	618	676	0.7	0.5	2.977	A
2 - Southwell Road	309	77	753	1132	0.273	310	350	0.6	0.4	4.382	A
3 - A6097	769	192	349	1881	0.409	770	714	1.0	0.7	3.242	A
4 - Nottingham Road	542	136	618	2244	0.242	543	501	0.4	0.3	2.118	A

## Proposed Layout - 2037HG, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	1.87	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D28	2037HG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	80	100.000
2 - Southwell Road		ONE HOUR	✓	41	100.000
3 - A6097		ONE HOUR	✓	100	100.000
4 - Nottingham Road		ONE HOUR	✓	70	100.000

## Origin-Destination Data

## Demand (PCU/hr)

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From				
1 - Epperstone By-Pass	0	11	52	17
2 - Southwell Road	10	0	12	19
3 - A6097	57	13	0	30
4 - Nottingham Road	21	21	28	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From				
1 - Epperstone By-Pass	0	1	10	2
2 - Southwell Road	1	0	1	2
3 - A6097	10	1	0	2
4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.04	1.89	0.0	A	73	110
2 - Southwell Road	0.03	2.49	0.0	A	38	56
3 - A6097	0.05	1.93	0.1	A	92	138
4 - Nottingham Road	0.03	1.42	0.0	A	64	96

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	60	15	47	2143	0.028	60	66	0.0	0.0	1.846	A
2 - Southwell Road	31	8	73	1532	0.020	31	34	0.0	0.0	2.433	A
3 - A6097	75	19	35	2106	0.036	75	69	0.0	0.0	1.883	A
4 - Nottingham Road	53	13	60	2689	0.020	53	50	0.0	0.0	1.399	A

#### 23:00 - 23:15

Arm	Total Demand	Junction	Circulating flow (PCU/hr)	Capacity	RFC	Throughput (PCU/hr)	Throughput (exit	Start queue	End queue	Delay (s)	Unsignalised level of service
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	(PCU/hr)	Arrivals (PCU)		(PCU/hr)			side (PCU/hr)	(PCU)	(PCU)		
1 - Epperstone Bypass	72	18	56	2137	0.034	72	79	0.0	0.0	1.863	A
2 - Southwell Road	37	9	87	1523	0.024	37	40	0.0	0.0	2.456	A
3 - A6097	90	22	41	2101	0.043	90	83	0.0	0.0	1.901	A
4 - Nottingham Road	63	16	72	2680	0.023	63	59	0.0	0.0	1.410	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	88	22	68	2128	0.041	88	97	0.0	0.0	1.885	A
2 - Southwell Road	45	11	107	1512	0.030	45	50	0.0	0.0	2.489	A
3 - A6097	110	28	51	2094	0.053	110	101	0.0	0.1	1.927	A
4 - Nottingham Road	77	19	88	2667	0.029	77	73	0.0	0.0	1.425	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	88	22	68	2128	0.041	88	97	0.0	0.0	1.886	A
2 - Southwell Road	45	11	107	1512	0.030	45	50	0.0	0.0	2.490	A
3 - A6097	110	28	51	2094	0.053	110	101	0.1	0.1	1.927	A
4 - Nottingham Road	77	19	88	2667	0.029	77	73	0.0	0.0	1.425	A

### 23:45 - 00:00

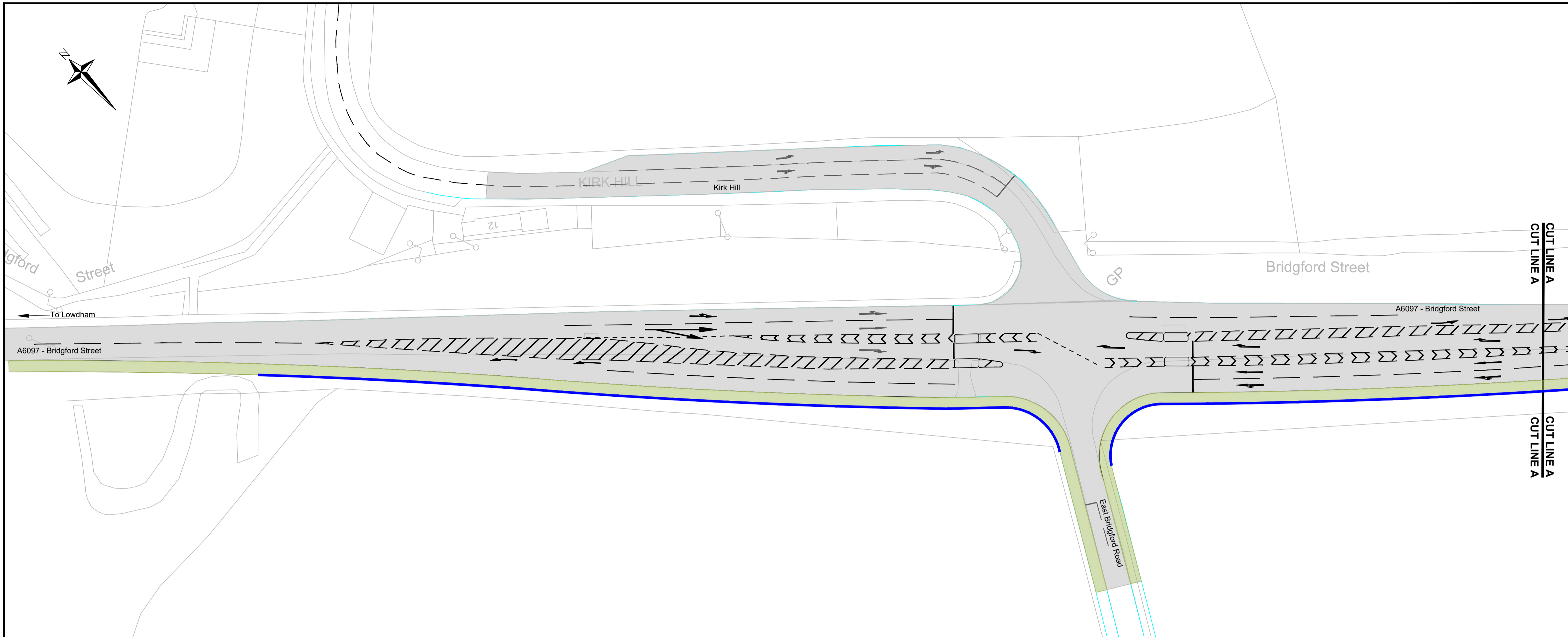
Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	72	18	56	2137	0.034	72	79	0.0	0.0	1.866	A
2 - Southwell Road	37	9	87	1523	0.024	37	40	0.0	0.0	2.456	A
3 - A6097	90	22	41	2101	0.043	90	83	0.1	0.0	1.904	A
4 - Nottingham Road	63	16	72	2680	0.023	63	59	0.0	0.0	1.412	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone Bypass	60	15	47	2143	0.028	60	66	0.0	0.0	1.846	A
2 - Southwell Road	31	8	73	1532	0.020	31	34	0.0	0.0	2.433	A

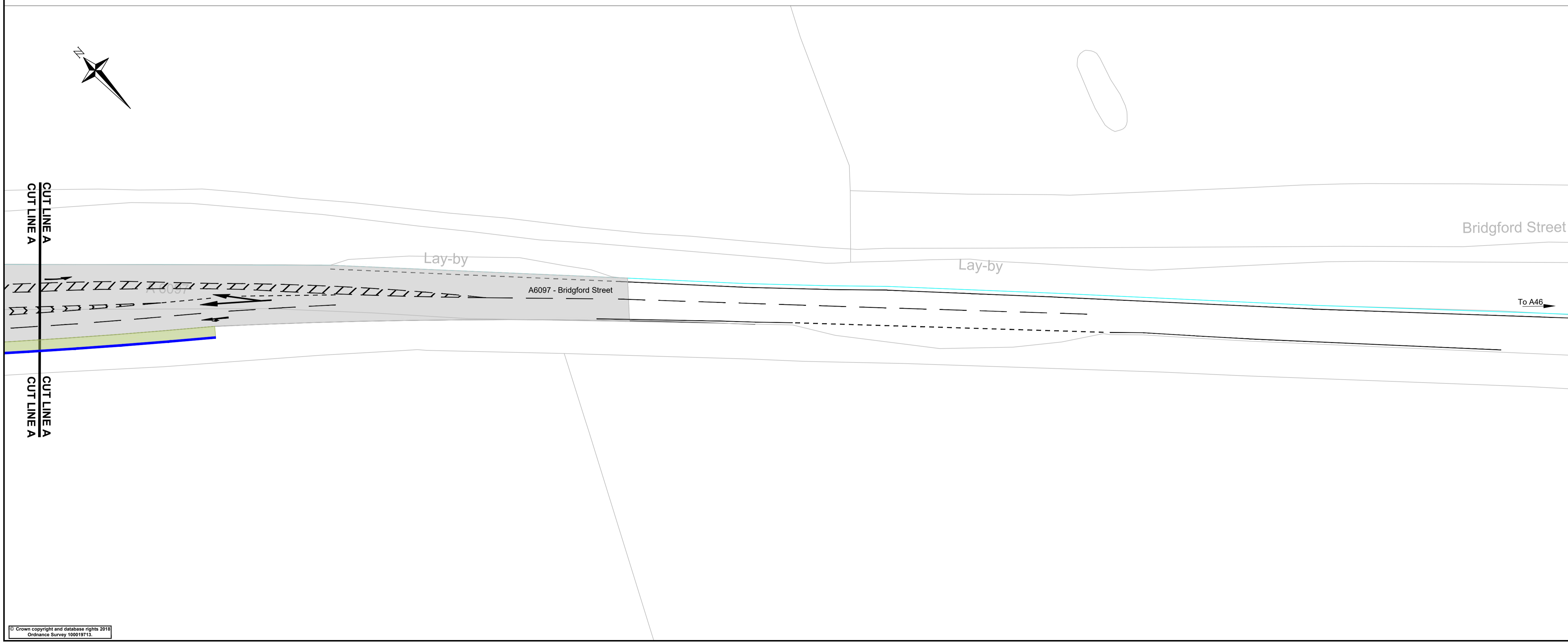
<b>3 - A6097</b>	75	19	35	2106	0.03 6	75	69	0.0	0.0	1.88 6	A
<b>4 - Nottingham Road</b>	53	13	60	2689	0.02 0	53	50	0.0	0.0	1.40 2	A

# Appendix W – Kirk Hill Scheme Drawings and LINSIG Outputs



- NOTES**
1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
  2. Do not scale from this drawing.
  3. All measurements are given in metres unless otherwise stated.
  4. For accident data refer to Feasibility Study document.
  5. Refer to drawing HW 30676/014 for statutory undertakers information.

- KEY**
- Proposed carriageway
  - Proposed grass verge
  - Proposed retaining wall



Rev.	Description	Drawn	Ch'kd	Auth	Date
Project					
A6097 Gunthorpe - East Bridgford					
Status		Project No.			
For Info		30676			
Drawing Title					
Proposed Improvements to Kirk Hill Junction					
Scale		Drawn		Date	
1:500@A1		JD			
		Auth		Date	
		JD			
Drawing No.				Rev.	
HW 30676/006				0	

in partnership with

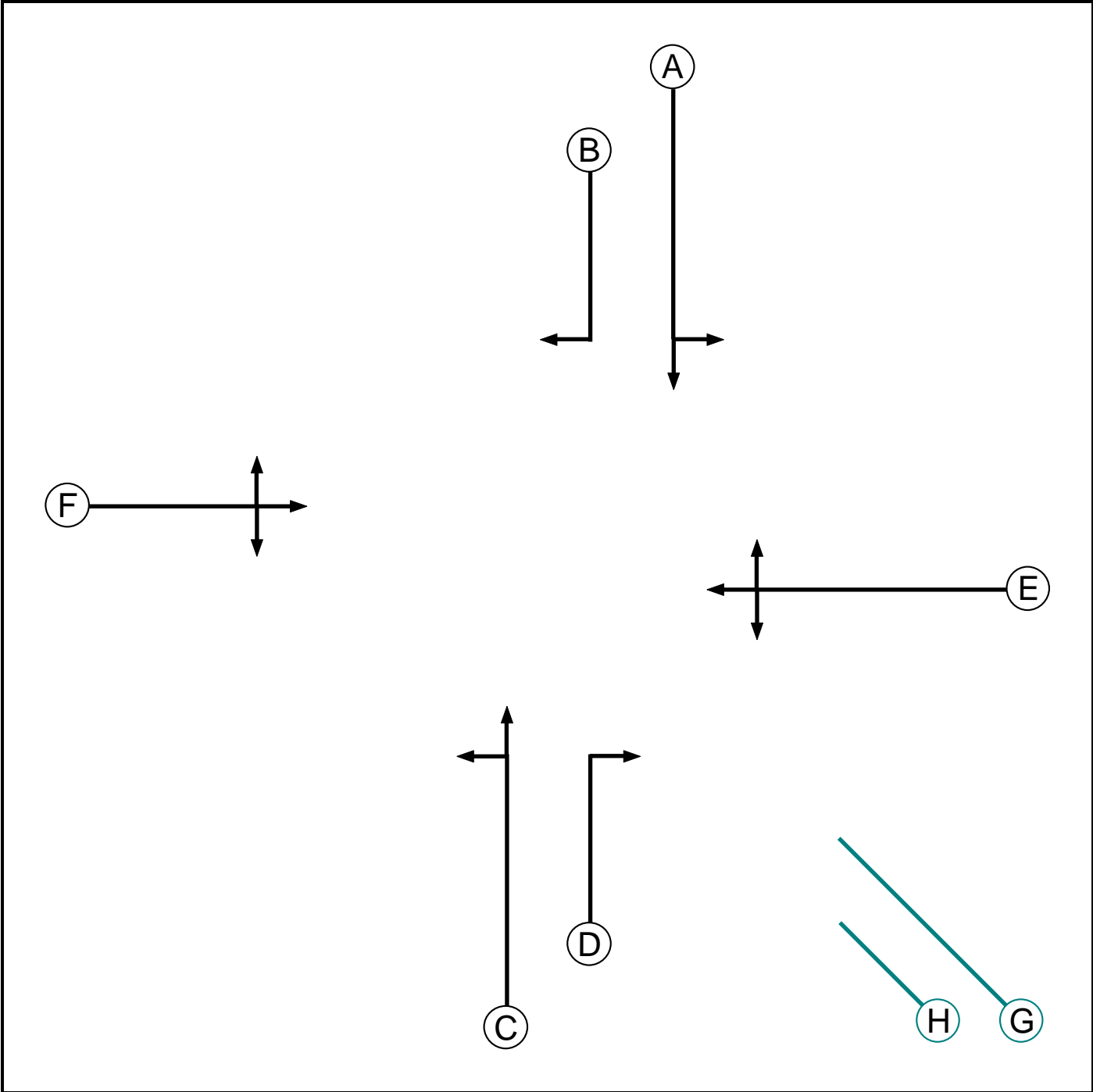



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Phase Diagram





## Network Results

Scenario 1: 'am 2023' (FG1: 'am 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	112.3%	115	0	5	122.0	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	112.3%	115	0	5	122.0	-	-
1/1	A6097 NTH Left Ahead	U	A		1	70	-	1263	1900	1124	112.3%	-	-	-	89.8	256.0	120.4
1/2	A6097 NTH Right	U	B		1	7	-	63	1800	120	52.5%	-	-	-	1.5	85.2	2.6
2/1	KIRK HILL Right Left Ahead	O	E		1	19	-	213	1800	196	108.9%	106	0	5	16.6	281.2	20.5
3/1	A6097 STH Ahead Left	U	C		1	70	-	988	1900	1124	87.9%	-	-	-	9.2	33.4	31.4
3/2	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	19	-	162	1800	300	54.0%	9	0	0	2.6	58.7	5.5
5/1	A6097N exit	U	-		-	-	-	1226	1800	1800	67.6%	-	-	-	1.3	3.7	26.7
6/1	KH exit	U	-		-	-	-	114	1800	1800	5.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1233	1800	1800	61.1%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	122	1800	1800	6.5%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):				-24.8	Total Delay for Signalled Lanes (pcuHr):		119.88		Cycle Time (s):		120			
			PRC Over All Lanes (%):				-24.8	Total Delay Over All Lanes(pcuHr):		121.99							

Scenario 2: 'pm 2023' (FG2: 'pm 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	101.5%	84	0	21	62.6	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	101.5%	84	0	21	62.6	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	1012	1900	997	101.5%	-	-	-	28.8	102.3	54.2
1/2	A6097 NTH Right	U	B		1	7	-	60	1800	120	50.0%	-	-	-	1.4	83.6	2.4
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	163	1800	175	93.3%	77	0	21	6.4	141.8	9.5
3/1	A6097 STH Ahead Left	U	C		1	62	-	975	1900	997	97.7%	-	-	-	18.5	68.3	42.7
3/2	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	314	1800	420	74.8%	7	0	0	5.2	59.3	11.1
5/1	A6097N exit	U	-		-	-	-	1320	1800	1800	73.3%	-	-	-	1.6	4.5	29.9
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.7%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	978	1800	1800	53.6%	-	-	-	0.6	2.2	0.6
8/1	NL exit	U	-		-	-	-	109	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-12.7		Total Delay for Signalled Lanes (pcuHr):		60.33		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-12.7		Total Delay Over All Lanes (pcuHr):		62.61								

Scenario 3: 'pm 2023+suppressed' (FG3: 'pm 2023 + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	142.9%	72	0	35	399.6	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	142.9%	72	0	35	399.6	-	-
1/1	A6097 NTH Left Ahead	U	A		1	63	-	1179	1900	1013	116.3%	-	-	-	104.6	319.3	131.1
1/2	A6097 NTH Right	U	B		1	7	-	60	1800	120	50.0%	-	-	-	1.4	83.6	2.4
2/1	KIRK HILL Right Left Ahead	O	E		1	26	-	214	1800	150	142.9%	65	0	35	40.8	686.2	44.4
3/1	A6097 STH Ahead Left	U	C		1	63	-	1428	1900	1013	140.9%	-	-	-	244.7	617.0	270.5
3/2	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	26	-	314	1800	405	77.5%	7	0	0	5.5	62.7	11.4
5/1	A6097N exit	U	-		-	-	-	1818	1800	1800	75.7%	-	-	-	1.9	4.9	31.9
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.3%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1151	1800	1800	54.8%	-	-	-	0.6	2.2	0.6
8/1	NL exit	U	-		-	-	-	109	1800	1800	5.2%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-58.7		Total Delay for Signalled Lanes (pcuHr):		397.04		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-58.7		Total Delay Over All Lanes(pcuHr):		399.58								

Scenario 4: 'ip 2023' (FG4: 'ip 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	58.3%	66	0	0	12.0	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	58.3%	66	0	0	12.0	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	690	1900	1203	57.3%	-	-	-	3.1	16.2	13.9
1/2	A6097 NTH Right	U	B		1	7	-	44	1800	120	36.7%	-	-	-	0.9	77.1	1.7
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	122	1800	211	57.8%	60	0	0	2.4	70.7	4.5
3/1	A6097 STH Ahead Left	U	C		1	75	-	701	1900	1203	58.3%	-	-	-	3.2	16.4	14.1
3/2	A6097 STH Right	U	D		1	7	-	19	1800	120	15.8%	-	-	-	0.4	70.7	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	74	1800	225	32.9%	6	0	0	1.2	59.8	2.5
5/1	A6097N exit	U	-		-	-	-	796	1800	1800	44.2%	-	-	-	0.4	1.9	10.0
6/1	KH exit	U	-		-	-	-	97	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	677	1800	1800	37.6%	-	-	-	0.3	1.6	0.3
8/1	NL exit	U	-		-	-	-	80	1800	1800	4.4%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):				54.5	Total Delay for Signalled Lanes (pcuHr):				11.23	Cycle Time (s): 120				
			PRC Over All Lanes (%):				54.5	Total Delay Over All Lanes(pcuHr):				12.00					

Scenario 5: 'op 2023' (FG5: 'op 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)			
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	4.8%	6	0	0	0.7	-	-			
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	4.8%	6	0	0	0.7	-	-			
1/1	A6097 NTH Left Ahead	U	A		1	76	-	59	1900	1219	4.8%	-	-	-	0.2	9.5	0.7			
1/2	A6097 NTH Right	U	B		1	7	-	4	1800	120	3.3%	-	-	-	0.1	68.2	0.1			
2/1	KIRK HILL Right Left Ahead	O	E		1	13	-	10	1800	210	4.8%	5	0	0	0.2	56.3	0.3			
3/1	A6097 STH Ahead Left	U	C		1	76	-	59	1900	1219	4.8%	-	-	-	0.2	9.5	0.7			
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1			
4/1	NEWTON LANE Left Ahead Right	O	F		1	13	-	7	1800	210	3.3%	1	0	0	0.1	56.1	0.2			
5/1	A6097N exit	U	-		-	-	-	67	1800	1800	3.7%	-	-	-	0.0	1.0	0.0			
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0			
7/1	A6097S exit	U	-		-	-	-	58	1800	1800	3.2%	-	-	-	0.0	1.0	0.0			
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0			
		C1	PRC for Signalled Lanes (%):		1759.7		PRC Over All Lanes (%):		1759.7		Total Delay for Signalled Lanes (pcuHr):		0.69		Total Delay Over All Lanes(pcuHr):		0.73		Cycle Time (s): 120	

Scenario 6: 'am 2037' (FG6: 'am 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	123.6%	111	0	12	203.1	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	123.6%	111	0	12	203.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	70	-	1390	1900	1124	123.6%	-	-	-	159.3	412.7	190.7
1/2	A6097 NTH Right	U	B		1	7	-	68	1800	120	56.7%	-	-	-	1.7	88.1	2.8
2/1	KIRK HILL Right Left Ahead	O	E		1	19	-	222	1800	194	114.4%	100	0	12	21.8	352.8	25.7
3/1	A6097 STH Ahead Left	U	C		1	70	-	1073	1900	1124	95.4%	-	-	-	14.8	49.8	41.4
3/2	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	19	-	170	1800	300	56.7%	11	0	0	2.8	59.7	5.8
5/1	A6097N exit	U	-		-	-	-	1323	1800	1800	72.6%	-	-	-	1.7	4.6	33.0
6/1	KH exit	U	-		-	-	-	119	1800	1800	5.8%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1359	1800	1800	61.3%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	128	1800	1800	6.7%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-37.4		Total Delay for Signalled Lanes (pcuHr):		200.53		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-37.4		Total Delay Over All Lanes(pcuHr):		203.06								

Scenario 7: 'pm 2037' (FG7: 'pm 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	108.6%	77	0	26	109.1	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	108.6%	77	0	26	109.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	61	-	1053	1900	982	107.3%	-	-	-	54.4	185.9	79.4
1/2	A6097 NTH Right	U	B		1	7	-	66	1800	120	55.0%	-	-	-	1.6	86.9	2.7
2/1	KIRK HILL Right Left Ahead	O	E		1	28	-	169	1800	156	108.6%	71	0	26	13.6	289.9	16.7
3/1	A6097 STH Ahead Left	U	C		1	61	-	1003	1900	982	102.2%	-	-	-	31.4	112.7	56.2
3/2	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	28	-	338	1800	435	77.7%	6	0	0	5.7	60.4	12.2
5/1	A6097N exit	U	-		-	-	-	1384	1800	1800	75.2%	-	-	-	1.8	4.8	30.8
6/1	KH exit	U	-		-	-	-	125	1800	1800	6.7%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1011	1800	1800	52.4%	-	-	-	0.5	2.1	0.5
8/1	NL exit	U	-		-	-	-	112	1800	1800	6.0%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-20.6		Total Delay for Signalled Lanes (pcuHr):		106.70		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-20.6		Total Delay Over All Lanes (pcuHr):		109.13								



Scenario 8: 'pm 2037+suppressed' (FG8: 'pm 2037 + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	149.2%	77	0	30	478.7	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	149.2%	77	0	30	478.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	61	-	1220	1900	982	124.3%	-	-	-	144.7	427.0	170.3
1/2	A6097 NTH Right	U	B		1	7	-	66	1800	120	55.0%	-	-	-	1.6	86.9	2.7
2/1	KIRK HILL Right Left Ahead	O	E		1	28	-	220	1800	147	149.2%	71	0	30	45.5	744.4	49.2
3/1	A6097 STH Ahead Left	U	C		1	61	-	1456	1900	982	148.3%	-	-	-	278.7	689.1	303.0
3/2	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	28	-	338	1800	435	77.7%	6	0	0	5.7	60.4	12.2
5/1	A6097N exit	U	-		-	-	-	1882	1800	1800	75.5%	-	-	-	1.8	4.9	30.9
6/1	KH exit	U	-		-	-	-	125	1800	1800	6.2%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1184	1800	1800	52.8%	-	-	-	0.6	2.1	0.6
8/1	NL exit	U	-		-	-	-	112	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
C1			PRC for Signalled Lanes (%):		-65.8		Total Delay for Signalled Lanes (pcuHr):		476.21		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-65.8		Total Delay Over All Lanes(pcuHr):		478.67								

Scenario 9: 'ip 2037' (FG9: 'ip 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	64.8%	75	0	0	14.1	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	64.8%	75	0	0	14.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	777	1900	1203	64.6%	-	-	-	3.9	17.9	16.9
1/2	A6097 NTH Right	U	B		1	7	-	48	1800	120	40.0%	-	-	-	1.0	78.5	1.9
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	130	1800	201	64.8%	67	0	0	2.8	76.3	5.0
3/1	A6097 STH Ahead Left	U	C		1	75	-	775	1900	1203	64.4%	-	-	-	3.8	17.8	16.8
3/2	A6097 STH Right	U	D		1	7	-	19	1800	120	15.8%	-	-	-	0.4	70.7	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	79	1800	225	35.1%	8	0	0	1.3	60.3	2.7
5/1	A6097N exit	U	-		-	-	-	880	1800	1800	48.9%	-	-	-	0.5	2.1	12.7
6/1	KH exit	U	-		-	-	-	98	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	766	1800	1800	42.6%	-	-	-	0.4	1.7	0.4
8/1	NL exit	U	-		-	-	-	84	1800	1800	4.7%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):				38.8	Total Delay for Signalled Lanes (pcuHr):				13.19	Cycle Time (s): 120				
			PRC Over All Lanes (%):				38.8	Total Delay Over All Lanes(pcuHr):				14.13					

Scenario 10: 'op 2027' (FG10: 'op 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	5.5%	7	0	0	0.8	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	5.5%	7	0	0	0.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	66	1900	1203	5.5%	-	-	-	0.2	10.0	0.9
1/2	A6097 NTH Right	U	B		1	7	-	4	1800	120	3.3%	-	-	-	0.1	68.2	0.1
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	12	1800	225	5.3%	6	0	0	0.2	54.8	0.4
3/1	A6097 STH Ahead Left	U	C		1	75	-	66	1900	1203	5.5%	-	-	-	0.2	10.0	0.9
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	7	1800	225	3.1%	1	0	0	0.1	54.6	0.2
5/1	A6097N exit	U	-		-	-	-	75	1800	1800	4.2%	-	-	-	0.0	1.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	66	1800	1800	3.7%	-	-	-	0.0	1.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
C1			PRC for Signalled Lanes (%):		1540.9		Total Delay for Signalled Lanes (pcuHr):		0.77		Cycle Time (s):		120				
			PRC Over All Lanes (%):		1540.9		Total Delay Over All Lanes(pcuHr):		0.81								

Scenario 11: 'am 2023LG' (FG11: 'am 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	106.1%	108	0	15	78.3	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	106.1%	108	0	15	78.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	71	-	1210	1900	1140	106.1%	-	-	-	54.0	160.7	84.8
1/2	A6097 NTH Right	U	B		1	7	-	60	1800	120	50.0%	-	-	-	1.4	83.6	2.4
2/1	KIRK HILL Right Left Ahead	O	E		1	18	-	193	1800	190	101.7%	99	0	15	10.8	201.2	14.3
3/1	A6097 STH Ahead Left	U	C		1	71	-	947	1900	1140	83.1%	-	-	-	7.4	28.2	27.4
3/2	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	18	-	155	1800	285	54.4%	9	0	0	2.6	60.2	5.3
5/1	A6097N exit	U	-		-	-	-	1175	1800	1800	65.2%	-	-	-	1.1	3.4	23.5
6/1	KH exit	U	-		-	-	-	109	1800	1800	5.8%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1171	1800	1800	61.4%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	116	1800	1800	6.4%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-17.9		Total Delay for Signalled Lanes (pcuHr):		76.34		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-17.9		Total Delay Over All Lanes(pcuHr):		78.30								

Scenario 12: 'pm 2023LG+suppressed' (FG12: 'pm 2023LG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	134.5%	84	0	33	318.4	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	134.5%	84	0	33	318.4	-	-
1/1	A6097 NTH Left Ahead	U	A		1	63	-	1123	1900	1013	110.8%	-	-	-	74.3	238.3	100.6
1/2	A6097 NTH Right	U	B		1	7	-	60	1800	120	50.0%	-	-	-	1.4	83.6	2.4
2/1	KIRK HILL Right Left Ahead	O	E		1	26	-	204	1800	165	123.6%	77	0	33	27.0	476.4	30.6
3/1	A6097 STH Ahead Left	U	C		1	63	-	1363	1900	1013	134.5%	-	-	-	208.1	549.6	233.8
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	26	-	299	1800	405	73.8%	7	0	0	5.0	59.8	10.6
5/1	A6097N exit	U	-		-	-	-	1734	1800	1800	75.6%	-	-	-	1.9	4.9	31.9
6/1	KH exit	U	-		-	-	-	110	1800	1800	5.8%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1100	1800	1800	55.0%	-	-	-	0.6	2.2	21.6
8/1	NL exit	U	-		-	-	-	107	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-49.5		Total Delay for Signalled Lanes (pcuHr):		315.82		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-49.5		Total Delay Over All Lanes(pcuHr):		318.35								

Scenario 13: 'ip 2023LG' (FG13: 'ip 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	55.7%	63	0	0	11.2	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	55.7%	63	0	0	11.2	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	660	1900	1203	54.8%	-	-	-	2.9	15.7	12.9
1/2	A6097 NTH Right	U	B		1	7	-	42	1800	120	35.0%	-	-	-	0.9	76.5	1.6
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	117	1800	212	55.3%	57	0	0	2.3	69.3	4.3
3/1	A6097 STH Ahead Left	U	C		1	75	-	670	1900	1203	55.7%	-	-	-	2.9	15.8	13.1
3/2	A6097 STH Right	U	D		1	7	-	18	1800	120	15.0%	-	-	-	0.4	70.5	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	70	1800	225	31.1%	6	0	0	1.2	59.4	2.3
5/1	A6097N exit	U	-		-	-	-	760	1800	1800	42.2%	-	-	-	0.4	1.8	9.0
6/1	KH exit	U	-		-	-	-	92	1800	1800	5.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	648	1800	1800	36.0%	-	-	-	0.3	1.6	0.3
8/1	NL exit	U	-		-	-	-	77	1800	1800	4.3%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		61.6		61.6		Total Delay for Signalled Lanes (pcuHr):			10.47		Cycle Time (s): 120			
			PRC Over All Lanes (%):		61.6					Total Delay Over All Lanes(pcuHr):			11.18				

Scenario 14: 'op 2023LG' (FG14: 'op 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	4.7%	6	0	0	0.7	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	4.7%	6	0	0	0.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	56	1900	1203	4.7%	-	-	-	0.2	9.9	0.7
1/2	A6097 NTH Right	U	B		1	7	-	4	1800	120	3.3%	-	-	-	0.1	68.2	0.1
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	10	1800	225	4.4%	5	0	0	0.2	54.7	0.3
3/1	A6097 STH Ahead Left	U	C		1	75	-	57	1900	1203	4.7%	-	-	-	0.2	9.9	0.7
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	6	1800	225	2.7%	1	0	0	0.1	54.6	0.2
5/1	A6097N exit	U	-		-	-	-	65	1800	1800	3.6%	-	-	-	0.0	1.0	0.0
6/1	KH exit	U	-		-	-	-	8	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	55	1800	1800	3.1%	-	-	-	0.0	1.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		1800.0		1800.0		Total Delay for Signalled Lanes (pcuHr):			0.67		Cycle Time (s):		120	
			PRC Over All Lanes (%):		1800.0				Total Delay Over All Lanes(pcuHr):			0.71					

Scenario 15: 'am 2037LG' (FG15: 'am 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	112.0%	111	0	12	116.4	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	112.0%	111	0	12	116.4	-	-
1/1	A6097 NTH Left Ahead	U	A		1	71	-	1277	1900	1140	112.0%	-	-	-	88.8	250.3	120.0
1/2	A6097 NTH Right	U	B		1	7	-	62	1800	120	51.7%	-	-	-	1.5	84.6	2.5
2/1	KIRK HILL Right Left Ahead	O	E		1	18	-	202	1800	194	104.3%	101	0	12	12.8	228.8	16.5
3/1	A6097 STH Ahead Left	U	C		1	71	-	987	1900	1140	86.6%	-	-	-	8.6	31.3	30.2
3/2	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	18	-	154	1800	285	54.0%	10	0	0	2.6	60.1	5.3
5/1	A6097N exit	U	-		-	-	-	1215	1800	1800	67.2%	-	-	-	1.2	3.7	26.1
6/1	KH exit	U	-		-	-	-	107	1800	1800	5.5%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1249	1800	1800	62.1%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	116	1800	1800	6.3%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-24.5		Total Delay for Signalled Lanes (pcuHr):		114.34		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-24.5		Total Delay Over All Lanes (pcuHr):		116.45								



Scenario 16: 'pm 2037LG+suppressed' (FG16: 'pm 2037LG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	132.1%	88	0	28	299.7	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	132.1%	88	0	28	299.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	1105	1900	997	110.8%	-	-	-	73.2	238.4	98.9
1/2	A6097 NTH Right	U	B		1	7	-	63	1800	120	52.5%	-	-	-	1.5	85.2	2.6
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	199	1800	162	122.7%	83	0	28	25.7	465.8	29.2
3/1	A6097 STH Ahead Left	U	C		1	62	-	1318	1900	997	132.1%	-	-	-	191.8	523.8	216.9
3/2	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	306	1800	420	72.9%	5	0	0	4.9	57.9	10.7
5/1	A6097N exit	U	-		-	-	-	1705	1800	1800	75.6%	-	-	-	1.9	4.9	31.5
6/1	KH exit	U	-		-	-	-	110	1800	1800	5.8%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1074	1800	1800	53.8%	-	-	-	0.6	2.2	0.6
8/1	NL exit	U	-		-	-	-	105	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-46.8		Total Delay for Signalled Lanes (pcuHr):		297.15		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-46.8		Total Delay Over All Lanes(pcuHr):		299.65								

Scenario 17: 'ip 2037LG' (FG17: 'ip 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	59.3%	68	0	0	12.1	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	59.3%	68	0	0	12.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	713	1900	1203	59.3%	-	-	-	3.3	16.6	14.6
1/2	A6097 NTH Right	U	B		1	7	-	44	1800	120	36.7%	-	-	-	0.9	77.1	1.7
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	118	1800	208	56.6%	61	0	0	2.3	70.4	4.3
3/1	A6097 STH Ahead Left	U	C		1	75	-	710	1900	1203	59.0%	-	-	-	3.3	16.5	14.5
3/2	A6097 STH Right	U	D		1	7	-	17	1800	120	14.2%	-	-	-	0.3	70.2	0.6
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	71	1800	225	31.6%	7	0	0	1.2	59.5	2.4
5/1	A6097N exit	U	-		-	-	-	805	1800	1800	44.7%	-	-	-	0.4	1.9	10.4
6/1	KH exit	U	-		-	-	-	88	1800	1800	4.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	703	1800	1800	39.1%	-	-	-	0.3	1.6	0.3
8/1	NL exit	U	-		-	-	-	77	1800	1800	4.3%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		51.9		Total Delay for Signalled Lanes (pcuHr):		11.29		Cycle Time (s):		120				
			PRC Over All Lanes (%):		51.9		Total Delay Over All Lanes(pcuHr):		12.09								

Scenario 18: 'op 2027LG' (FG18: 'op 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	5.0%	6	0	0	0.7	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	5.0%	6	0	0	0.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	76	-	61	1900	1219	5.0%	-	-	-	0.2	9.5	0.8
1/2	A6097 NTH Right	U	B		1	7	-	4	1800	120	3.3%	-	-	-	0.1	68.2	0.1
2/1	KIRK HILL Right Left Ahead	O	E		1	13	-	10	1800	210	4.8%	5	0	0	0.2	56.3	0.3
3/1	A6097 STH Ahead Left	U	C		1	76	-	60	1900	1219	4.9%	-	-	-	0.2	9.5	0.8
3/2	A6097 STH Right	U	D		1	7	-	1	1800	120	0.8%	-	-	-	0.0	67.9	0.0
4/1	NEWTON LANE Left Ahead Right	O	F		1	13	-	6	1800	210	2.9%	1	0	0	0.1	56.1	0.2
5/1	A6097N exit	U	-		-	-	-	68	1800	1800	3.8%	-	-	-	0.0	1.0	0.0
6/1	KH exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	60	1800	1800	3.3%	-	-	-	0.0	1.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		1698.8		Total Delay for Signalled Lanes (pcuHr):		0.67		Cycle Time (s):		120				
			PRC Over All Lanes (%):		1698.8		Total Delay Over All Lanes(pcuHr):		0.71								

Scenario 19: 'am 2023HG' (FG19: 'am 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	117.1%	109	0	11	157.7	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	117.1%	109	0	11	157.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	70	-	1316	1900	1124	117.1%	-	-	-	118.6	324.4	149.5
1/2	A6097 NTH Right	U	B		1	7	-	66	1800	120	55.0%	-	-	-	1.6	86.9	2.7
2/1	KIRK HILL Right Left Ahead	O	E		1	19	-	223	1800	196	113.7%	100	0	11	21.2	342.5	25.2
3/1	A6097 STH Ahead Left	U	C		1	70	-	1029	1900	1124	91.5%	-	-	-	11.1	39.0	35.2
3/2	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	19	-	169	1800	300	56.3%	9	0	0	2.8	59.6	5.8
5/1	A6097N exit	U	-		-	-	-	1277	1800	1800	70.1%	-	-	-	1.5	4.1	29.7
6/1	KH exit	U	-		-	-	-	119	1800	1800	6.0%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1285	1800	1800	61.1%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	128	1800	1800	6.7%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-30.1		Total Delay for Signalled Lanes (pcuHr):		155.44		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-30.1		Total Delay Over All Lanes (pcuHr):		157.74								

Scenario 20: 'pm 2023HG+suppressed' (FG20: 'pm 2023HG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	149.7%	72	0	35	487.8	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	149.7%	72	0	35	487.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	1229	1900	997	123.2%	-	-	-	140.9	412.6	167.0
1/2	A6097 NTH Right	U	B		1	7	-	66	1800	120	55.0%	-	-	-	1.6	86.9	2.7
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	224	1800	150	149.7%	65	0	35	46.6	748.7	50.3
3/1	A6097 STH Ahead Left	U	C		1	62	-	1493	1900	997	149.7%	-	-	-	290.5	700.5	315.5
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	329	1800	420	78.3%	7	0	0	5.7	62.2	12.0
5/1	A6097N exit	U	-		-	-	-	1902	1800	1800	75.5%	-	-	-	1.8	4.9	31.4
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1202	1800	1800	54.0%	-	-	-	0.6	2.2	20.1
8/1	NL exit	U	-		-	-	-	117	1800	1800	5.6%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-66.4		Total Delay for Signalled Lanes (pcuHr):		485.30		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-66.4		Total Delay Over All Lanes(pcuHr):		487.79								

Scenario 21: 'ip 2023HG' (FG21: 'ip 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	60.8%	69	0	0	12.9	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	60.8%	69	0	0	12.9	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	720	1900	1203	59.8%	-	-	-	3.3	16.7	14.7
1/2	A6097 NTH Right	U	B		1	7	-	46	1800	120	38.3%	-	-	-	1.0	77.8	1.8
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	128	1800	211	60.6%	63	0	0	2.6	72.4	4.8
3/1	A6097 STH Ahead Left	U	C		1	75	-	732	1900	1203	60.8%	-	-	-	3.4	16.9	15.2
3/2	A6097 STH Right	U	D		1	7	-	20	1800	120	16.7%	-	-	-	0.4	70.9	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	77	1800	225	34.2%	6	0	0	1.3	60.1	2.6
5/1	A6097N exit	U	-		-	-	-	832	1800	1800	46.2%	-	-	-	0.5	2.0	11.1
6/1	KH exit	U	-		-	-	-	101	1800	1800	5.6%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	706	1800	1800	39.2%	-	-	-	0.3	1.6	0.3
8/1	NL exit	U	-		-	-	-	84	1800	1800	4.7%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		48.0		48.0		Total Delay for Signalled Lanes (pcuHr):			12.03		Cycle Time (s): 120			
			PRC Over All Lanes (%):		48.0					Total Delay Over All Lanes(pcuHr):			12.87				

Scenario 22: 'op 2023HG' (FG21: 'ip 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL</b> Existing	-	-	-		-	-	-	-	-	-	60.8%	69	0	0	12.1	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	60.8%	69	0	0	12.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	75	-	620	1900	1203	51.5%	-	-	-	2.6	15.1	11.7
1/2	A6097 NTH Right	U	B		1	7	-	46	1800	120	38.3%	-	-	-	1.0	77.8	1.8
2/1	KIRK HILL Right Left Ahead	O	E		1	14	-	128	1800	211	60.6%	63	0	0	2.6	72.4	4.8
3/1	A6097 STH Ahead Left	U	C		1	75	-	732	1900	1203	60.8%	-	-	-	3.4	16.9	15.2
3/2	A6097 STH Right	U	D		1	7	-	20	1800	120	16.7%	-	-	-	0.4	70.9	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	14	-	77	1800	225	34.2%	6	0	0	1.3	60.1	2.6
5/1	A6097N exit	U	-		-	-	-	832	1800	1800	46.2%	-	-	-	0.5	2.0	11.1
6/1	KH exit	U	-		-	-	-	101	1800	1800	5.6%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	606	1800	1800	33.7%	-	-	-	0.3	1.5	0.3
8/1	NL exit	U	-		-	-	-	84	1800	1800	4.7%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		48.0		48.0		Total Delay for Signalled Lanes (pcuHr):			11.28		Cycle Time (s): 120			
			PRC Over All Lanes (%):		48.0					Total Delay Over All Lanes(pcuHr):			12.05				

Scenario 23: 'am 2037HG' (FG23: 'am 2037HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	134.8%	99	0	17	308.3	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	134.8%	99	0	17	308.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	70	-	1503	1900	1124	133.7%	-	-	-	222.1	532.0	254.1
1/2	A6097 NTH Right	U	B		1	7	-	74	1800	120	61.7%	-	-	-	1.9	92.4	3.2
2/1	KIRK HILL Right Left Ahead	O	E		1	19	-	242	1800	179	134.8%	87	0	17	40.4	600.8	44.5
3/1	A6097 STH Ahead Left	U	C		1	70	-	1159	1900	1124	103.1%	-	-	-	37.7	117.3	67.6
3/2	A6097 STH Right	U	D		1	7	-	7	1800	120	5.8%	-	-	-	0.1	68.7	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	19	-	186	1800	300	62.0%	12	0	0	3.2	62.0	6.5
5/1	A6097N exit	U	-		-	-	-	1431	1800	1800	75.6%	-	-	-	2.0	5.2	35.7
6/1	KH exit	U	-		-	-	-	131	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1469	1800	1800	61.2%	-	-	-	0.8	2.6	0.8
8/1	NL exit	U	-		-	-	-	140	1800	1800	6.9%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-49.8		Total Delay for Signalled Lanes (pcuHr):		305.50		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-49.8		Total Delay Over All Lanes (pcuHr):		308.32								



Scenario 24: 'pm 2037HG+suppressed' (FG24: 'pm 2037HG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	167.8%	76	0	32	666.4	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	167.8%	76	0	32	666.4	-	-
1/1	A6097 NTH Left Ahead	U	A		1	59	-	1329	1900	950	139.9%	-	-	-	223.4	605.2	248.2
1/2	A6097 NTH Right	U	B		1	7	-	75	1800	120	62.5%	-	-	-	1.9	93.2	3.2
2/1	KIRK HILL Right Left Ahead	O	E		1	30	-	241	1800	148	163.2%	69	0	32	57.4	857.5	61.4
3/1	A6097 STH Ahead Left	U	C		1	59	-	1594	1900	950	167.8%	-	-	-	375.1	847.1	397.8
3/2	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	30	-	370	1800	465	79.6%	7	0	0	6.1	59.8	13.4
5/1	A6097N exit	U	-		-	-	-	2059	1800	1800	75.1%	-	-	-	1.8	4.8	29.8
6/1	KH exit	U	-		-	-	-	134	1800	1800	6.3%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1294	1800	1800	51.3%	-	-	-	0.5	2.1	0.5
8/1	NL exit	U	-		-	-	-	125	1800	1800	5.9%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		-86.4		Total Delay for Signalled Lanes (pcuHr):		664.04		Cycle Time (s):		120				
			PRC Over All Lanes (%):		-86.4		Total Delay Over All Lanes (pcuHr):		666.42								

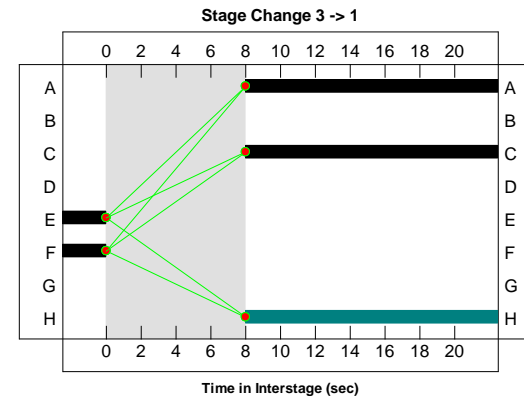
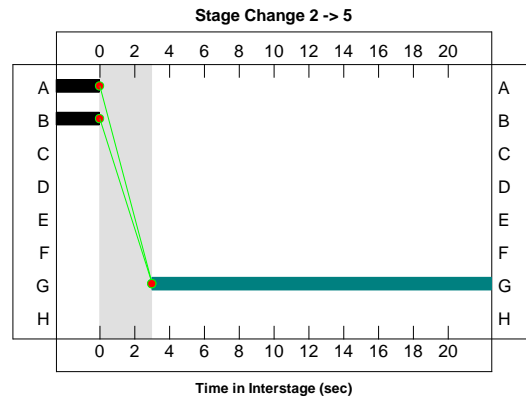
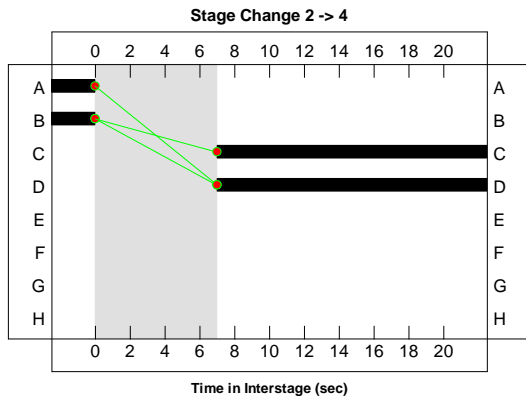
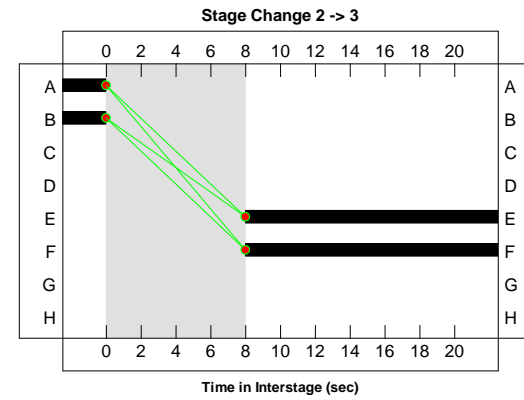
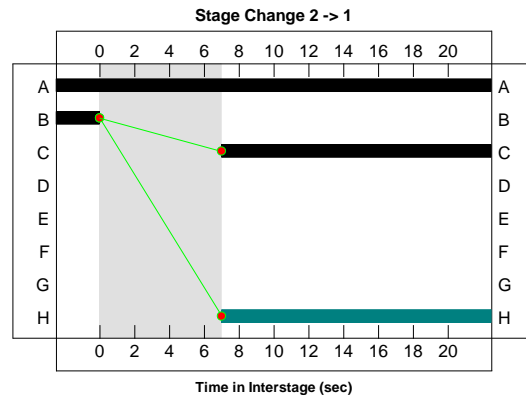
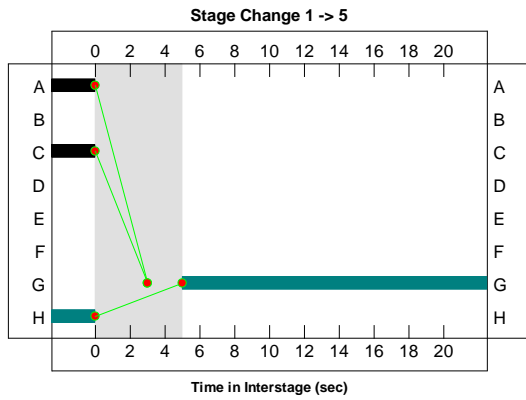
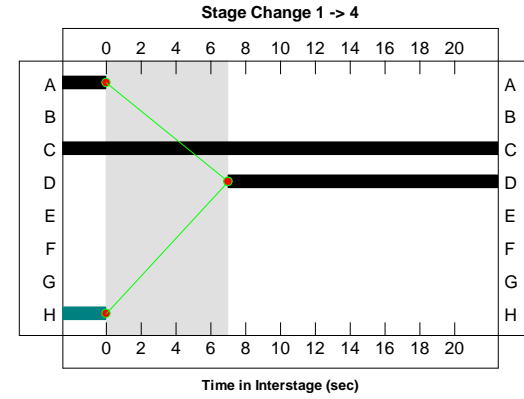
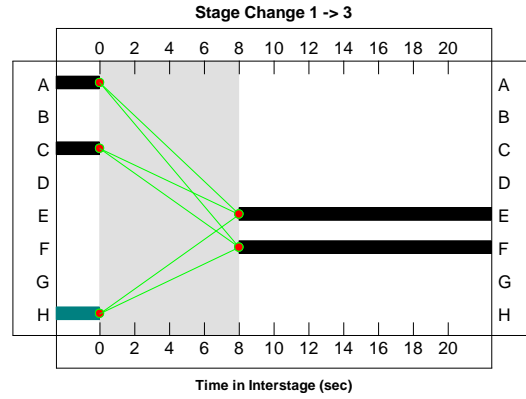
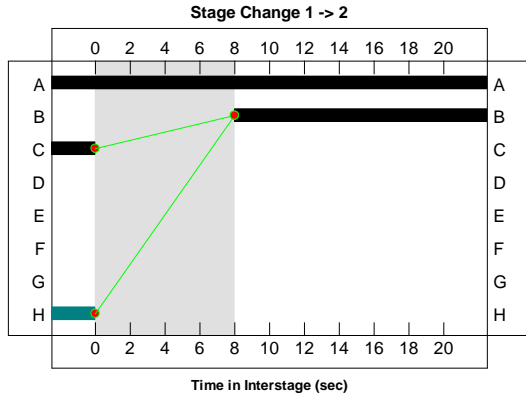
Scenario 25: 'ip 2037HG' (FG25: 'ip 2037HG', Plan 1: 'all stages')

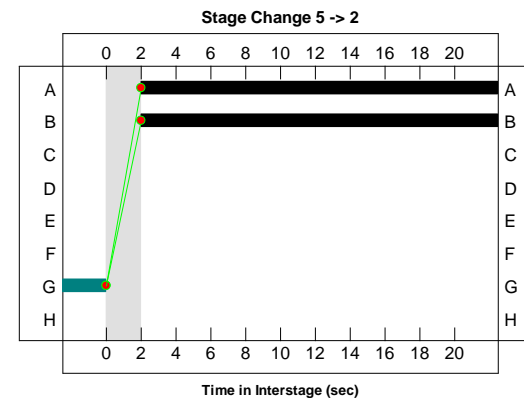
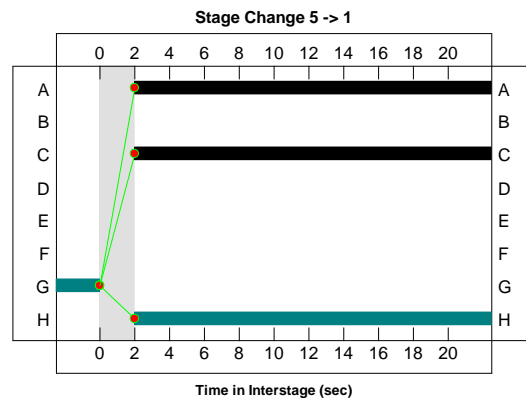
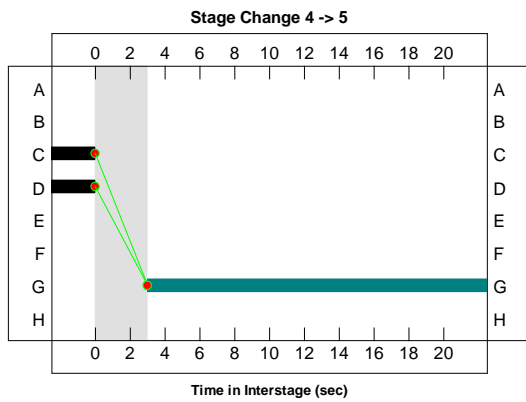
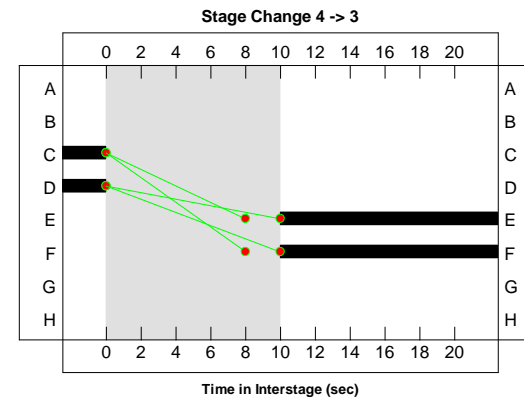
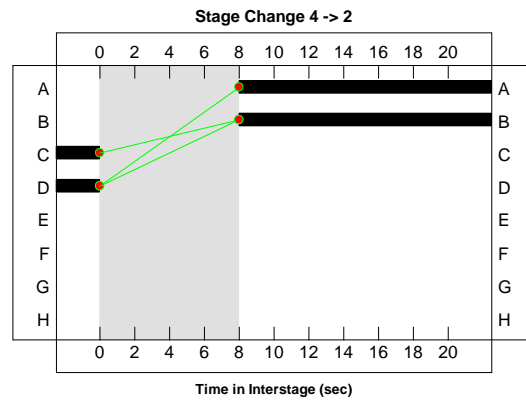
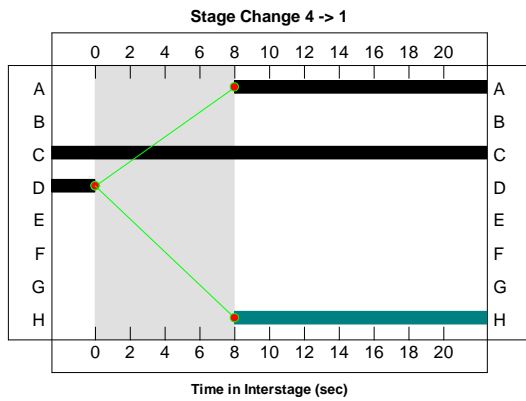
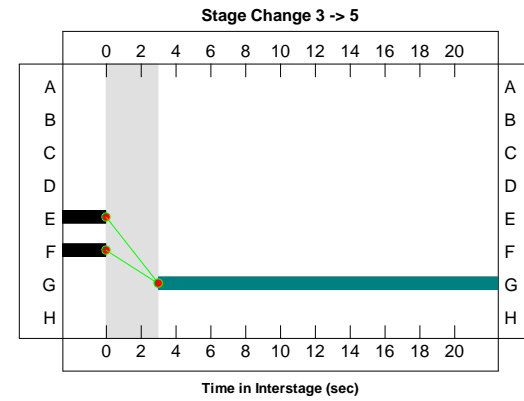
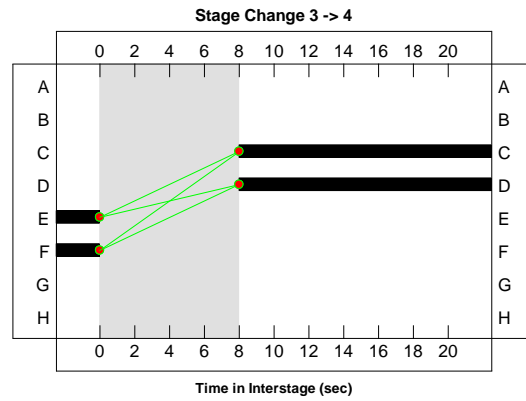
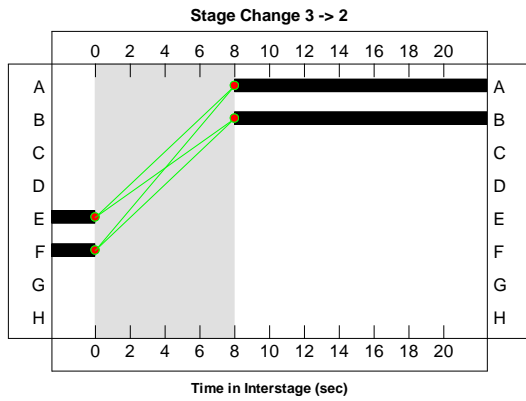
Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	70.8%	82	0	0	16.6	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	70.8%	82	0	0	16.6	-	-
1/1	A6097 NTH Left Ahead	U	A		1	74	-	841	1900	1187	70.8%	-	-	-	4.7	20.3	19.9
1/2	A6097 NTH Right	U	B		1	7	-	52	1800	120	43.3%	-	-	-	1.2	80.0	2.0
2/1	KIRK HILL Right Left Ahead	O	E		1	15	-	143	1800	216	66.2%	73	0	0	3.0	74.9	5.5
3/1	A6097 STH Ahead Left	U	C		1	74	-	841	1900	1187	70.8%	-	-	-	4.7	20.3	19.9
3/2	A6097 STH Right	U	D		1	7	-	21	1800	120	17.5%	-	-	-	0.4	71.1	0.8
4/1	NEWTON LANE Left Ahead Right	O	F		1	15	-	87	1800	240	36.3%	9	0	0	1.4	59.1	2.9
5/1	A6097N exit	U	-		-	-	-	955	1800	1800	53.1%	-	-	-	0.6	2.4	16.1
6/1	KH exit	U	-		-	-	-	108	1800	1800	6.0%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	829	1800	1800	46.1%	-	-	-	0.4	1.9	0.4
8/1	NL exit	U	-		-	-	-	93	1800	1800	5.2%	-	-	-	0.0	1.1	0.0
		C1	PRC for Signalled Lanes (%):		27.1		27.1		Total Delay for Signalled Lanes (pcuHr):			15.46		Cycle Time (s): 120			
			PRC Over All Lanes (%):		27.1					Total Delay Over All Lanes(pcuHr):			16.58				

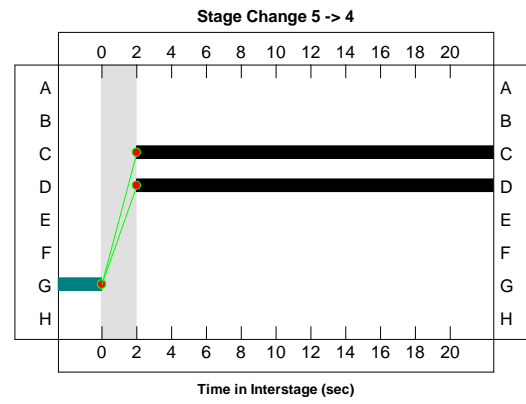
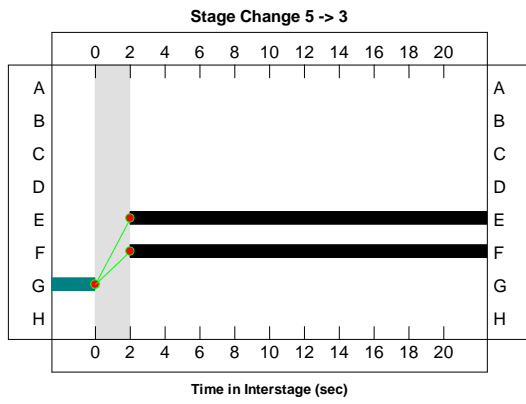
Scenario 26: 'op 2027HG' (FG26: 'op 2037HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ KIRK HILL Existing</b>	-	-	-		-	-	-	-	-	-	5.8%	7	0	0	0.9	-	-
<b>Unnamed Junction</b>	-	-	-		-	-	-	-	-	-	5.8%	7	0	0	0.9	-	-
1/1	A6097 NTH Left Ahead	U	A		1	76	-	71	1900	1219	5.8%	-	-	-	0.2	9.6	0.9
1/2	A6097 NTH Right	U	B		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
2/1	KIRK HILL Right Left Ahead	O	E		1	13	-	12	1800	210	5.7%	6	0	0	0.2	56.4	0.4
3/1	A6097 STH Ahead Left	U	C		1	76	-	71	1900	1219	5.8%	-	-	-	0.2	9.6	0.9
3/2	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	13	-	8	1800	210	3.8%	1	0	0	0.1	56.2	0.3
5/1	A6097N exit	U	-		-	-	-	81	1800	1800	4.5%	-	-	-	0.0	1.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	71	1800	1800	3.9%	-	-	-	0.0	1.0	0.0
8/1	NL exit	U	-		-	-	-	8	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
		C1	PRC for Signalled Lanes (%):		1445.4		Total Delay for Signalled Lanes (pcuHr):		0.82		Cycle Time (s):		120				
			PRC Over All Lanes (%):		1445.4		Total Delay Over All Lanes (pcuHr):		0.87								

# Interstage Diagram

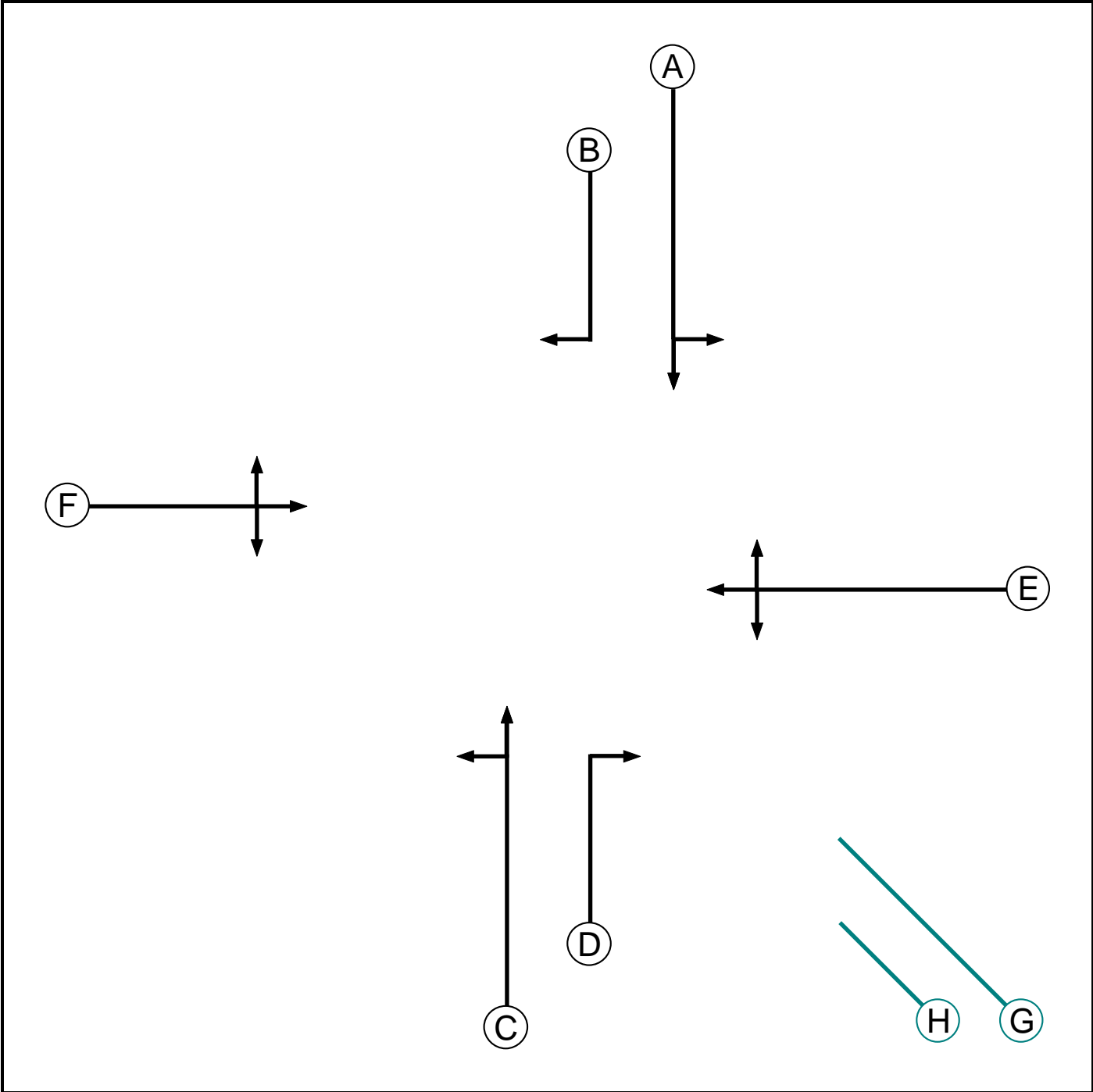






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Phase Diagram





## Network Results

Scenario 1: 'am 2023' (FG1: 'am 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	66.9%	130	0	0	21.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	66.9%	130	0	0	21.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	642	1900	997	64.4%	-	-	-	4.5	25.5	16.2
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	62:7	-	684	1900:1800	1022	66.9%	-	-	-	5.4	28.7	16.4
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	213	1800	331	64.4%	121	0	0	3.6	60.2	7.5
3/1	A6097 STH Ahead Left	U	C		1	62	-	494	1900	997	49.5%	-	-	-	3.0	21.9	11.1
3/2	A6097 STH Ahead	U	C		1	62	-	494	1900	997	49.5%	-	-	-	3.0	21.9	11.1
3/3	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	162	1800	420	38.6%	9	0	0	2.1	45.7	4.9
5/1	A6097N exit	U	-		-	-	-	1226	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	114	1800	1800	6.3%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1233	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	122	1800	1800	6.8%	-	-	-	0.0	1.1	0.0
C1					PRC for Signalled Lanes (%):		34.5	Total Delay for Signalled Lanes (pcuHr):				21.72	Cycle Time (s): 120				
					PRC Over All Lanes (%):		34.5	Total Delay Over All Lanes(pcuHr):				21.79					

Scenario 2: 'pm 2023' (FG2: 'pm 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	61.0%	105	0	0	23.0	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	61.0%	105	0	0	23.0	-	-
1/1	A6097 NTH Left Ahead	U	A		1	55	-	513	1900	887	57.9%	-	-	-	4.0	28.2	13.1
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	55:7	-	559	1900:1800	916	61.0%	-	-	-	4.9	31.5	13.2
2/1	KIRK HILL Right Left Ahead	O	E		1	34	-	163	1800	295	55.3%	98	0	0	2.6	57.4	5.6
3/1	A6097 STH Ahead Left	U	C		1	55	-	488	1900	887	55.0%	-	-	-	3.7	27.5	12.3
3/2	A6097 STH Ahead	U	C		1	55	-	487	1900	887	54.9%	-	-	-	3.7	27.4	12.2
3/3	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	34	-	314	1800	525	59.8%	7	0	0	3.9	44.9	9.6
5/1	A6097N exit	U	-		-	-	-	1320	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.8%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	978	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	109	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
C1					PRC for Signalled Lanes (%):		47.5	Total Delay for Signalled Lanes (pcuHr):				22.96	Cycle Time (s): 120				
					PRC Over All Lanes (%):		47.5	Total Delay Over All Lanes(pcuHr):				23.03					

Scenario 3: 'pm 2023+suppressed' (FG3: 'pm 2023 + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	79.3%	150	0	0	34.0	-	-	
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	79.3%	150	0	0	34.0	-	-	
1/1	A6097 NTH Left Ahead	U	A		1	56	-	601	1900	903	66.6%	-	-	-	5.0	30.1	16.3	
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	56:7	-	638	1900:1800	928	68.7%	-	-	-	5.8	32.9	16.5	
2/1	KIRK HILL Right Left Ahead	O	E		1	33	-	214	1800	270	79.3%	143	0	0	4.7	79.2	8.6	
3/1	A6097 STH Ahead Left	U	C		1	56	-	714	1900	903	79.1%	-	-	-	7.1	35.9	21.7	
3/2	A6097 STH Ahead	U	C		1	56	-	714	1900	903	79.1%	-	-	-	7.1	35.9	21.7	
3/3	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2	
4/1	NEWTON LANE Left Ahead Right	O	F		1	33	-	314	1800	510	61.6%	7	0	0	4.1	46.4	9.9	
5/1	A6097N exit	U	-		-	-	-	1818	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.8%	-	-	-	0.0	1.1	0.0	
7/1	A6097S exit	U	-		-	-	-	1151	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
8/1	NL exit	U	-		-	-	-	109	1800	1800	6.1%	-	-	-	0.0	1.1	0.0	
C1					PRC for Signalled Lanes (%): 13.5			Total Delay for Signalled Lanes (pcuHr): 33.94			Cycle Time (s): 120							
					PRC Over All Lanes (%): 13.5			Total Delay Over All Lanes(pcuHr): 34.01										

Scenario 4: 'ip 2023' (FG4: 'ip 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	35.5%	66	0	0	10.4	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	35.5%	66	0	0	10.4	-	-
1/1	A6097 NTH Left Ahead	U	A		1	66	-	347	1900	1061	32.7%	-	-	-	1.6	16.8	6.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	66:8	-	387	1900:1800	1091	35.5%	-	-	-	2.3	21.2	6.4
2/1	KIRK HILL Right Left Ahead	O	E		1	23	-	122	1800	346	35.2%	60	0	0	1.7	50.4	3.7
3/1	A6097 STH Ahead Left	U	C		1	65	-	351	1900	1045	33.6%	-	-	-	1.7	17.5	6.7
3/2	A6097 STH Ahead	U	C		1	65	-	350	1900	1045	33.5%	-	-	-	1.7	17.5	6.7
3/3	A6097 STH Right	U	D		1	7	-	19	1800	120	15.8%	-	-	-	0.4	70.7	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	23	-	74	1800	360	20.6%	6	0	0	1.0	46.3	2.2
5/1	A6097N exit	U	-		-	-	-	796	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	97	1800	1800	5.4%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	677	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	80	1800	1800	4.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 153.8  
PRC Over All Lanes (%): 153.8

Total Delay for Signalled Lanes (pcuHr): 10.34  
Total Delay Over All Lanes(pcuHr): 10.40

Cycle Time (s): 120

Scenario 5: 'op 2023' (FG5: 'op 2023', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	3.1%	6	0	0	0.7	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	3.1%	6	0	0	0.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	68	-	28	1900	1092	2.6%	-	-	-	0.1	12.7	0.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	68:8	-	35	1900:1800	1123	3.1%	-	-	-	0.2	17.4	0.5
2/1	KIRK HILL Right Left Ahead	O	E		1	21	-	10	1800	330	3.0%	5	0	0	0.1	46.1	0.3
3/1	A6097 STH Ahead Left	U	C		1	67	-	27	1900	1077	2.5%	-	-	-	0.1	13.2	0.4
3/2	A6097 STH Ahead	U	C		1	67	-	32	1900	1077	3.0%	-	-	-	0.1	13.2	0.5
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	21	-	7	1800	330	2.1%	1	0	0	0.1	46.0	0.2
5/1	A6097N exit	U	-		-	-	-	67	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	58	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 2787.7  
PRC Over All Lanes (%): 2787.7

Total Delay for Signalled Lanes (pcuHr): 0.74  
Total Delay Over All Lanes(pcuHr): 0.74

Cycle Time (s): 120

Scenario 6: 'am 2037' (FG6: 'am 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	72.1%	139	0	0	24.5	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	72.1%	139	0	0	24.5	-	-
1/1	A6097 NTH Left Ahead	U	A		1	63	-	710	1900	1013	70.1%	-	-	-	5.3	26.8	18.7
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	63:7	-	748	1900:1800	1037	72.1%	-	-	-	6.2	29.8	18.9
2/1	KIRK HILL Right Left Ahead	O	E		1	26	-	222	1800	314	70.7%	128	0	0	4.1	65.9	8.1
3/1	A6097 STH Ahead Left	U	C		1	63	-	536	1900	1013	52.9%	-	-	-	3.3	22.0	12.2
3/2	A6097 STH Ahead	U	C		1	63	-	537	1900	1013	53.0%	-	-	-	3.3	22.0	12.2
3/3	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	26	-	170	1800	405	42.0%	11	0	0	2.2	47.4	5.2
5/1	A6097N exit	U	-		-	-	-	1323	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	119	1800	1800	6.6%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1359	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	128	1800	1800	7.1%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 24.8  
PRC Over All Lanes (%): 24.8

Total Delay for Signalled Lanes (pcuHr): 24.44  
Total Delay Over All Lanes(pcuHr): 24.52

Cycle Time (s): 120

Scenario 7: 'pm 2037' (FG7: 'pm 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	64.4%	112	0	0	24.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	64.4%	112	0	0	24.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	55	-	536	1900	887	60.5%	-	-	-	4.3	28.9	14.0
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	55:7	-	583	1900:1800	918	63.5%	-	-	-	5.2	32.4	14.1
2/1	KIRK HILL Right Left Ahead	O	E		1	34	-	169	1800	274	61.6%	106	0	0	3.0	63.0	6.0
3/1	A6097 STH Ahead Left	U	C		1	55	-	502	1900	887	56.6%	-	-	-	3.9	27.9	12.6
3/2	A6097 STH Ahead	U	C		1	55	-	501	1900	887	56.5%	-	-	-	3.9	27.8	12.6
3/3	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	34	-	338	1800	525	64.4%	6	0	0	4.4	46.6	10.7
5/1	A6097N exit	U	-		-	-	-	1384	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	125	1800	1800	6.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1011	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	112	1800	1800	6.2%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 39.8  
PRC Over All Lanes (%): 39.8

Total Delay for Signalled Lanes (pcuHr): 24.69  
Total Delay Over All Lanes(pcuHr): 24.76

Cycle Time (s): 120

Scenario 8: 'pm 2037+suppressed' (FG8: 'pm 2037 + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	83.6%	153	0	4	38.3	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	83.6%	153	0	4	38.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	54	-	624	1900	871	71.7%	-	-	-	5.8	33.4	17.9
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	54:7	-	662	1900:1800	898	73.7%	-	-	-	6.7	36.3	18.0
2/1	KIRK HILL Right Left Ahead	O	E		1	35	-	220	1800	271	81.3%	147	0	4	5.0	81.7	9.0
3/1	A6097 STH Ahead Left	U	C		1	54	-	728	1900	871	83.6%	-	-	-	8.2	40.7	23.7
3/2	A6097 STH Ahead	U	C		1	54	-	728	1900	871	83.6%	-	-	-	8.2	40.7	23.7
3/3	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	35	-	338	1800	540	62.6%	6	0	0	4.2	45.0	10.5
5/1	A6097N exit	U	-		-	-	-	1882	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	125	1800	1800	6.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1184	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	112	1800	1800	6.2%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 7.7  
PRC Over All Lanes (%): 7.7

Total Delay for Signalled Lanes (pcuHr): 38.21  
Total Delay Over All Lanes(pcuHr): 38.28

Cycle Time (s): 120



Scenario 9: 'ip 2037' (FG9: 'ip 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	39.6%	75	0	0	11.4	-	-		
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	39.6%	75	0	0	11.4	-	-		
1/1	A6097 NTH Left Ahead	U	A		1	67	-	392	1900	1077	36.4%	-	-	-	1.8	16.8	7.4		
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	67:7	-	433	1900:1800	1104	39.2%	-	-	-	2.6	21.2	7.3		
2/1	KIRK HILL Right Left Ahead	O	E		1	22	-	130	1800	329	39.6%	67	0	0	1.9	52.8	4.1		
3/1	A6097 STH Ahead Left	U	C		1	67	-	388	1900	1077	36.0%	-	-	-	1.8	16.8	7.3		
3/2	A6097 STH Ahead	U	C		1	67	-	387	1900	1077	35.9%	-	-	-	1.8	16.8	7.3		
3/3	A6097 STH Right	U	D		1	7	-	19	1800	120	15.8%	-	-	-	0.4	70.7	0.7		
4/1	NEWTON LANE Left Ahead Right	O	F		1	22	-	79	1800	345	22.9%	8	0	0	1.0	47.8	2.4		
5/1	A6097N exit	U	-		-	-	-	880	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0		
6/1	KH exit	U	-		-	-	-	98	1800	1800	5.4%	-	-	-	0.0	1.1	0.0		
7/1	A6097S exit	U	-		-	-	-	766	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0		
8/1	NL exit	U	-		-	-	-	84	1800	1800	4.7%	-	-	-	0.0	1.0	0.0		
C1					PRC for Signalled Lanes (%): 127.5			Total Delay for Signalled Lanes (pcuHr): 11.32			Cycle Time (s): 120			PRC Over All Lanes (%): 127.5			Total Delay Over All Lanes(pcuHr): 11.37		

Scenario 10: 'op 2037' (FG10: 'op 2037', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	3.7%	7	0	0	0.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	3.7%	7	0	0	0.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	68	-	29	1900	1092	2.7%	-	-	-	0.1	12.7	0.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	68:7	-	41	1900:1800	1118	3.7%	-	-	-	0.2	16.8	0.6
2/1	KIRK HILL Right Left Ahead	O	E		1	21	-	12	1800	330	3.6%	6	0	0	0.2	46.1	0.3
3/1	A6097 STH Ahead Left	U	C		1	68	-	31	1900	1092	2.8%	-	-	-	0.1	12.7	0.5
3/2	A6097 STH Ahead	U	C		1	68	-	35	1900	1092	3.2%	-	-	-	0.1	12.8	0.5
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	21	-	7	1800	330	2.1%	1	0	0	0.1	46.0	0.2
5/1	A6097N exit	U	-		-	-	-	75	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	66	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 2354.3  
PRC Over All Lanes (%): 2354.3

Total Delay for Signalled Lanes (pcuHr): 0.81  
Total Delay Over All Lanes(pcuHr): 0.81

Cycle Time (s): 120

Scenario 11: 'am 2023LG' (FG11: 'am 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	63.1%	125	0	0	19.9	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	63.1%	125	0	0	19.9	-	-
1/1	A6097 NTH Left Ahead	U	A		1	63	-	615	1900	1013	60.7%	-	-	-	4.1	23.8	14.8
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	63:7	-	655	1900:1800	1038	63.1%	-	-	-	4.9	27.0	14.9
2/1	KIRK HILL Right Left Ahead	O	E		1	26	-	193	1800	310	62.3%	116	0	0	3.3	60.9	6.8
3/1	A6097 STH Ahead Left	U	C		1	63	-	473	1900	1013	46.7%	-	-	-	2.7	20.7	10.2
3/2	A6097 STH Ahead	U	C		1	63	-	474	1900	1013	46.8%	-	-	-	2.7	20.7	10.2
3/3	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	26	-	155	1800	405	38.3%	9	0	0	2.0	46.6	4.7
5/1	A6097N exit	U	-		-	-	-	1175	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	109	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1171	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	116	1800	1800	6.4%	-	-	-	0.0	1.1	0.0
C1					PRC for Signalled Lanes (%):		42.6	Total Delay for Signalled Lanes (pcuHr):				19.83	Cycle Time (s): 120				
					PRC Over All Lanes (%):		42.6	Total Delay Over All Lanes(pcuHr):				19.89					

Scenario 12: 'pm 2023LG+suppressed' (FG12: 'pm 2023LG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	75.6%	143	0	0	30.3	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	75.6%	143	0	0	30.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	57	-	571	1900	918	62.2%	-	-	-	4.5	28.1	14.8
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	57:7	-	612	1900:1800	945	64.8%	-	-	-	5.3	31.1	14.9
2/1	KIRK HILL Right Left Ahead	O	E		1	32	-	204	1800	270	75.6%	136	0	0	4.2	74.7	8.0
3/1	A6097 STH Ahead Left	U	C		1	57	-	682	1900	918	74.3%	-	-	-	6.2	32.5	19.6
3/2	A6097 STH Ahead	U	C		1	57	-	681	1900	918	74.2%	-	-	-	6.1	32.5	19.6
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	32	-	299	1800	495	60.4%	7	0	0	3.9	46.9	9.4
5/1	A6097N exit	U	-		-	-	-	1734	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	110	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1100	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	107	1800	1800	5.9%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 19.1  
PRC Over All Lanes (%): 19.1

Total Delay for Signalled Lanes (pcuHr): 30.21  
Total Delay Over All Lanes(pcuHr): 30.28

Cycle Time (s): 120

Scenario 13: 'ip 2023LG' (FG13: 'ip 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network:</b> A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together	-	-	-		-	-	-	-	-	-	33.9%	63	0	0	9.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	33.9%	63	0	0	9.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	66	-	332	1900	1061	31.3%	-	-	-	1.5	16.7	6.1
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	66:8	-	370	1900:1800	1091	33.9%	-	-	-	2.2	21.0	6.1
2/1	KIRK HILL Right Left Ahead	O	E		1	23	-	117	1800	347	33.7%	57	0	0	1.6	50.1	3.6
3/1	A6097 STH Ahead Left	U	C		1	65	-	335	1900	1045	32.1%	-	-	-	1.6	17.3	6.3
3/2	A6097 STH Ahead	U	C		1	65	-	335	1900	1045	32.1%	-	-	-	1.6	17.3	6.3
3/3	A6097 STH Right	U	D		1	7	-	18	1800	120	15.0%	-	-	-	0.4	70.5	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	23	-	70	1800	360	19.4%	6	0	0	0.9	46.2	2.0
5/1	A6097N exit	U	-		-	-	-	760	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	92	1800	1800	5.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	648	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	77	1800	1800	4.3%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 165.4  
PRC Over All Lanes (%): 165.4

Total Delay for Signalled Lanes (pcuHr): 9.79  
Total Delay Over All Lanes(pcuHr): 9.84

Cycle Time (s): 120

Scenario 14: 'op 2023LG' (FG14: 'op 2023LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	2.9%	6	0	0	0.7	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	2.9%	6	0	0	0.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	67	-	29	1900	1077	2.7%	-	-	-	0.1	13.2	0.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	67:7	-	31	1900:1800	1088	2.8%	-	-	-	0.2	18.5	0.4
2/1	KIRK HILL Right Left Ahead	O	E		1	22	-	10	1800	345	2.9%	5	0	0	0.1	45.0	0.3
3/1	A6097 STH Ahead Left	U	C		1	67	-	26	1900	1077	2.4%	-	-	-	0.1	13.2	0.4
3/2	A6097 STH Ahead	U	C		1	67	-	31	1900	1077	2.9%	-	-	-	0.1	13.2	0.5
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	22	-	6	1800	345	1.7%	1	0	0	0.1	44.9	0.2
5/1	A6097N exit	U	-		-	-	-	65	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	8	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	55	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 3005.0  
PRC Over All Lanes (%): 3005.0

Total Delay for Signalled Lanes (pcuHr): 0.71  
Total Delay Over All Lanes(pcuHr): 0.72

Cycle Time (s): 120

Scenario 15: 'am 2037LG' (FG15: 'am 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	66.4%	127	0	0	21.1	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	66.4%	127	0	0	21.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	63	-	650	1900	1013	64.1%	-	-	-	4.5	24.8	16.2
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	63:7	-	689	1900:1800	1037	66.4%	-	-	-	5.3	27.9	16.4
2/1	KIRK HILL Right Left Ahead	O	E		1	26	-	202	1800	329	61.5%	117	0	0	3.3	59.5	7.0
3/1	A6097 STH Ahead Left	U	C		1	63	-	494	1900	1013	48.8%	-	-	-	2.9	21.1	10.8
3/2	A6097 STH Ahead	U	C		1	63	-	493	1900	1013	48.7%	-	-	-	2.9	21.1	10.7
3/3	A6097 STH Right	U	D		1	7	-	5	1800	120	4.2%	-	-	-	0.1	68.4	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	26	-	154	1800	405	38.0%	10	0	0	2.0	46.6	4.6
5/1	A6097N exit	U	-		-	-	-	1215	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	107	1800	1800	5.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1249	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	116	1800	1800	6.4%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 35.5  
PRC Over All Lanes (%): 35.5

Total Delay for Signalled Lanes (pcuHr): 21.03  
Total Delay Over All Lanes(pcuHr): 21.10

Cycle Time (s): 120

Scenario 16: 'pm 2037LG+suppressed' (FG16: 'pm 2037LG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	73.2%	142	0	0	29.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	73.2%	142	0	0	29.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	56	-	563	1900	903	62.4%	-	-	-	4.5	28.8	14.7
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	56:7	-	605	1900:1800	931	65.0%	-	-	-	5.4	32.0	14.8
2/1	KIRK HILL Right Left Ahead	O	E		1	33	-	199	1800	272	73.2%	137	0	0	4.0	72.1	7.6
3/1	A6097 STH Ahead Left	U	C		1	56	-	659	1900	903	73.0%	-	-	-	6.0	32.6	18.9
3/2	A6097 STH Ahead	U	C		1	56	-	659	1900	903	73.0%	-	-	-	6.0	32.6	18.9
3/3	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	33	-	306	1800	510	60.0%	5	0	0	3.9	45.9	9.5
5/1	A6097N exit	U	-		-	-	-	1705	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	110	1800	1800	6.1%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1074	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	105	1800	1800	5.8%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 22.9  
PRC Over All Lanes (%): 22.9

Total Delay for Signalled Lanes (pcuHr): 29.76  
Total Delay Over All Lanes(pcuHr): 29.82

Cycle Time (s): 120



Scenario 17: 'ip 2037LG' (FG17: 'ip 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	36.0%	68	0	0	10.3	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	36.0%	68	0	0	10.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	67	-	359	1900	1077	33.3%	-	-	-	1.6	16.4	6.6
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	67:8	-	398	1900:1800	1106	36.0%	-	-	-	2.3	20.7	6.5
2/1	KIRK HILL Right Left Ahead	O	E		1	22	-	118	1800	328	35.9%	61	0	0	1.7	51.8	3.7
3/1	A6097 STH Ahead Left	U	C		1	66	-	355	1900	1061	33.5%	-	-	-	1.7	16.9	6.7
3/2	A6097 STH Ahead	U	C		1	66	-	355	1900	1061	33.5%	-	-	-	1.7	16.9	6.7
3/3	A6097 STH Right	U	D		1	7	-	17	1800	120	14.2%	-	-	-	0.3	70.2	0.6
4/1	NEWTON LANE Left Ahead Right	O	F		1	22	-	71	1800	345	20.6%	7	0	0	0.9	47.4	2.1
5/1	A6097N exit	U	-		-	-	-	805	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	88	1800	1800	4.9%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	703	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	77	1800	1800	4.3%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 150.1  
PRC Over All Lanes (%): 150.1

Total Delay for Signalled Lanes (pcuHr): 10.23  
Total Delay Over All Lanes(pcuHr): 10.28

Cycle Time (s): 120

Scenario 18: 'op 2037LG' (FG18: 'op 2037LG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	3.3%	6	0	0	0.7	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	3.3%	6	0	0	0.7	-	-
1/1	A6097 NTH Left Ahead	U	A		1	69	-	28	1900	1108	2.5%	-	-	-	0.1	12.3	0.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	69:8	-	37	1900:1800	1137	3.3%	-	-	-	0.2	16.7	0.5
2/1	KIRK HILL Right Left Ahead	O	E		1	20	-	10	1800	315	3.2%	5	0	0	0.1	47.1	0.3
3/1	A6097 STH Ahead Left	U	C		1	68	-	28	1900	1092	2.6%	-	-	-	0.1	12.7	0.4
3/2	A6097 STH Ahead	U	C		1	68	-	32	1900	1092	2.9%	-	-	-	0.1	12.7	0.5
3/3	A6097 STH Right	U	D		1	7	-	1	1800	120	0.8%	-	-	-	0.0	67.9	0.0
4/1	NEWTON LANE Left Ahead Right	O	F		1	20	-	6	1800	315	1.9%	1	0	0	0.1	47.1	0.2
5/1	A6097N exit	U	-		-	-	-	68	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	60	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 2665.4  
PRC Over All Lanes (%): 2665.4

Total Delay for Signalled Lanes (pcuHr): 0.71  
Total Delay Over All Lanes(pcuHr): 0.71

Cycle Time (s): 120

Scenario 19: 'am 2023HG' (FG19: 'am 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	69.6%	135	0	0	23.3	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	69.6%	135	0	0	23.3	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	671	1900	997	67.3%	-	-	-	4.9	26.4	17.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	62:7	-	711	1900:1800	1022	69.6%	-	-	-	5.8	29.6	17.6
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	223	1800	331	67.3%	126	0	0	3.8	62.0	7.9
3/1	A6097 STH Ahead Left	U	C		1	62	-	515	1900	997	51.6%	-	-	-	3.2	22.3	11.7
3/2	A6097 STH Ahead	U	C		1	62	-	514	1900	997	51.5%	-	-	-	3.2	22.3	11.7
3/3	A6097 STH Right	U	D		1	7	-	6	1800	120	5.0%	-	-	-	0.1	68.5	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	169	1800	420	40.2%	9	0	0	2.2	46.1	5.1
5/1	A6097N exit	U	-		-	-	-	1277	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	119	1800	1800	6.6%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1285	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	128	1800	1800	7.1%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 29.4  
PRC Over All Lanes (%): 29.4

Total Delay for Signalled Lanes (pcuHr): 23.25  
Total Delay Over All Lanes(pcuHr): 23.32

Cycle Time (s): 120

Scenario 20: 'pm 2023HG+suppressed' (FG20: 'pm 2023HG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	84.2%	152	0	5	38.6	-	-	
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	84.2%	152	0	5	38.6	-	-	
1/1	A6097 NTH Left Ahead	U	A		1	55	-	628	1900	887	70.8%	-	-	-	5.7	32.4	17.8	
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	55:7	-	667	1900:1800	914	73.0%	-	-	-	6.5	35.3	17.9	
2/1	KIRK HILL Right Left Ahead	O	E		1	34	-	224	1800	270	83.1%	145	0	5	5.3	85.1	9.5	
3/1	A6097 STH Ahead Left	U	C		1	55	-	746	1900	887	84.1%	-	-	-	8.4	40.4	24.3	
3/2	A6097 STH Ahead	U	C		1	55	-	747	1900	887	84.2%	-	-	-	8.4	40.6	24.4	
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1	
4/1	NEWTON LANE Left Ahead Right	O	F		1	34	-	329	1800	525	62.7%	7	0	0	4.2	45.9	10.3	
5/1	A6097N exit	U	-		-	-	-	1902	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
6/1	KH exit	U	-		-	-	-	122	1800	1800	6.8%	-	-	-	0.0	1.1	0.0	
7/1	A6097S exit	U	-		-	-	-	1202	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
8/1	NL exit	U	-		-	-	-	117	1800	1800	6.5%	-	-	-	0.0	1.1	0.0	
C1					PRC for Signalled Lanes (%): 6.8			Total Delay for Signalled Lanes (pcuHr): 38.52			Cycle Time (s): 120							
					PRC Over All Lanes (%): 6.8			Total Delay Over All Lanes(pcuHr): 38.59										

Scenario 21: 'ip 2023HG' (FG21: 'ip 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	37.0%	69	0	0	11.0	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	37.0%	69	0	0	11.0	-	-
1/1	A6097 NTH Left Ahead	U	A		1	66	-	363	1900	1061	34.2%	-	-	-	1.7	17.1	6.8
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	66:8	-	403	1900:1800	1091	36.9%	-	-	-	2.4	21.4	6.7
2/1	KIRK HILL Right Left Ahead	O	E		1	23	-	128	1800	346	37.0%	63	0	0	1.8	50.9	4.0
3/1	A6097 STH Ahead Left	U	C		1	65	-	366	1900	1045	35.0%	-	-	-	1.8	17.7	7.0
3/2	A6097 STH Ahead	U	C		1	65	-	366	1900	1045	35.0%	-	-	-	1.8	17.7	7.0
3/3	A6097 STH Right	U	D		1	7	-	20	1800	120	16.7%	-	-	-	0.4	70.9	0.7
4/1	NEWTON LANE Left Ahead Right	O	F		1	23	-	77	1800	360	21.4%	6	0	0	1.0	46.5	2.3
5/1	A6097N exit	U	-		-	-	-	832	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	101	1800	1800	5.6%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	706	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	84	1800	1800	4.7%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 143.3  
PRC Over All Lanes (%): 143.3

Total Delay for Signalled Lanes (pcuHr): 10.91  
Total Delay Over All Lanes(pcuHr): 10.97

Cycle Time (s): 120

Scenario 22: 'op 2023HG' (FG22: 'op 2023HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	3.3%	6	0	0	0.8	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	3.3%	6	0	0	0.8	-	-
1/1	A6097 NTH Left Ahead	U	A		1	67	-	29	1900	1077	2.7%	-	-	-	0.1	13.2	0.4
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	67:8	-	36	1900:1800	1106	3.3%	-	-	-	0.2	17.6	0.5
2/1	KIRK HILL Right Left Ahead	O	E		1	22	-	11	1800	345	3.2%	5	0	0	0.1	45.0	0.3
3/1	A6097 STH Ahead Left	U	C		1	66	-	29	1900	1061	2.7%	-	-	-	0.1	13.7	0.4
3/2	A6097 STH Ahead	U	C		1	66	-	33	1900	1061	3.1%	-	-	-	0.1	13.7	0.5
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	22	-	7	1800	345	2.0%	1	0	0	0.1	44.9	0.2
5/1	A6097N exit	U	-		-	-	-	70	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	61	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	7	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

C1

PRC for Signalled Lanes (%): 2665.7  
PRC Over All Lanes (%): 2665.7

Total Delay for Signalled Lanes (pcuHr): 0.78  
Total Delay Over All Lanes(pcuHr): 0.79

Cycle Time (s): 120

Scenario 23: 'am 2037HG' (FG23: 'am 2037HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	78.9%	151	0	0	29.1	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	78.9%	151	0	0	29.1	-	-
1/1	A6097 NTH Left Ahead	U	A		1	62	-	771	1900	997	77.3%	-	-	-	6.6	30.6	22.0
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	62:7	-	806	1900:1800	1022	78.9%	-	-	-	7.5	33.6	22.4
2/1	KIRK HILL Right Left Ahead	O	E		1	27	-	242	1800	314	77.0%	139	0	0	4.8	71.1	9.3
3/1	A6097 STH Ahead Left	U	C		1	62	-	580	1900	997	58.1%	-	-	-	3.8	23.8	13.9
3/2	A6097 STH Ahead	U	C		1	62	-	579	1900	997	58.0%	-	-	-	3.8	23.8	13.7
3/3	A6097 STH Right	U	D		1	7	-	7	1800	120	5.8%	-	-	-	0.1	68.7	0.2
4/1	NEWTON LANE Left Ahead Right	O	F		1	27	-	186	1800	420	44.3%	12	0	0	2.4	47.0	5.7
5/1	A6097N exit	U	-		-	-	-	1431	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	131	1800	1800	7.3%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1469	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	140	1800	1800	7.8%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): 14.1  
PRC Over All Lanes (%): 14.1

Total Delay for Signalled Lanes (pcuHr): 29.07  
Total Delay Over All Lanes(pcuHr): 29.15

Cycle Time (s): 120

Scenario 24: '2037HG+suppressed' (FG24: 'pm 2037HG + suppressed', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	95.0%	152	0	20	56.2	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	95.0%	152	0	20	56.2	-	-
1/1	A6097 NTH Left Ahead	U	A		1	52	-	683	1900	839	81.4%	-	-	-	7.7	40.4	21.9
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	52:7	-	721	1900:1800	868	83.1%	-	-	-	8.7	43.3	22.2
2/1	KIRK HILL Right Left Ahead	O	E		1	37	-	241	1800	269	89.4%	145	0	20	6.7	100.5	11.2
3/1	A6097 STH Ahead Left	U	C		1	52	-	797	1900	839	95.0%	-	-	-	14.2	64.2	32.5
3/2	A6097 STH Ahead	U	C		1	52	-	797	1900	839	95.0%	-	-	-	14.2	64.2	32.5
3/3	A6097 STH Right	U	D		1	7	-	3	1800	120	2.5%	-	-	-	0.1	68.1	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	37	-	370	1800	570	64.9%	7	0	0	4.5	44.2	11.5
5/1	A6097N exit	U	-		-	-	-	2059	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	134	1800	1800	7.4%	-	-	-	0.0	1.1	0.0
7/1	A6097S exit	U	-		-	-	-	1294	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	125	1800	1800	6.9%	-	-	-	0.0	1.1	0.0

C1

PRC for Signalled Lanes (%): -5.5  
PRC Over All Lanes (%): -5.5

Total Delay for Signalled Lanes (pcuHr): 56.09  
Total Delay Over All Lanes(pcuHr): 56.17

Cycle Time (s): 120



Scenario 25: 'ip 2037HG' (FG25: 'ip 2037HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)	
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	43.0%	82	0	0	13.0	-	-	
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	43.0%	82	0	0	13.0	-	-	
1/1	A6097 NTH Left Ahead	U	A		1	66	-	424	1900	1061	40.0%	-	-	-	2.1	17.9	8.3	
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	66:8	-	469	1900:1800	1090	43.0%	-	-	-	2.9	22.1	8.1	
2/1	KIRK HILL Right Left Ahead	O	E		1	23	-	143	1800	336	42.5%	73	0	0	2.1	52.7	4.5	
3/1	A6097 STH Ahead Left	U	C		1	65	-	420	1900	1045	40.2%	-	-	-	2.2	18.5	8.4	
3/2	A6097 STH Ahead	U	C		1	65	-	421	1900	1045	40.3%	-	-	-	2.2	18.5	8.4	
3/3	A6097 STH Right	U	D		1	7	-	21	1800	120	17.5%	-	-	-	0.4	71.1	0.8	
4/1	NEWTON LANE Left Ahead Right	O	F		1	23	-	87	1800	360	24.2%	9	0	0	1.1	46.9	2.6	
5/1	A6097N exit	U	-		-	-	-	955	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
6/1	KH exit	U	-		-	-	-	108	1800	1800	6.0%	-	-	-	0.0	1.1	0.0	
7/1	A6097S exit	U	-		-	-	-	829	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0	
8/1	NL exit	U	-		-	-	-	93	1800	1800	5.2%	-	-	-	0.0	1.1	0.0	
C1					PRC for Signalled Lanes (%): 109.3			Total Delay for Signalled Lanes (pcuHr): 12.95			Cycle Time (s): 120							
					PRC Over All Lanes (%): 109.3			Total Delay Over All Lanes(pcuHr): 13.01										

Scenario 26: 'op 2037HG' (FG26: 'op 2037HG', Plan 1: 'all stages')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network: A6097/ Kirk Hill 2 lanes A6097, 1 lane side roads running together</b>	-	-	-		-	-	-	-	-	-	3.7%	7	0	0	0.9	-	-
<b>A6097/ Kirk Hill</b>	-	-	-		-	-	-	-	-	-	3.7%	7	0	0	0.9	-	-
1/1	A6097 NTH Left Ahead	U	A		1	68	-	34	1900	1092	3.1%	-	-	-	0.1	12.8	0.5
1/2+1/3	A6097 NTH Ahead Right	U	A B		1	68:8	-	42	1900:1800	1124	3.7%	-	-	-	0.2	17.6	0.6
2/1	KIRK HILL Right Left Ahead	O	E		1	21	-	12	1800	330	3.6%	6	0	0	0.2	46.1	0.3
3/1	A6097 STH Ahead Left	U	C		1	67	-	35	1900	1077	3.3%	-	-	-	0.1	13.2	0.5
3/2	A6097 STH Ahead	U	C		1	67	-	36	1900	1077	3.3%	-	-	-	0.1	13.2	0.5
3/3	A6097 STH Right	U	D		1	7	-	2	1800	120	1.7%	-	-	-	0.0	68.0	0.1
4/1	NEWTON LANE Left Ahead Right	O	F		1	21	-	8	1800	330	2.4%	1	0	0	0.1	46.0	0.2
5/1	A6097N exit	U	-		-	-	-	81	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
6/1	KH exit	U	-		-	-	-	9	1800	1800	0.5%	-	-	-	0.0	1.0	0.0
7/1	A6097S exit	U	-		-	-	-	71	Inf	Inf	0.0%	-	-	-	0.0	0.0	0.0
8/1	NL exit	U	-		-	-	-	8	1800	1800	0.4%	-	-	-	0.0	1.0	0.0

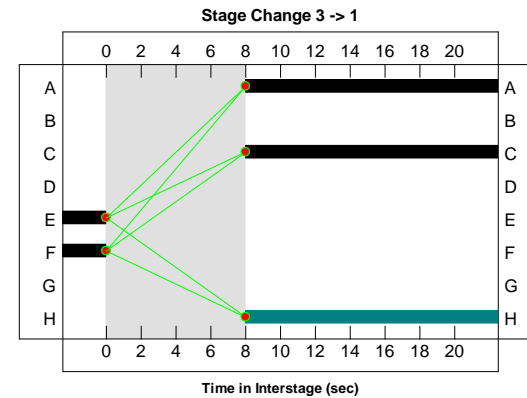
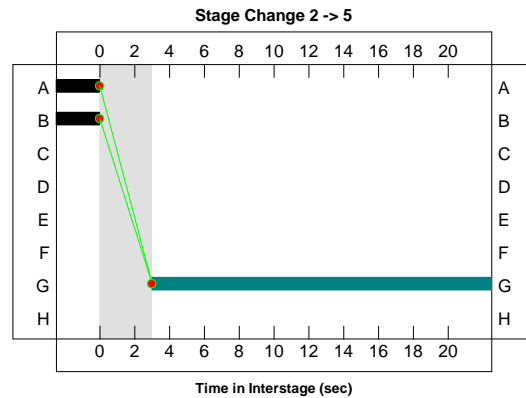
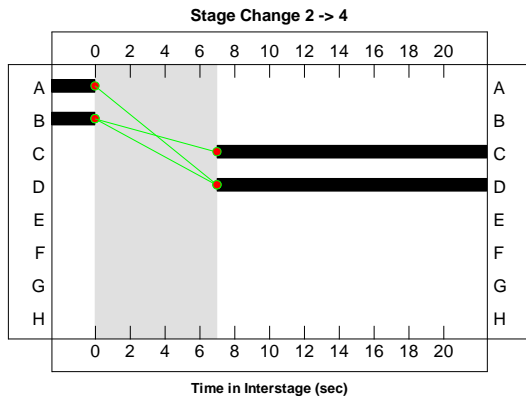
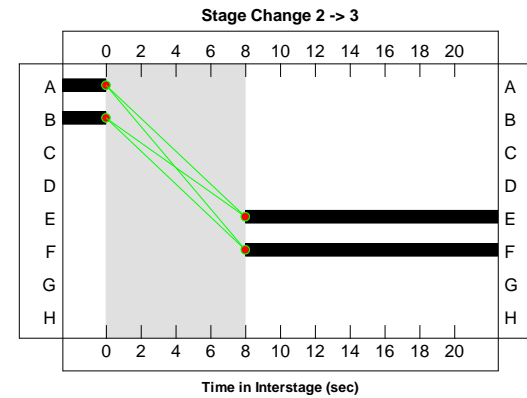
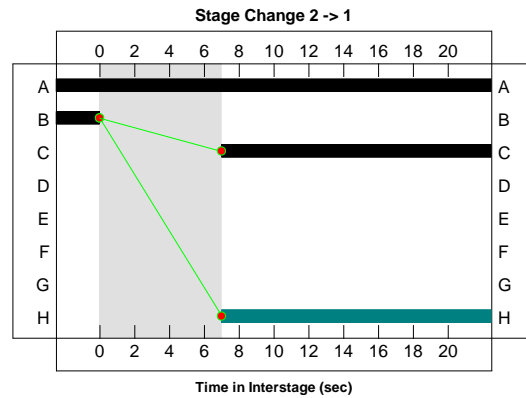
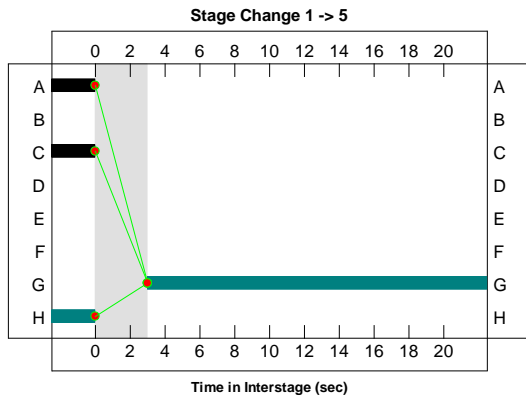
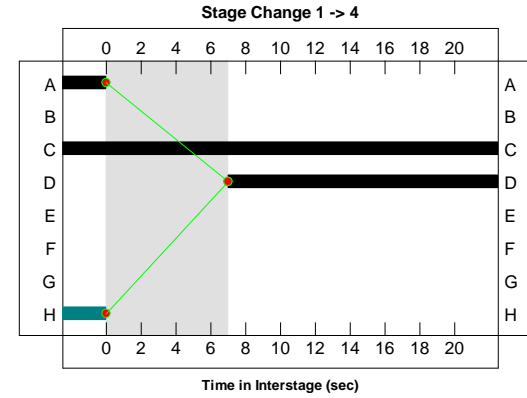
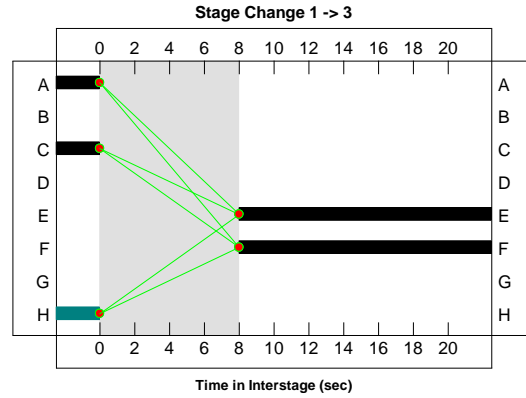
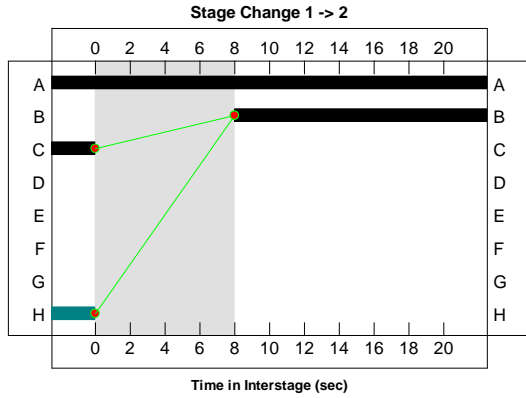
C1

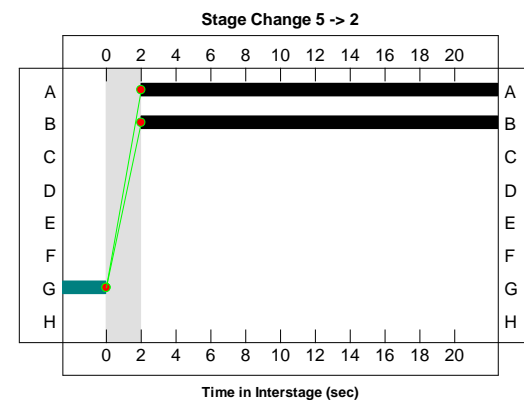
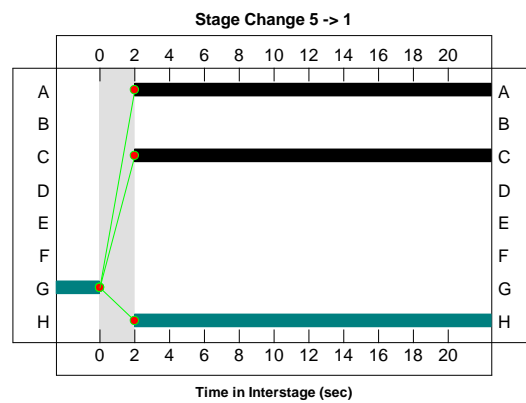
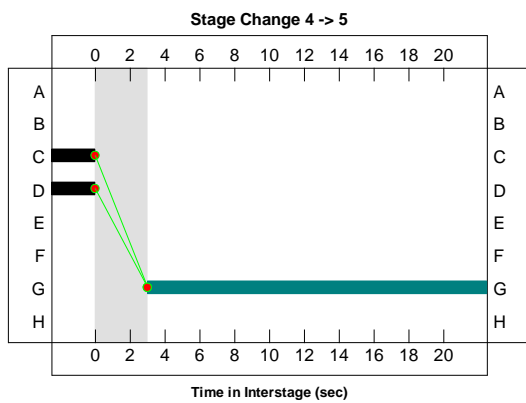
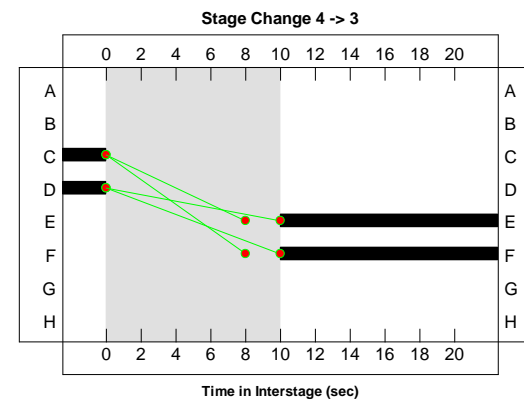
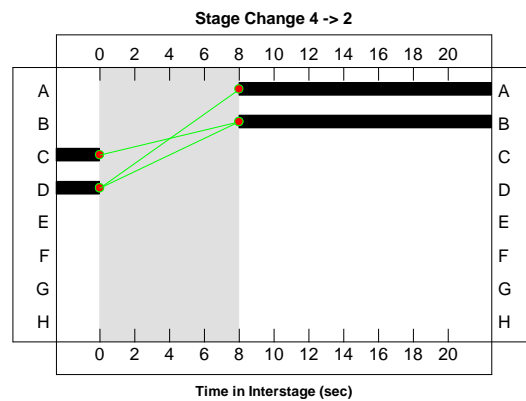
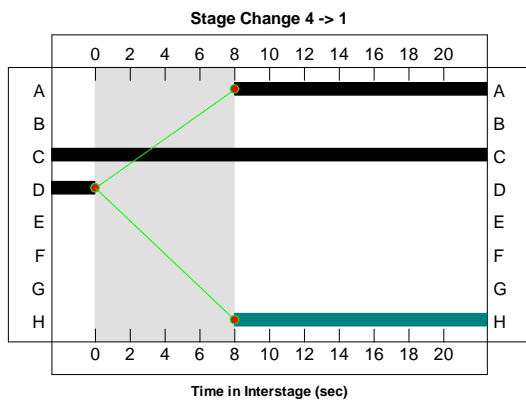
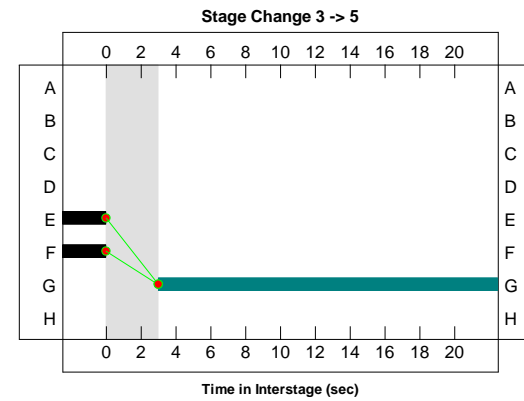
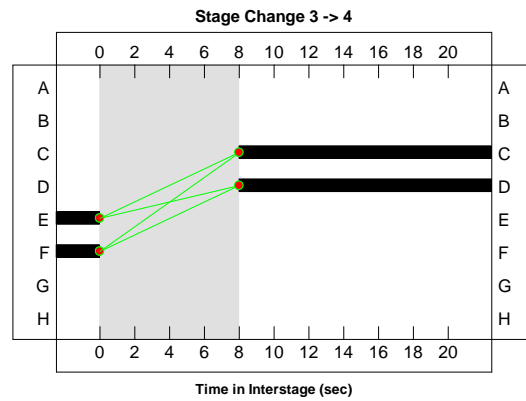
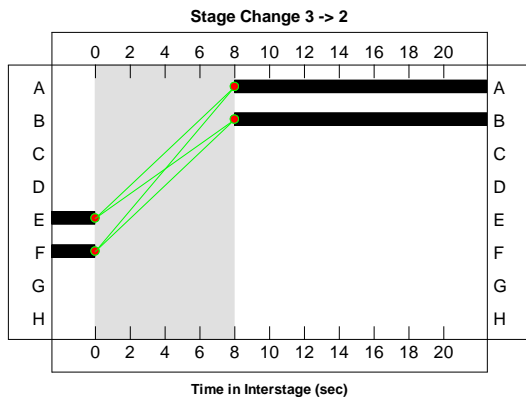
PRC for Signalled Lanes (%): 2309.5  
PRC Over All Lanes (%): 2309.5

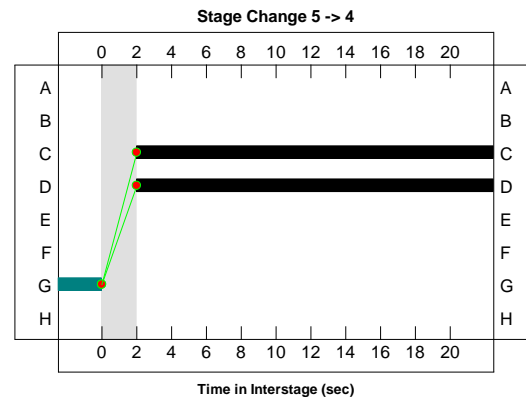
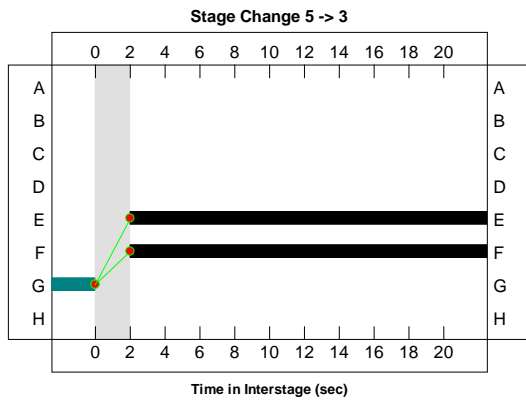
Total Delay for Signalled Lanes (pcuHr): 0.88  
Total Delay Over All Lanes(pcuHr): 0.88

Cycle Time (s): 120

# Interstage Diagram







# Appendix X – Appraisal Cost Proforma

# Appraisal Cost Proforma Summary Sheet

**Assumptions:**

Price Year Base (Earliest - 1998)	2020
--------------------------------------	------

**Note: Promoters are requested to enter the price year base they are using into the above**

Investment cost optimism bias (%)	15
Operating cost optimism bias (%)	

QRA P(80) (total)	
QRA P(50) (total)	
Design Year Operating Cost (usually 15 years from opening year)	
Operating Cost (all years total)	

**COST BREAKDOWN:**

*All values in £,000's (thousands)*

Financial Year	Investment Cost (in price year base in cell C3, excluding risk)	Cost including real cost inflation (Base Cost)	Risk adjusted cost using QRA P (mean)	Risk adjusted cost including Optimism Bias	Risk adjusted cost including OB deflated and discounted to 2010 Market Prices
2020/21	510,198	510,198	510,198	586,728	414,653
2021/22	900,000	900,000	900,000	1,035,000	693,419
2022/23	3,530,947	3,530,947	3,530,947	4,060,589	2,578,042
2023/24	11,074,756	11,074,756	12,869,006	14,799,357	8,901,736
2024/25	9,402,604	9,402,604	10,556,387	12,139,845	6,896,478
2025/26	250,000	250,000	268,750	309,063	165,818

**Totals for remaining appraisal years:**

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<b>Totals:</b>	25,668,505	25,668,505	28,635,288	32,930,581	19,650,147
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# Appendix Y – Ollerton TUBA Files



SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-1\_Ollerton\_V4\_150B

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1058.27	F	119.37	1
P	1	CEN	125.2	F	119.37	1
C	1	CEN	8348.47	F	119.37	1
L	1	CEN	280.29	F	119.37	1

S	1	CEN	185.41	F	119.37	1
P	1	LOC	100.545	F	119.37	1
C	1	LOC	2021.517	F	119.37	1
L	1	LOC	68.1715	F	119.37	1
S	1	LOC	185.6835	F	119.37	1
D	1	LOC	690	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	1	0.00	86.96	74.79	0.00	0.00	0.00	0.00	33.34
2022	1	29.22	13.04	25.21	52.87	0.00	0.00	0.00	33.33
2023	1	49.96	0.00	0.00	31.42	0.00	0.00	0.00	33.33
2024	1	20.82	0.00	0.00	15.71	0.315	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.315	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2035	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0

2036	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.693	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	4.975	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0

2061	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	26.898	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	3.365	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	7.78	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

\*no. Veh/submode purpose person\_type

1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

\*no. userclasses timeslice type format scenario year factor filename

1	1	1	V	1	0	2023	0.05583	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30763	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43971	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11258	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03823	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt

7	7	1	V	1	0	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
31	3	1	V	1	1	2023	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt

32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt
56	7	4	V	1	1	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2023 DS.txt











157	3	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 IP 2023 DS.txt
158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
170	2	1	V	1	0	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
173	5	1	V	1	0	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
175	7	1	V	1	0	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
177	2	2	V	1	0	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
178	3	2	V	1	0	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
180	5	2	V	1	0	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
181	6	2	V	1	0	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt

182	7	2	V	1	0	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
206	3	2	V	1	1	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt

207	4	2	V	1	1	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
208	5	2	V	1	1	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\V_1_Ollerton_V4 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\T_1_Ollerton_V4 AM 2037 DM.txt











332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_V4\D_1_Ollerton_V4 AM 2023 DM.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:00:45

ERRORS AND WARNINGS

3102 Warnings found in total (including any above)

Warning (434 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	1	2	Car	Business	All	2037	0.053	0.002	31.750	18.052	18.052
3	2	2	Car	Business	All	2037	0.053	0.002	31.750	7.037	7.037
3	3	2	Car	Business	All	2037	0.053	0.002	31.750	0.131	0.131
3	4	2	Car	Business	All	2037	0.053	0.002	31.750	2.448	2.448
3	5	2	Car	Business	All	2037	0.053	0.002	31.750	7.387	7.387
3	1	2	Car	Commuting	All	2037	0.053	0.002	31.750	114.983	114.983
3	2	2	Car	Commuting	All	2037	0.053	0.002	31.750	44.824	44.824
3	3	2	Car	Commuting	All	2037	0.053	0.002	31.750	0.835	0.835
3	4	2	Car	Commuting	All	2037	0.053	0.002	31.750	15.591	15.591
3	5	2	Car	Commuting	All	2037	0.053	0.002	31.750	47.051	47.051
3	1	2	Car	Other	All	2037	0.053	0.002	31.750	219.918	219.918
3	2	2	Car	Other	All	2037	0.053	0.002	31.750	85.731	85.731
3	3	2	Car	Other	All	2037	0.053	0.002	31.750	1.597	1.597
3	4	2	Car	Other	All	2037	0.053	0.002	31.750	29.819	29.819
3	5	2	Car	Other	All	2037	0.053	0.002	31.750	89.991	89.991

3	1	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	5.481	5.481
3	2	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	2.136	2.136
3	3	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	0.040	0.040
3	4	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	0.743	0.743
3	5	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	2.243	2.243

Displayed 20 warnings of a total of 714 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	3.639	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	2.790	110.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	1.577	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.274	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.642	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.259	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.712	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.606	110.000
2	1	4	Car	Business	All	2023	2.000	0.000	4166.667	0.166	130.000
2	2	4	Car	Business	All	2023	2.000	0.000	4166.667	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4166.667	0.994	130.000
2	4	4	Car	Business	All	2023	2.000	0.000	4166.667	0.762	130.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.193	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.000	85.000

2	3	4	OGV2	Business	All	2023	2.000	0.000	4166.667	1.157	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.887	85.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.502	85.000
2	5	4	Car	Business	All	2023	2.000	0.000	4166.667	0.431	130.000

Displayed 20 warnings of a total of 1100 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.639	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	2.790	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.994	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.577	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.274	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.642	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.259	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.712	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.193	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.157	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.887	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.762	130.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.502	85.000

2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.431	130.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.606	110.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.166	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-1\_Ollerton\_V4\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997





Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0

Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0
Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0
Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0

Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0
Road	2054	0	0	0	0	3	0	0	0
Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0
Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0

Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0
Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377
Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2

Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1

Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1
Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1
Road	2066	0	1	1
Road	2067	0	1	1
Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0



Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1633	1633
Car	2023	PM peak	1830	1830
Car	2023	Inter-peak	5466	5466
Car	2023	Off-peak	788	788
Car	2023	All	9717	9717
Car	2037	AM peak	1677	1677
Car	2037	PM peak	1854	1854
Car	2037	Inter-peak	5579	5579
Car	2037	Off-peak	805	805
Car	2037	All	9915	9915
LGV Personal	2023	AM peak	31	31
LGV Personal	2023	PM peak	28	28
LGV Personal	2023	Inter-peak	118	118
LGV Personal	2023	Off-peak	17	17

LGV Personal	2023 All	194	194
LGV Personal	2037 AM peak	32	32
LGV Personal	2037 PM peak	29	29
LGV Personal	2037 Inter-peak	120	120
LGV Personal	2037 Off-peak	17	17
LGV Personal	2037 All	198	198
LGV Freight	2023 AM peak	229	229
LGV Freight	2023 PM peak	208	208
LGV Freight	2023 Inter-peak	862	862
LGV Freight	2023 Off-peak	124	124
LGV Freight	2023 All	1424	1424
LGV Freight	2037 AM peak	235	235
LGV Freight	2037 PM peak	211	211
LGV Freight	2037 Inter-peak	880	880
LGV Freight	2037 Off-peak	127	127
LGV Freight	2037 All	1453	1453
OGV1	2023 AM peak	78	78
OGV1	2023 PM peak	34	34
OGV1	2023 Inter-peak	389	389
OGV1	2023 Off-peak	56	56
OGV1	2023 All	557	557
OGV1	2037 AM peak	80	80
OGV1	2037 PM peak	35	35
OGV1	2037 Inter-peak	397	397
OGV1	2037 Off-peak	57	57

OGV1	2037 All	569	569
OGV2	2023 AM peak	62	62
OGV2	2023 PM peak	40	40
OGV2	2023 Inter-peak	274	274
OGV2	2023 Off-peak	40	40
OGV2	2023 All	416	416
OGV2	2037 AM peak	64	64
OGV2	2037 PM peak	41	41
OGV2	2037 Inter-peak	280	280
OGV2	2037 Off-peak	40	40
OGV2	2037 All	425	425
All	2023 AM peak	2033	2033
All	2023 PM peak	2141	2141
All	2023 Inter-peak	7109	7109
All	2023 Off-peak	1025	1025
All	2023 All	12309	12309
All	2037 AM peak	2088	2088
All	2037 PM peak	2170	2170
All	2037 Inter-peak	7256	7256
All	2037 Off-peak	1047	1047
All	2037 All	12561	12561

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	553	0	1401	921	93	0	1423	905
Road	2037	532	0	799	583	77	0	804	571

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	626	589	89	637	604	89
Car	2037	486	340	701	490	347	701
LGV Personal	2023	0	36	1	0	37	1
LGV Personal	2037	0	30	15	0	31	15
LGV Freight	2023	3	264	6	3	272	6
LGV Freight	2037	2	222	109	2	227	109
OGV1	2023	0	188	0	0	188	0
OGV1	2037	0	193	0	0	192	0
OGV2	2023	0	236	0	0	233	0
OGV2	2037	0	243	0	0	237	0
All	2023	629	1313	96	640	1333	96
All	2037	487	1029	824	492	1034	824
Car	Total	25547	18398	53925	25820	18791	53925
LGV Personal	Total	13	1688	1316	13	1730	1316
LGV Freight	Total	94	12379	9650	95	12683	9650
OGV1	Total	0	11544	0	0	11475	0
OGV2	Total	0	14553	0	0	14207	0
All	Total	25655	58562	64891	25928	58887	64891

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2721	2780	59	54	56	1	110	113	2	165	168	4
Car	2037	1829	1855	26	42	43	1	83	85	1	126	127	2
LGV Personal	2023	88	91	2	2	2	0	4	4	0	5	5	0
LGV Personal	2037	74	75	2	2	2	0	3	3	0	5	5	0
LGV Freight	2023	646	664	18	13	13	0	26	27	1	39	40	1
LGV Freight	2037	540	553	13	12	13	0	25	25	1	37	38	1
OGV1	2023	455	454	-1	9	9	-0	18	18	-0	28	28	-0
OGV1	2037	467	464	-3	11	11	-0	21	21	-0	32	32	-0
OGV2	2023	571	563	-8	11	11	-0	23	23	-0	35	34	-1
OGV2	2037	589	575	-15	14	13	-0	27	26	-1	40	39	-1
All	2023	4481	4552	70	90	91	1	182	185	3	271	276	4
All	2024	4404	4471	66	87	89	1	175	178	3	262	266	4
All	2025	4315	4377	62	85	86	1	168	170	2	253	257	4
All	2026	4235	4293	58	81	82	1	161	164	2	242	245	3
All	2027	4155	4209	54	78	79	1	155	157	2	233	236	3
All	2028	4069	4119	50	74	75	1	150	152	2	225	227	3
All	2029	3994	4041	47	72	73	1	144	146	2	217	219	3
All	2030	3919	3962	43	68	69	1	139	140	2	207	209	2
All	2031	3841	3881	40	71	72	1	143	144	1	214	216	2
All	2032	3776	3813	37	74	75	1	148	149	1	222	224	2
All	2033	3717	3751	34	76	77	1	151	152	1	227	229	2

All	2034	3653	3684	31	76	77	1	154	156	1	231	233	2
All	2035	3601	3629	28	78	79	1	156	157	1	236	238	2
All	2036	3553	3578	25	80	80	1	159	160	1	239	240	2
All	2037	3499	3522	23	80	81	1	160	161	1	240	242	2
All	2038	3449	3472	22	80	81	1	161	162	1	241	243	2
All	2039	3402	3424	21	81	81	1	161	162	1	243	245	2
All	2040	3350	3371	21	81	81	0	162	163	1	243	244	1
All	2041	3304	3324	20	81	82	0	161	162	1	242	244	1
All	2042	3261	3280	19	80	81	0	161	162	1	241	243	1
All	2043	3212	3230	18	80	80	0	160	161	1	240	242	1
All	2044	3171	3189	18	80	80	0	159	160	1	239	240	1
All	2045	3134	3151	17	79	80	0	158	159	1	237	238	1
All	2046	3091	3107	16	78	78	0	156	157	1	234	236	1
All	2047	3056	3072	16	77	78	0	155	155	1	233	234	1
All	2048	3021	3036	15	77	77	0	153	154	1	230	231	1
All	2049	2981	2996	15	76	76	0	151	152	1	227	228	1
All	2050	2946	2960	14	74	75	0	149	150	1	224	225	1
All	2051	2946	2960	14	74	74	0	150	151	1	226	227	1
All	2052	2946	2960	14	74	74	0	151	151	1	227	228	1
All	2053	2946	2960	14	73	74	0	151	152	1	228	229	1
All	2054	2946	2960	14	72	73	0	151	152	1	230	231	1
All	2055	2946	2960	14	72	72	0	151	152	1	230	231	1
All	2056	2946	2960	14	71	71	0	151	151	1	231	232	1
All	2057	2946	2960	14	70	70	0	150	151	1	231	232	1
All	2058	2946	2960	14	69	69	0	150	150	1	230	231	1

All	2059	2946	2960	14	68	68	0	149	149	1	230	231	1
All	2060	2946	2960	14	66	67	0	148	148	1	229	230	1
All	2061	2946	2960	14	65	65	0	146	147	1	227	228	1
All	2062	2946	2960	14	63	64	0	144	145	1	225	226	1
All	2063	2946	2960	14	62	62	0	142	143	1	223	224	1
All	2064	2946	2960	14	60	61	0	140	141	1	220	221	1
All	2065	2946	2960	14	59	59	0	138	138	1	217	218	1
All	2066	2946	2960	14	57	57	0	135	136	1	214	215	1
All	2067	2946	2960	14	55	55	0	133	134	1	210	211	1
All	2068	2946	2960	14	53	53	0	130	131	1	207	208	1
All	2069	2946	2960	14	52	52	0	127	128	1	203	204	1
All	2070	2946	2960	14	50	50	0	125	125	1	199	200	1
All	2071	2946	2960	14	48	48	0	122	122	1	195	196	1
All	2072	2946	2960	14	46	46	0	119	119	1	191	192	1
All	2073	2946	2960	14	45	45	0	116	116	1	187	188	1
All	2074	2946	2960	14	43	43	0	113	113	1	183	183	1
All	2075	2946	2960	14	41	41	0	110	110	1	178	179	1
All	2076	2946	2960	14	39	39	0	106	107	1	174	174	1
All	2077	2946	2960	14	38	38	0	103	104	0	169	170	1
All	2078	2946	2960	14	36	36	0	100	101	0	164	165	1
All	2079	2946	2960	14	35	35	0	97	98	0	160	161	1
All	2080	2946	2960	14	33	33	0	94	94	0	155	156	1
All	2081	2946	2960	14	32	32	0	91	92	0	151	152	1
All	2082	2946	2960	14	30	30	0	88	89	0	147	147	1
Car	Total	97432	98948	1515	1974	2004	31	4235	4300	65	6497	6597	100

LGV Personal Total	4112	4213	101	83	85	2	180	184	4	277	283	7
LGV Freight Total	30155	30893	738	611	626	15	1320	1352	32	2029	2079	50
OGV1 Total	27940	27773	-167	566	562	-3	1229	1222	-7	1894	1882	-11
OGV2 Total	35222	34385	-837	713	696	-17	1550	1513	-37	2388	2330	-57
All Total	194861	196212	1351	3946	3974	27	8514	8571	57	13085	13172	87

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	23	23	0	0	0	0	0	0	1	1	0	
Car	2037	40	40	0	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	6	6	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	24	24	0	0	0	0	0	0	1	1	0	
All	2024	30	30	0	0	0	1	1	0	1	1	0	
All	2025	37	37	0	0	0	1	1	0	1	1	0	
All	2026	44	44	0	1	1	0	1	1	0	2	2	0
All	2027	50	50	0	1	1	0	1	1	0	2	2	0
All	2028	54	54	0	1	1	0	2	2	0	3	3	0



All	2029	56	56	0	1	1	0	2	2	0	3	3	0
All	2030	56	56	0	1	1	0	2	2	0	3	3	0
All	2031	57	57	0	1	1	0	2	2	0	3	3	0
All	2032	57	57	0	1	1	0	2	2	0	3	3	0
All	2033	56	56	0	1	1	0	2	2	0	3	3	0
All	2034	54	54	0	1	1	0	2	2	0	3	3	0
All	2035	52	52	0	1	1	0	2	2	0	3	3	0
All	2036	50	50	0	1	1	0	2	2	0	3	3	0
All	2037	48	48	0	1	1	0	2	2	0	3	3	0
All	2038	45	45	0	1	1	0	2	2	0	3	3	0
All	2039	42	42	0	1	1	0	2	2	0	3	3	0
All	2040	39	39	0	1	1	0	2	2	0	3	3	0
All	2041	40	40	0	1	1	0	2	2	0	3	3	0
All	2042	40	40	0	1	1	0	2	2	0	3	3	0
All	2043	40	40	0	1	1	0	2	2	0	3	3	0
All	2044	40	40	0	1	1	0	2	2	0	3	3	0
All	2045	40	40	0	1	1	0	2	2	0	3	3	0
All	2046	40	40	0	1	1	0	2	2	0	3	3	0
All	2047	40	40	0	1	1	0	2	2	0	3	3	0
All	2048	39	39	0	1	1	0	2	2	0	3	3	0
All	2049	38	38	0	1	1	0	2	2	0	3	3	0
All	2050	38	38	0	1	1	0	2	2	0	3	3	0
All	2051	38	38	0	1	1	0	2	2	0	3	3	0
All	2052	38	38	0	1	1	0	2	2	0	3	3	0
All	2053	38	38	0	1	1	0	2	2	0	3	3	0

All	2054	38	38	0	1	1	0	2	2	0	3	3	0
All	2055	38	38	0	1	1	0	2	2	0	3	3	0
All	2056	38	38	0	1	1	0	2	2	0	3	3	0
All	2057	38	38	0	1	1	0	2	2	0	3	3	0
All	2058	38	38	0	1	1	0	2	2	0	3	3	0
All	2059	38	38	0	1	1	0	2	2	0	3	3	0
All	2060	38	38	0	1	1	0	2	2	0	3	3	0
All	2061	38	38	0	1	1	0	2	2	0	3	3	0
All	2062	38	38	0	1	1	0	2	2	0	3	3	0
All	2063	38	38	0	1	1	0	2	2	0	3	3	0
All	2064	38	38	0	1	1	0	2	2	0	3	3	0
All	2065	38	38	0	1	1	0	2	2	0	3	3	0
All	2066	38	38	0	1	1	0	2	2	0	3	3	0
All	2067	38	38	0	1	1	0	2	2	0	3	3	0
All	2068	38	38	0	1	1	0	2	2	0	3	3	0
All	2069	38	38	0	1	1	0	2	2	0	3	3	0
All	2070	38	38	0	1	1	0	2	2	0	3	3	0
All	2071	38	38	0	1	1	0	2	2	0	2	2	0
All	2072	38	38	0	1	1	0	2	2	0	2	2	0
All	2073	38	38	0	1	1	0	1	1	0	2	2	0
All	2074	38	38	0	1	1	0	1	1	0	2	2	0
All	2075	38	38	0	1	1	0	1	1	0	2	2	0
All	2076	38	38	0	1	1	0	1	1	0	2	2	0
All	2077	38	38	0	1	1	0	1	1	0	2	2	0
All	2078	38	38	0	0	0	0	1	1	0	2	2	0

All	2079	38	38	0	0	0	0	1	1	0	2	2	0
All	2080	38	38	0	0	0	0	1	1	0	2	2	0
All	2081	38	38	0	0	0	0	1	1	0	2	2	0
All	2082	38	38	0	0	0	0	1	1	0	2	2	0
Car	Total	2061	2061	0	42	42	0	87	87	0	135	135	0
LGV Personal	Total	47	47	-0	1	1	0	2	2	0	3	3	0
LGV Freight	Total	341	341	0	7	7	0	15	15	0	23	23	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2449	2449	0	50	50	0	104	104	0	161	161	0

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	686	736	50	14	15	1	28	30	2	42	45	3
AM peak	2037	549	567	18	13	13	0	25	26	1	38	39	1
PM peak	2023	696	716	20	14	14	0	28	29	1	42	43	1
PM peak	2037	517	522	5	12	12	0	24	24	0	35	36	0
Inter-peak	2023	2709	2709	0	54	54	0	110	110	0	164	164	0
Inter-peak	2037	2126	2126	0	49	49	0	97	97	0	146	146	0
Off-peak	2023	391	391	0	8	8	0	16	16	0	24	24	0
Off-peak	2037	307	307	0	7	7	0	14	14	0	21	21	0
AM peak	Total	30423	31461	1039	616	637	21	1330	1374	44	2044	2111	68
PM peak	Total	28325	28637	312	574	580	6	1235	1249	13	1898	1918	20
Inter-peak	Total	118947	118947	0	2409	2409	0	5198	5198	0	7990	7990	0

Off-peak	Total	17167	17167	0	348	348	0	750	750	0	1153	1153	0
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NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	8	8	0	0	0	0	0	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	9	9	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	27	27	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	Total	411	411	0	8	8	0	18	18	0	27	27	0
PM peak	Total	442	442	0	9	9	0	19	19	0	29	29	0
Inter-peak	Total	1395	1395	0	28	28	0	59	59	0	92	92	0
Off-peak	Total	201	201	0	4	4	0	9	9	0	13	13	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	459	0	-22	16	0	12
Road	2024	458	0	-20	16	0	11
Road	2025	456	0	-18	16	0	10
Road	2026	456	0	-17	15	0	10
Road	2027	455	0	-15	15	0	9
Road	2028	455	0	-14	15	0	8
Road	2029	455	0	-13	15	0	7
Road	2030	455	0	-11	14	0	6
Road	2031	456	0	-10	14	0	6
Road	2032	456	0	-9	14	0	5
Road	2033	455	0	-8	14	0	5
Road	2034	455	0	-7	13	0	4
Road	2035	455	0	-6	13	0	4
Road	2036	455	0	-6	13	0	3
Road	2037	455	0	-5	13	0	3
Road	2038	448	0	-5	12	0	3
Road	2039	442	0	-4	12	0	3
Road	2040	435	0	-4	11	0	2
Road	2041	428	0	-4	11	0	2
Road	2042	422	0	-4	11	0	2
Road	2043	416	0	-3	10	0	2

Road	2044	409	0	-3	10	0	2
Road	2045	403	0	-3	9	0	2
Road	2046	397	0	-3	9	0	2
Road	2047	391	0	-3	9	0	2
Road	2048	384	0	-2	9	0	1
Road	2049	378	0	-2	8	0	1
Road	2050	373	0	-2	8	0	1
Road	2051	369	0	-2	8	0	1
Road	2052	365	0	-2	8	0	1
Road	2053	362	0	-2	7	0	1
Road	2054	358	0	-2	7	0	1
Road	2055	354	0	-2	7	0	1
Road	2056	351	0	-2	7	0	1
Road	2057	347	0	-2	7	0	1
Road	2058	344	0	-2	6	0	1
Road	2059	340	0	-2	6	0	1
Road	2060	337	0	-2	6	0	1
Road	2061	334	0	-2	6	0	1
Road	2062	331	0	-2	6	0	1
Road	2063	328	0	-1	5	0	1
Road	2064	325	0	-1	5	0	1
Road	2065	322	0	-1	5	0	1
Road	2066	319	0	-1	5	0	1
Road	2067	316	0	-1	5	0	1
Road	2068	314	0	-1	5	0	1

Road	2069	311	0	-1	5	0	1
Road	2070	308	0	-1	4	0	1
Road	2071	306	0	-1	4	0	1
Road	2072	303	0	-1	4	0	1
Road	2073	300	0	-1	4	0	1
Road	2074	298	0	-1	4	0	1
Road	2075	295	0	-1	4	0	1
Road	2076	293	0	-1	4	0	1
Road	2077	290	0	-1	4	0	1
Road	2078	288	0	-1	3	0	1
Road	2079	285	0	-1	3	0	1
Road	2080	283	0	-1	3	0	1
Road	2081	280	0	-1	3	0	1
Road	2082	278	0	-1	3	0	1
Road	Total	22395	0	-270	506	0	156

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	342	0	-19	3	0	11
Car	2037	339	0	-6	3	0	3
LGV Personal	2023	4	0	-1	0	0	0
LGV Personal	2037	4	0	-0	0	0	0
LGV Freight	2023	74	0	-5	2	0	3

LGV Freight	2037	73	0	-3	2	0	1
OGV1	2023	21	0	0	4	0	-0
OGV1	2037	21	0	1	3	0	-0
OGV2	2023	18	0	2	6	0	-1
OGV2	2037	18	0	3	5	0	-2
All	2023	459	0	-22	16	0	12
All	2037	455	0	-5	13	0	3
Car	Total	16674	0	-278	102	0	161
LGV Personal	Total	217	0	-16	0	0	9
LGV Freight	Total	3606	0	-117	75	0	67
OGV1	Total	1025	0	23	124	0	-13
OGV2	Total	873	0	118	204	0	-69
All	Total	22395	0	-270	506	0	156

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	459	0	-22	16	0	12
All	2037	455	0	-5	13	0	3
All	Total	22395	0	-270	506	0	156

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	134	0	-4	16	0	2
Business	2037	133	0	1	13	0	-0
Commuting	2023	136	0	-7	0	0	4
Commuting	2037	137	0	-2	0	0	1
Other	2023	189	0	-11	0	0	6
Other	2037	185	0	-4	0	0	2
Business	Total	6561	0	6	506	0	-4
Commuting	Total	6719	0	-102	0	0	59
Other	Total	9116	0	-174	0	0	101

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	211	0	-16	8	0	9
AM peak	2037	225	0	-4	7	0	2
PM peak	2023	182	0	-6	5	0	4
PM peak	2037	171	0	-1	3	0	1
Inter-peak	2023	65	0	0	3	0	0
Inter-peak	2037	58	0	0	2	0	0
Off-peak	2023	2	0	0	0	0	0
Off-peak	2037	1	0	0	0	0	0
AM peak	Total	10943	0	-204	274	0	118
PM peak	Total	8489	0	-66	138	0	38

Inter-peak	Total	2901	0	0	92	0	0
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Off-peak	Total	62	0	0	2	0	0
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NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	1	3	0
Car	Business	2037	0	0	0	1	3	0
Car	Business	Total	0	0	0	70	194	0
Car	Commuting	2023	0	0	0	4	15	0
Car	Commuting	2037	0	0	0	4	19	0
Car	Commuting	Total	0	0	0	244	1133	0
Car	Other	2023	0	0	0	17	38	0
Car	Other	2037	0	0	0	19	49	0
Car	Other	Total	0	0	0	1108	2885	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	0	1	0
LGV Personal	Other	2037	0	0	0	0	1	0
LGV Personal	Other	Total	0	0	0	26	71	0
LGV Freight	Business	2023	0	0	0	2	6	0

LGV Freight	Business	2037	0	0	0	3	7	0
LGV Freight	Business	Total	0	0	0	158	430	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	1	1	0
OGV1	Business	2037	0	0	0	1	2	0
OGV1	Business	Total	0	0	0	51	94	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	1	1	0
OGV2	Business	2037	0	0	0	1	1	0
OGV2	Business	Total	0	0	0	38	85	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0

OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	6	15	0
Car	Business	2037	0	0	0	6	16	0
Car	Business	Total	0	0	0	283	774	0
Car	Commuting	2023	0	0	0	27	109	0
Car	Commuting	2037	0	0	0	24	113	0
Car	Commuting	Total	0	0	0	1195	5524	0
Car	Other	2023	0	0	0	56	129	0
Car	Other	2037	0	0	0	50	131	0
Car	Other	Total	0	0	0	2479	6420	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	3	0
LGV Personal	Other	2037	0	0	0	1	3	0
LGV Personal	Other	Total	0	0	0	58	159	0
LGV Freight	Business	2023	0	0	0	22	52	0
LGV Freight	Business	2037	0	0	0	19	54	0

LGV Freight	Business	Total	0	0	0	972	2634	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	8	13	0
OGV1	Business	2037	0	0	0	7	14	0
OGV1	Business	Total	0	0	0	361	663	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	6	12	0
OGV2	Business	2037	0	0	0	5	12	0
OGV2	Business	Total	0	0	0	272	601	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	7	17	0
Car	Business	2037	0	0	0	6	17	0
Car	Business	Total	0	0	0	305	837	0
Car	Commuting	2023	0	0	0	25	104	0
Car	Commuting	2037	0	0	0	23	112	0
Car	Commuting	Total	0	0	0	1162	5455	0
Car	Other	2023	0	0	0	54	120	0
Car	Other	2037	0	0	0	48	129	0
Car	Other	Total	0	0	0	2432	6308	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	3	0
LGV Personal	Other	2037	0	0	0	1	3	0
LGV Personal	Other	Total	0	0	0	55	146	0
LGV Freight	Business	2023	0	0	0	22	49	0
LGV Freight	Business	2037	0	0	0	19	53	0
LGV Freight	Business	Total	0	0	0	969	2595	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	10	15	0
OGV1	Business	2037	0	0	0	8	16	0
OGV1	Business	Total	0	0	0	405	767	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	8	19	0
OGV2	Business	2037	0	0	0	7	19	0
OGV2	Business	Total	0	0	0	337	858	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0





LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	2	0	0	0	0	0	0
OGV1	Business	2037	0	2	0	0	0	0	0	0
OGV1	Business	Total	0	145	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	2	0	0	0	0	0	0
OGV2	Business	2037	0	2	0	0	0	0	0	0
OGV2	Business	Total	0	123	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	21	0	0	0	0	0	0
OGV1	Business	2037	0	21	0	0	0	0	0	0
OGV1	Business	Total	0	1025	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	18	0	0	0	0	0	0
OGV2	Business	2037	0	18	0	0	0	0	0	0
OGV2	Business	Total	0	873	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	25	0	0	0	0	0	0
OGV1	Business	2037	0	25	0	0	0	0	0	0
OGV1	Business	Total	0	1172	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	27	0	0	0	0	0	0
OGV2	Business	2037	0	26	0	0	0	0	0	0
OGV2	Business	Total	0	1196	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 15.77% 24.15%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	6719	6719
Vehicle operating costs	-102	-102
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	6617	6617

Consumer - Other user benefits	All Modes	Road
Travel Time	9116	9116
Vehicle operating costs	-174	-174
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	8941	8941

Business	All Modes	Road Personal	Road Freight
Travel Time	6561	1057	5504
Vehicle operating costs	512	85	428
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	7073	1142	5932

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-455	-455
NET BUSINESS IMPACT	6618	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	22176
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455

Grant/Subsidy Payments	0	0
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NET IMPACT	1336	1336
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Central Government Funding: Transport ALL MODES Road

Revenue	0	0
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Operating costs	0	0
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Investment costs	5734	5734
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Developer Contributions	0	0
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Grant/Subsidy Payments	0	0
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NET IMPACT	5734	5734
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Central Government Funding: Non-Transport

Indirect Tax Revenues	-156	-156
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TOTALS

Broad Transport Budget	7070	7070
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Wider Public Finances	-156	-156
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-57
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Economic Efficiency: Consumer Users (Commuting)	6617
Economic Efficiency: Consumer Users (Other)	8941
Economic Efficiency: Business Users and Providers	6618
Wider Public Finances (Indirect Taxation Revenues)	156
Present Value of Benefits (PVB)	22275
Broad Transport Budget	7070
Present Value of Costs (PVC)	7070

#### OVERALL IMPACTS

Net Present Value (NPV)	15205
Benefit to Cost Ratio (BCR)	3.151

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_V4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Core\_Results\_V4\_15OB\1\_Ollerton\_Outputs\_V4\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Core\_Results\_V4\_15OB\1\_Ollerton\_Outputs\_V4\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 11:12:53

ERRORS AND WARNINGS

3102 Warnings found in total (including any above)

Warning (434 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	1	2	Car	Business	All	2037	0.053	0.002	31.750	18.052	18.052
3	2	2	Car	Business	All	2037	0.053	0.002	31.750	7.037	7.037
3	3	2	Car	Business	All	2037	0.053	0.002	31.750	0.131	0.131
3	4	2	Car	Business	All	2037	0.053	0.002	31.750	2.448	2.448
3	5	2	Car	Business	All	2037	0.053	0.002	31.750	7.387	7.387
3	1	2	Car	Commuting	All	2037	0.053	0.002	31.750	114.983	114.983
3	2	2	Car	Commuting	All	2037	0.053	0.002	31.750	44.824	44.824
3	3	2	Car	Commuting	All	2037	0.053	0.002	31.750	0.835	0.835
3	4	2	Car	Commuting	All	2037	0.053	0.002	31.750	15.591	15.591
3	5	2	Car	Commuting	All	2037	0.053	0.002	31.750	47.051	47.051
3	1	2	Car	Other	All	2037	0.053	0.002	31.750	219.918	219.918
3	2	2	Car	Other	All	2037	0.053	0.002	31.750	85.731	85.731
3	3	2	Car	Other	All	2037	0.053	0.002	31.750	1.597	1.597
3	4	2	Car	Other	All	2037	0.053	0.002	31.750	29.819	29.819
3	5	2	Car	Other	All	2037	0.053	0.002	31.750	89.991	89.991

3	1	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	5.481	5.481
3	2	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	2.136	2.136
3	3	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	0.040	0.040
3	4	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	0.743	0.743
3	5	2	LGV Personal	Other	All	2037	0.053	0.002	31.750	2.243	2.243

Displayed 20 warnings of a total of 714 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	3.639	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	2.790	110.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	1.577	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.274	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.642	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.259	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.712	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.606	110.000
2	1	4	Car	Business	All	2023	2.000	0.000	4166.667	0.166	130.000
2	2	4	Car	Business	All	2023	2.000	0.000	4166.667	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4166.667	0.994	130.000
2	4	4	Car	Business	All	2023	2.000	0.000	4166.667	0.762	130.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.193	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.000	85.000

2	3	4	OGV2	Business	All	2023	2.000	0.000	4166.667	1.157	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.887	85.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.502	85.000
2	5	4	Car	Business	All	2023	2.000	0.000	4166.667	0.431	130.000

Displayed 20 warnings of a total of 1100 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.639	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	2.790	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.994	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.577	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.274	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.642	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.259	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.712	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.193	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.157	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.887	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.762	130.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.502	85.000

2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.431	130.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.606	110.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.166	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484

2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291

2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500



2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894

2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961

2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105

2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023

2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000

2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000

2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000



2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000

2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000

2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000

2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000

2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897

2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000

2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000

2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438



2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000

2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000

2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000

2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000

2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000

2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000

2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000

2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898



2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000

2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000

2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000

6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912

2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873

2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116

2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695

2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057



2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407

2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421

2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683

2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146

2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879

2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

				max	min		
*							
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10

4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874

2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107



2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323

2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316

2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699

2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880

2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389

2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372

2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699

2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740



2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240

2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723

2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280

2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771

2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335

2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407

2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686

2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745



2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109

2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628

2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208

2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711

2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123

2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153

2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830



2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313

2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000

2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111

2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131

2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000

2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013

2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010

2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name TUBA-1\_Ollerton\_V4\_150B





Road	2021	0	0	0	0	0	0	0	0
Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0

Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0

Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0

Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0
Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0

Road	2054	0	0	0	0	3	0	0	0
Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0
Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0
Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0

Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. E000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377
Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1

Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1



Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1
Road	2066	0	1	1
Road	2067	0	1	1
Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1633	1633
Car	2023	PM peak	1830	1830
Car	2023	Inter-peak	5466	5466
Car	2023	Off-peak	788	788
Car	2023	All	9717	9717
Car	2037	AM peak	1677	1677
Car	2037	PM peak	1854	1854
Car	2037	Inter-peak	5579	5579
Car	2037	Off-peak	805	805
Car	2037	All	9915	9915
LGV Personal	2023	AM peak	31	31
LGV Personal	2023	PM peak	28	28
LGV Personal	2023	Inter-peak	118	118
LGV Personal	2023	Off-peak	17	17
LGV Personal	2023	All	194	194
LGV Personal	2037	AM peak	32	32
LGV Personal	2037	PM peak	29	29
LGV Personal	2037	Inter-peak	120	120
LGV Personal	2037	Off-peak	17	17
LGV Personal	2037	All	198	198
LGV Freight	2023	AM peak	229	229
LGV Freight	2023	PM peak	208	208
LGV Freight	2023	Inter-peak	862	862
LGV Freight	2023	Off-peak	124	124

LGV Freight	2023 All	1424	1424
LGV Freight	2037 AM peak	235	235
LGV Freight	2037 PM peak	211	211
LGV Freight	2037 Inter-peak	880	880
LGV Freight	2037 Off-peak	127	127
LGV Freight	2037 All	1453	1453
OGV1	2023 AM peak	78	78
OGV1	2023 PM peak	34	34
OGV1	2023 Inter-peak	389	389
OGV1	2023 Off-peak	56	56
OGV1	2023 All	557	557
OGV1	2037 AM peak	80	80
OGV1	2037 PM peak	35	35
OGV1	2037 Inter-peak	397	397
OGV1	2037 Off-peak	57	57
OGV1	2037 All	569	569
OGV2	2023 AM peak	62	62
OGV2	2023 PM peak	40	40
OGV2	2023 Inter-peak	274	274
OGV2	2023 Off-peak	40	40
OGV2	2023 All	416	416
OGV2	2037 AM peak	64	64
OGV2	2037 PM peak	41	41
OGV2	2037 Inter-peak	280	280
OGV2	2037 Off-peak	40	40

OGV2	2037	All	425	425
All	2023	AM peak	2033	2033
All	2023	PM peak	2141	2141
All	2023	Inter-peak	7109	7109
All	2023	Off-peak	1025	1025
All	2023	All	12309	12309
All	2037	AM peak	2088	2088
All	2037	PM peak	2170	2170
All	2037	Inter-peak	7256	7256
All	2037	Off-peak	1047	1047
All	2037	All	12561	12561

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	530	0	1427	921	90	0	1449	905
Road	2037	489	0	696	583	71	0	700	571

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	697	589	91	710	604	91
Car	2037	497	265	903	501	270	903
LGV Personal	2023	1	36	0	1	37	0

LGV Personal	2037	1	26	9	1	26	9						
LGV Freight	2023	6	262	4	6	270	4						
LGV Freight	2037	8	187	68	8	192	68						
OGV1	2023	0	184	0	0	184	0						
OGV1	2037	0	164	0	0	163	0						
OGV2	2023	0	228	0	0	225	0						
OGV2	2037	0	176	0	0	172	0						
All	2023	704	1299	95	716	1319	95						
All	2037	506	818	980	510	823	980						
Car	Total	26069	14774	64751	26350	15093	64751						
LGV Personal	Total	69	1406	851	69	1440	851						
LGV Freight	Total	504	10309	6238	508	10563	6238						
OGV1	Total	0	9602	0	0	9546	0						
OGV2	Total	0	10650	0	0	10400	0						
All	Total	26642	46741	71839	26927	47042	71839						

#### CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2869	2931	62	57	59	1	116	119	3	174	177	4
Car	2037	1671	1693	23	38	39	1	76	77	1	115	116	2
LGV Personal	2023	88	91	2	2	2	0	4	4	0	5	5	0
LGV Personal	2037	64	65	1	1	2	0	3	3	0	4	4	0
LGV Freight	2023	646	664	18	13	13	0	26	27	1	39	40	1
LGV Freight	2037	469	480	11	11	11	0	21	22	1	32	33	1

OGV1	2023	446	446	-1	9	9	-0	18	18	-0	27	27	-0
OGV1	2037	397	394	-3	9	9	-0	18	18	-0	27	27	-0
OGV2	2023	552	544	-8	11	11	-0	22	22	-0	33	33	-0
OGV2	2037	426	415	-11	10	10	-0	19	19	-0	29	29	-1
All	2023	4602	4675	73	92	94	1	187	190	3	279	283	4
All	2024	4517	4586	69	90	91	1	179	182	3	269	273	4
All	2025	4401	4466	65	87	88	1	171	174	3	258	262	4
All	2026	4285	4345	60	82	83	1	163	166	2	245	248	3
All	2027	4172	4228	56	79	80	1	156	158	2	234	237	3
All	2028	4062	4114	52	74	75	1	150	152	2	224	227	3
All	2029	3957	4005	48	72	72	1	143	145	2	215	217	3
All	2030	3804	3848	44	66	67	1	135	136	2	201	203	2
All	2031	3661	3700	40	68	69	1	136	137	1	204	206	2
All	2032	3528	3564	36	69	70	1	138	140	1	207	209	2
All	2033	3407	3440	33	70	70	1	138	140	1	208	210	2
All	2034	3296	3326	30	69	70	1	139	141	1	208	210	2
All	2035	3197	3224	27	69	70	1	139	140	1	209	211	2
All	2036	3107	3131	24	70	70	1	139	140	1	209	210	2
All	2037	3026	3047	22	70	70	1	138	139	1	208	209	1
All	2038	2947	2968	21	68	69	0	138	139	1	206	208	1
All	2039	2880	2900	20	68	69	0	137	138	1	206	207	1
All	2040	2813	2832	19	68	68	0	136	137	1	204	205	1
All	2041	2746	2764	18	67	68	0	134	135	1	201	203	1
All	2042	2693	2711	17	66	67	0	133	134	1	199	201	1
All	2043	2646	2663	17	66	66	0	132	132	1	198	199	1

All	2044	2603	2619	16	65	66	0	131	131	1	196	197	1
All	2045	2564	2580	16	65	65	0	129	130	1	194	195	1
All	2046	2526	2541	15	64	64	0	128	129	1	191	193	1
All	2047	2494	2508	15	63	63	0	126	127	1	190	191	1
All	2048	2463	2477	14	63	63	0	125	126	1	188	189	1
All	2049	2435	2449	14	62	62	0	123	124	1	185	186	1
All	2050	2408	2421	13	61	61	0	122	123	1	183	184	1
All	2051	2408	2421	13	61	61	0	123	123	1	185	186	1
All	2052	2408	2421	13	60	61	0	123	124	1	186	187	1
All	2053	2408	2421	13	60	60	0	123	124	1	187	188	1
All	2054	2408	2421	13	59	59	0	123	124	1	188	189	1
All	2055	2408	2421	13	59	59	0	124	124	1	188	189	1
All	2056	2408	2421	13	58	58	0	123	124	1	189	190	1
All	2057	2408	2421	13	57	57	0	123	124	1	189	190	1
All	2058	2408	2421	13	56	57	0	122	123	1	188	189	1
All	2059	2408	2421	13	55	56	0	122	122	1	188	189	1
All	2060	2408	2421	13	54	55	0	121	121	1	187	188	1
All	2061	2408	2421	13	53	53	0	120	120	1	186	187	1
All	2062	2408	2421	13	52	52	0	118	119	1	184	185	1
All	2063	2408	2421	13	51	51	0	116	117	1	182	183	1
All	2064	2408	2421	13	49	50	0	115	115	1	180	181	1
All	2065	2408	2421	13	48	48	0	113	113	1	177	178	1
All	2066	2408	2421	13	46	47	0	111	111	1	175	176	1
All	2067	2408	2421	13	45	45	0	109	109	1	172	173	1
All	2068	2408	2421	13	43	44	0	106	107	1	169	170	1

All	2069	2408	2421	13	42	42	0	104	105	1	166	167	1
All	2070	2408	2421	13	41	41	0	102	102	1	163	164	1
All	2071	2408	2421	13	39	39	0	99	100	1	159	160	1
All	2072	2408	2421	13	38	38	0	97	98	1	156	157	1
All	2073	2408	2421	13	36	37	0	95	95	1	153	153	1
All	2074	2408	2421	13	35	35	0	92	93	1	149	150	1
All	2075	2408	2421	13	34	34	0	90	90	0	146	146	1
All	2076	2408	2421	13	32	32	0	87	87	0	142	143	1
All	2077	2408	2421	13	31	31	0	84	85	0	138	139	1
All	2078	2408	2421	13	30	30	0	82	82	0	134	135	1
All	2079	2408	2421	13	28	28	0	79	80	0	131	131	1
All	2080	2408	2421	13	27	27	0	77	77	0	127	127	1
All	2081	2408	2421	13	26	26	0	75	75	0	123	124	1
All	2082	2408	2421	13	25	25	0	72	73	0	120	121	1
Car	Total	89741	91094	1354	1814	1841	27	3880	3937	58	5947	6035	88
LGV Personal	Total	3544	3629	85	72	73	2	154	158	4	237	243	6
LGV Freight	Total	25993	26617	623	526	539	13	1132	1159	27	1739	1781	42
OGV1	Total	23240	23103	-137	470	467	-3	1019	1013	-6	1568	1559	-9
OGV2	Total	25775	25170	-605	521	508	-12	1127	1101	-27	1734	1693	-41
All	Total	168294	169614	1320	3402	3429	26	7313	7368	56	11225	11311	85

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	23	23	0	0	0	0	0	0	1	1	0	



Car	2037	52	52	0	1	1	0	2	2	0	4	4	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	24	24	0	0	0	0	0	0	0	1	1	0
All	2024	31	31	0	0	0	0	1	1	0	1	1	0
All	2025	42	42	0	0	0	0	1	1	0	2	2	0
All	2026	52	52	0	1	1	0	1	1	0	2	2	0
All	2027	61	61	0	1	1	0	2	2	0	3	3	0
All	2028	66	66	0	1	1	0	2	2	0	3	3	0
All	2029	69	69	0	1	1	0	2	2	0	4	4	0
All	2030	69	69	0	1	1	0	2	2	0	4	4	0
All	2031	70	70	0	1	1	0	3	3	0	4	4	0
All	2032	69	69	-0	1	1	-0	3	3	-0	4	4	-0
All	2033	68	68	0	1	1	0	3	3	0	4	4	0
All	2034	65	65	0	1	1	0	3	3	0	4	4	0
All	2035	63	63	0	1	1	0	3	3	0	4	4	0
All	2036	60	60	-0	1	1	-0	3	3	-0	4	4	-0
All	2037	57	57	0	1	1	0	3	3	0	4	4	0
All	2038	53	53	0	1	1	0	2	2	0	4	4	0

All	2039	49	49	0	1	1	0	2	2	0	4	4	0
All	2040	46	46	0	1	1	0	2	2	0	3	3	0
All	2041	46	46	0	1	1	0	2	2	0	3	3	0
All	2042	46	46	-0	1	1	-0	2	2	-0	3	3	-0
All	2043	46	46	-0	1	1	-0	2	2	-0	3	3	-0
All	2044	46	46	0	1	1	0	2	2	0	3	3	0
All	2045	45	45	0	1	1	0	2	2	0	3	3	0
All	2046	45	45	0	1	1	0	2	2	0	3	3	0
All	2047	44	44	0	1	1	0	2	2	0	3	3	0
All	2048	43	43	0	1	1	0	2	2	0	3	3	0
All	2049	42	42	0	1	1	0	2	2	0	3	3	0
All	2050	41	41	0	1	1	0	2	2	0	3	3	0
All	2051	41	41	0	1	1	0	2	2	0	3	3	0
All	2052	41	41	0	1	1	0	2	2	0	3	3	0
All	2053	41	41	0	1	1	0	2	2	0	3	3	0
All	2054	41	41	0	1	1	0	2	2	0	3	3	0
All	2055	41	41	0	1	1	0	2	2	0	3	3	0
All	2056	41	41	0	1	1	0	2	2	0	3	3	0
All	2057	41	41	0	1	1	0	2	2	0	3	3	0
All	2058	41	41	0	1	1	0	2	2	0	3	3	0
All	2059	41	41	0	1	1	0	2	2	0	3	3	0
All	2060	41	41	0	1	1	0	2	2	0	3	3	0
All	2061	41	41	0	1	1	0	2	2	0	3	3	0
All	2062	41	41	0	1	1	0	2	2	0	3	3	0
All	2063	41	41	0	1	1	0	2	2	0	3	3	0

All	2064	41	41	0	1	1	0	2	2	0	3	3	0
All	2065	41	41	0	1	1	0	2	2	0	3	3	0
All	2066	41	41	0	1	1	0	2	2	0	3	3	0
All	2067	41	41	0	1	1	0	2	2	0	3	3	0
All	2068	41	41	0	1	1	0	2	2	0	3	3	0
All	2069	41	41	0	1	1	0	2	2	0	3	3	0
All	2070	41	41	0	1	1	0	2	2	0	3	3	0
All	2071	41	41	0	1	1	0	2	2	0	3	3	0
All	2072	41	41	0	1	1	0	2	2	0	3	3	0
All	2073	41	41	0	1	1	0	2	2	0	3	3	0
All	2074	41	41	0	1	1	0	2	2	0	3	3	0
All	2075	41	41	0	1	1	0	2	2	0	2	2	0
All	2076	41	41	0	1	1	0	1	1	0	2	2	0
All	2077	41	41	0	1	1	0	1	1	0	2	2	0
All	2078	41	41	0	1	1	0	1	1	0	2	2	0
All	2079	41	41	0	0	0	0	1	1	0	2	2	0
All	2080	41	41	0	0	0	0	1	1	0	2	2	0
All	2081	41	41	0	0	0	0	1	1	0	2	2	0
All	2082	41	41	0	0	0	0	1	1	0	2	2	0
Car	Total	2519	2519	-0	51	51	-0	107	107	-0	164	164	-0
LGV Personal	Total	29	29	0	1	1	0	1	1	0	2	2	0
LGV Freight	Total	215	215	0	4	4	0	9	9	0	15	15	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2763	2763	-0	56	56	-0	117	117	-0	181	181	-0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	705	757	52	14	15	1	29	31	2	43	46	3
AM peak	2037	476	492	17	11	11	0	22	22	1	33	34	1
PM peak	2023	721	742	21	14	15	0	29	30	1	44	45	1
PM peak	2037	455	460	5	10	11	0	21	21	0	31	32	0
Inter-peak	2023	2775	2775	0	56	56	0	113	113	0	168	168	0
Inter-peak	2037	1831	1831	0	42	42	0	84	84	0	126	126	0
Off-peak	2023	400	400	0	8	8	0	16	16	0	24	24	0
Off-peak	2037	264	264	0	6	6	0	12	12	0	18	18	0
AM peak	Total	26293	27304	1011	532	552	20	1143	1186	43	1755	1820	65
PM peak	Total	24983	25292	309	505	511	6	1084	1097	13	1663	1682	20
Inter-peak	Total	102260	102260	0	2067	2067	0	4445	4445	0	6823	6823	0
Off-peak	Total	14759	14759	0	298	298	0	641	641	0	985	985	0

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	32	32	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	Total	465	465	0	9	9	0	20	20	0	30	30	0
PM peak	Total	507	507	-0	10	10	-0	22	22	-0	33	33	-0
Inter-peak	Total	1565	1565	0	32	32	0	67	67	0	102	102	0
Off-peak	Total	226	226	0	5	5	0	10	10	0	15	15	0

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User_Charges		Vehicle_Operating_Cost		Operator_Rev		Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes	
Road	2023	441	0	-23	16	0	13	
Road	2024	441	0	-21	16	0	12	
Road	2025	440	0	-19	16	0	11	
Road	2026	439	0	-17	15	0	10	
Road	2027	438	0	-16	15	0	9	
Road	2028	436	0	-14	15	0	8	

Road	2029	435	0	-13	15	0	7
Road	2030	433	0	-11	14	0	6
Road	2031	431	0	-10	14	0	6
Road	2032	429	0	-9	14	0	5
Road	2033	427	0	-8	14	0	4
Road	2034	425	0	-7	13	0	4
Road	2035	422	0	-6	13	0	3
Road	2036	420	0	-5	13	0	3
Road	2037	418	0	-5	13	0	3
Road	2038	410	0	-4	12	0	2
Road	2039	401	0	-4	12	0	2
Road	2040	393	0	-4	11	0	2
Road	2041	385	0	-3	11	0	2
Road	2042	377	0	-3	11	0	2
Road	2043	370	0	-3	10	0	2
Road	2044	362	0	-3	10	0	2
Road	2045	354	0	-3	9	0	2
Road	2046	347	0	-2	9	0	1
Road	2047	339	0	-2	9	0	1
Road	2048	332	0	-2	9	0	1
Road	2049	325	0	-2	8	0	1
Road	2050	318	0	-2	8	0	1
Road	2051	313	0	-2	8	0	1
Road	2052	308	0	-2	8	0	1
Road	2053	303	0	-2	7	0	1

Road	2054	298	0	-2	7	0	1
Road	2055	293	0	-2	7	0	1
Road	2056	288	0	-2	7	0	1
Road	2057	284	0	-2	7	0	1
Road	2058	280	0	-2	6	0	1
Road	2059	275	0	-2	6	0	1
Road	2060	271	0	-1	6	0	1
Road	2061	267	0	-1	6	0	1
Road	2062	263	0	-1	6	0	1
Road	2063	259	0	-1	5	0	1
Road	2064	255	0	-1	5	0	1
Road	2065	251	0	-1	5	0	1
Road	2066	248	0	-1	5	0	1
Road	2067	244	0	-1	5	0	1
Road	2068	241	0	-1	5	0	1
Road	2069	237	0	-1	5	0	1
Road	2070	234	0	-1	4	0	1
Road	2071	231	0	-1	4	0	1
Road	2072	227	0	-1	4	0	1
Road	2073	224	0	-1	4	0	1
Road	2074	221	0	-1	4	0	1
Road	2075	217	0	-1	4	0	1
Road	2076	214	0	-1	4	0	1
Road	2077	211	0	-1	4	0	1
Road	2078	208	0	-1	3	0	1

Road	2079	205	0	-1	3	0	1
Road	2080	202	0	-1	3	0	1
Road	2081	199	0	-1	3	0	1
Road	2082	196	0	-1	3	0	1
Road	Total	19155	0	-263	506	0	149

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Non_fuel	PT_fares_(pri	Taxes	
Car	2023	328	0	-19	3	0	11
Car	2037	311	0	-5	3	0	3
LGV Personal	2023	4	0	-1	0	0	0
LGV Personal	2037	4	0	-0	0	0	0
LGV Freight	2023	71	0	-5	2	0	3
LGV Freight	2037	67	0	-2	2	0	1
OGV1	2023	20	0	0	4	0	-0
OGV1	2037	19	0	1	3	0	-0
OGV2	2023	17	0	2	6	0	-1
OGV2	2037	16	0	2	5	0	-1
All	2023	441	0	-23	16	0	13
All	2037	418	0	-5	13	0	3
Car	Total	14261	0	-254	102	0	145
LGV Personal	Total	186	0	-14	0	0	8
LGV Freight	Total	3084	0	-100	75	0	56



OGV1	Total	876	0	18	124	0	-10
OGV2	Total	747	0	86	204	0	-49
All	Total	19155	0	-263	506	0	149

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
All	2023	441	0	-23	16	0	13
All	2037	418	0	-5	13	0	3
All	Total	19155	0	-263	506	0	149

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	129	0	-4	16	0	2
Business	2037	122	0	0	13	0	-0
Commuting	2023	131	0	-7	0	0	4
Commuting	2037	126	0	-2	0	0	1
Other	2023	181	0	-12	0	0	7
Other	2037	170	0	-3	0	0	2
Business	Total	5611	0	-12	506	0	6
Commuting	Total	5745	0	-93	0	0	53
Other	Total	7798	0	-158	0	0	90

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	202	0	-16	8	0	9
AM peak	2037	206	0	-4	7	0	2
PM peak	2023	175	0	-6	5	0	4
PM peak	2037	157	0	-1	3	0	1
Inter-peak	2023	63	0	0	3	0	0
Inter-peak	2037	53	0	0	2	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	1	0	0	0	0	0
AM peak	Total	9348	0	-198	274	0	113
PM peak	Total	7267	0	-65	138	0	37
Inter-peak	Total	2486	0	0	92	0	0
Off-peak	Total	53	0	0	2	0	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	1	3	0
Car	Business	2037	0	0	0	1	3	0
Car	Business	Total	0	0	0	70	194	0
Car	Commuting	2023	0	0	0	4	15	0

Car	Commuting	2037	0	0	0	4	19	0
Car	Commuting	Total	0	0	0	244	1133	0
Car	Other	2023	0	0	0	17	38	0
Car	Other	2037	0	0	0	19	49	0
Car	Other	Total	0	0	0	1108	2885	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	0	1	0
LGV Personal	Other	2037	0	0	0	0	1	0
LGV Personal	Other	Total	0	0	0	26	71	0
LGV Freight	Business	2023	0	0	0	2	6	0
LGV Freight	Business	2037	0	0	0	3	7	0
LGV Freight	Business	Total	0	0	0	158	430	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	1	1	0
OGV1	Business	2037	0	0	0	1	2	0

OGV1	Business	Total	0	0	0	51	94	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	1	1	0
OGV2	Business	2037	0	0	0	1	1	0
OGV2	Business	Total	0	0	0	38	85	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	6	15	0
Car	Business	2037	0	0	0	5	15	0
Car	Business	Total	0	0	0	243	661	0
Car	Commuting	2023	0	0	0	26	105	0
Car	Commuting	2037	0	0	0	22	104	0

Car	Commuting	Total	0	0	0	1024	4721	0
Car	Other	2023	0	0	0	54	123	0
Car	Other	2037	0	0	0	45	120	0
Car	Other	Total	0	0	0	2124	5488	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	3	0
LGV Personal	Other	2037	0	0	0	1	3	0
LGV Personal	Other	Total	0	0	0	50	136	0
LGV Freight	Business	2023	0	0	0	21	50	0
LGV Freight	Business	2037	0	0	0	18	49	0
LGV Freight	Business	Total	0	0	0	833	2252	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	8	12	0
OGV1	Business	2037	0	0	0	7	12	0
OGV1	Business	Total	0	0	0	310	567	0

OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	6	11	0
OGV2	Business	2037	0	0	0	5	11	0
OGV2	Business	Total	0	0	0	233	514	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	7	16	0
Car	Business	2037	0	0	0	6	16	0
Car	Business	Total	0	0	0	265	726	0
Car	Commuting	2023	0	0	0	24	100	0
Car	Commuting	2037	0	0	0	21	103	0
Car	Commuting	Total	0	0	0	993	4659	0

Car	Other	2023	0	0	0	51	115	0
Car	Other	2037	0	0	0	45	119	0
Car	Other	Total	0	0	0	2081	5387	0
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	0	1	2	0
LGV Personal Other		2037	0	0	0	1	3	0
LGV Personal Other		Total	0	0	0	47	125	0
LGV Freight Business		2023	0	0	0	21	47	0
LGV Freight Business		2037	0	0	0	18	49	0
LGV Freight Business		Total	0	0	0	833	2227	0
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	0	9	15	0
OGV1 Business		2037	0	0	0	8	15	0
OGV1 Business		Total	0	0	0	353	666	0
OGV1 Commuting		2023	0	0	0	0	0	0

OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	8	18	0
OGV2	Business	2037	0	0	0	7	17	0
OGV2	Business	Total	0	0	0	298	739	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	4	0	0	0	0	0	0
Car	Business	2037	0	5	0	0	0	0	0	0
Car	Business	Total	0	264	0	0	0	0	0	0
Car	Commuting	2023	0	19	0	0	0	0	0	0
Car	Commuting	2037	0	24	0	0	0	0	0	0
Car	Commuting	Total	0	1377	0	0	0	0	0	0
Car	Other	2023	0	55	0	0	0	0	0	0





OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	2	0	0	0	0	0	0
OGV2	Business	2037	0	2	0	0	0	0	0	0
OGV2	Business	Total	0	123	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	21	0	0	0	0	0	0
Car	Business	2037	0	20	0	0	0	0	0	0
Car	Business	Total	0	904	0	0	0	0	0	0
Car	Commuting	2023	0	131	0	0	0	0	0	0
Car	Commuting	2037	0	126	0	0	0	0	0	0
Car	Commuting	Total	0	5745	0	0	0	0	0	0
Car	Other	2023	0	177	0	0	0	0	0	0
Car	Other	2037	0	166	0	0	0	0	0	0

Car	Other	Total	0	7612	0	0	0	0	0	0
LGV Personal Business		2023	0	0	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0	0	0
LGV Personal Other		2023	0	4	0	0	0	0	0	0
LGV Personal Other		2037	0	4	0	0	0	0	0	0
LGV Personal Other		Total	0	186	0	0	0	0	0	0
LGV Freight Business		2023	0	71	0	0	0	0	0	0
LGV Freight Business		2037	0	67	0	0	0	0	0	0
LGV Freight Business		Total	0	3084	0	0	0	0	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0	0	0
OGV1 Business		2023	0	20	0	0	0	0	0	0
OGV1 Business		2037	0	19	0	0	0	0	0	0
OGV1 Business		Total	0	876	0	0	0	0	0	0
OGV1 Commuting		2023	0	0	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0	0	0
OGV1 Commuting		Total	0	0	0	0	0	0	0	0

OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	17	0	0	0	0	0	0
OGV2	Business	2037	0	16	0	0	0	0	0	0
OGV2	Business	Total	0	747	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	23	0	0	0	0	0	0
Car	Business	2037	0	22	0	0	0	0	0	0
Car	Business	Total	0	990	0	0	0	0	0	0
Car	Commuting	2023	0	124	0	0	0	0	0	0
Car	Commuting	2037	0	124	0	0	0	0	0	0
Car	Commuting	Total	0	5652	0	0	0	0	0	0
Car	Other	2023	0	166	0	0	0	0	0	0
Car	Other	2037	0	163	0	0	0	0	0	0
Car	Other	Total	0	7468	0	0	0	0	0	0



OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	26	0	0	0	0	0	0
OGV2	Business	2037	0	23	0	0	0	0	0	0
OGV2	Business	Total	0	1037	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 15.09% 24.08%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	5745	5745
Vehicle operating costs	-93	-93
User charges	0	0
During Construction & Maintenance	0	0

NET CONSUMER - COMMUTING BENEFITS	5652	5652
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Consumer - Other user benefits	All Modes	Road
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Travel Time	7798	7798
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Vehicle operating costs	-158	-158
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User charges	0	0
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During Construction & Maintenance	0	0
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NET CONSUMER - OTHER BENEFITS	7640	7640
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Business	All Modes	Road	Personal	Road	Freight
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Travel Time	5611	904	4707		
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Vehicle operating costs	494	86	408		
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User charges	0	0	0		
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During Construction & Maintenance	0	0	0		
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Subtotal	6106	990	5115		
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Private Sector Provider Impacts

Revenue	0	0
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Operating costs	0	0
-----------------	---	---

Investment costs	0	0
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Grant/subsidy	0	0
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Subtotal	0	0
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Other business Impacts

Developer contributions	-455	-455
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NET BUSINESS IMPACT            5651

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)            18943

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455
Grant/Subsidy Payments	0	0
NET IMPACT	1336	1336

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	5734	5734
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	5734	5734



Central Government Funding: Non-Transport

Indirect Tax Revenues	-149	-149
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TOTALS

Broad Transport Budget	7070	7070
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Wider Public Finances	-149	-149
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-56
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Economic Efficiency: Consumer Users (Commuting)	5652
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Economic Efficiency: Consumer Users (Other)	7640
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Economic Efficiency: Business Users and Providers	5651
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Wider Public Finances (Indirect Taxation Revenues)	149
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Present Value of Benefits (PVB)	19036
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Broad Transport Budget	7070
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Present Value of Costs (PVC)	7070
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#### OVERALL IMPACTS

Net Present Value (NPV)	11966
Benefit to Cost Ratio (BCR)	2.693

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_V4\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Core\_Senst\_Test\_V4\_150B\1\_Ollerton\_Outputs\_V4\_SensTest\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Core\_Senst\_Test\_V4\_150B\1\_Ollerton\_Outputs\_V4\_SensTest\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 6secs

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-1\_Ollerton\_HighV4.1\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1058.27	F	119.37	1
P	1	CEN	125.2	F	119.37	1
C	1	CEN	8348.47	F	119.37	1
L	1	CEN	280.29	F	119.37	1

S	1	CEN	185.41	F	119.37	1
P	1	LOC	100.545	F	119.37	1
C	1	LOC	2021.517	F	119.37	1
L	1	LOC	68.1715	F	119.37	1
S	1	LOC	185.6835	F	119.37	1
D	1	LOC	690	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	1	0.00	86.96	74.79	0.00	0.00	0.00	0.00	33.34
2022	1	29.22	13.04	25.21	52.87	0.00	0.00	0.00	33.33
2023	1	49.96	0.00	0.00	31.42	0.00	0.00	0.00	33.33
2024	1	20.82	0.00	0.00	15.71	0.315	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.315	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0

2035	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.693	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	4.975	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0

2060	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	26.898	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	3.365	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	7.78	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0



DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05583	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30763	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43971	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11258	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt

6	6	1	V	1	0	2023	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
7	7	1	V	1	0	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
10	3	2	V	1	0	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
12	5	2	V	1	0	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
13	6	2	V	1	0	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
17	3	3	V	1	0	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
20	6	3	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
21	7	3	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
23	2	4	V	1	0	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
24	3	4	V	1	0	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
27	6	4	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
28	7	4	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt

31	3	1	V	1	1	2023	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
35	7	1	V	1	1	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
38	3	2	V	1	1	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
40	5	2	V	1	1	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
45	3	3	V	1	1	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt
51	2	4	V	1	1	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2023 DS.txt









156	2	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
157	3	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
170	2	1	V	1	0	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
171	3	1	V	1	0	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
173	5	1	V	1	0	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
175	7	1	V	1	0	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H PM 2037 DM.txt
177	2	2	V	1	0	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H PM 2037 DM.txt
178	3	2	V	1	0	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H PM 2037 DM.txt
180	5	2	V	1	0	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\VD_4.1_Ollerton_H PM 2037 DM.txt



181	6	2	V	1	0	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DM.txt
182	7	2	V	1	0	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
185	3	3	V	1	0	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
188	6	3	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
189	7	3	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
191	2	4	V	1	0	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
192	3	4	V	1	0	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
195	6	4	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
196	7	4	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
201	5	1	V	1	1	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
203	7	1	V	1	1	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
205	2	2	V	1	1	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt

206	3	2	V	1	1	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
207	4	2	V	1	1	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
208	5	2	V	1	1	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
209	6	2	V	1	1	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
213	3	3	V	1	1	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
216	6	3	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
217	7	3	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\V_4.1_Ollerton_H OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\T_4.1_Ollerton_H AM 2037 DM.txt









331	2	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_High_V4.1\D_4.1_Ollerton_H AM 2023 DM.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:04:29

ERRORS AND WARNINGS

3172 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
5	1	2	Car	Other	All	2037	0.000	0.002	0.111	42.599	42.599	
5	2	2	Car	Other	All	2037	0.000	0.002	0.111	239.621	239.621	
5	3	2	Car	Other	All	2037	0.000	0.002	0.111	72.419	72.419	
5	4	2	Car	Other	All	2037	0.000	0.002	0.111	4.260	4.260	
5	5	2	Car	Other	All	2037	0.000	0.002	0.111	0.532	0.532	
5	3	2	Car	Business	All	2037	0.000	0.002	0.111	5.945	5.945	
5	4	2	Car	Business	All	2037	0.000	0.002	0.111	0.350	0.350	
5	5	2	Car	Business	All	2037	0.000	0.002	0.111	0.044	0.044	
5	1	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	1.062	1.062
5	2	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	5.971	5.971
5	3	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	1.805	1.805
5	4	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	0.106	0.106
5	5	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	0.013	0.013
5	1	2	Car	Commuting	All	2037	0.000	0.002	0.111	22.273	22.273	
5	2	2	Car	Commuting	All	2037	0.000	0.002	0.111	125.284	125.284	



5	3	2	Car	Commuting	All	2037	0.000	0.002	0.111	37.864	37.864
5	4	2	Car	Commuting	All	2037	0.000	0.002	0.111	2.227	2.227
5	5	2	Car	Commuting	All	2037	0.000	0.002	0.111	0.278	0.278
5	1	2	Car	Business	All	2037	0.000	0.002	0.111	3.497	3.497
5	2	2	Car	Business	All	2037	0.000	0.002	0.111	19.670	19.670

Displayed 20 warnings of a total of 161 of this type.

Warning (371 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
5	1	1	Car	Commuting	All	2037	0.155	0.002	66.013	25.533	25.841	
5	2	1	Car	Commuting	All	2037	0.155	0.002	66.013	127.974	127.974	
5	3	1	Car	Commuting	All	2037	0.155	0.002	66.013	39.377	39.377	
5	4	1	Car	Commuting	All	2037	0.155	0.002	66.013	0.923	0.923	
5	1	1	Car	Other	All	2037	0.155	0.002	66.013	36.496	36.936	
5	2	1	Car	Other	All	2037	0.155	0.002	66.013	182.919	182.919	
5	3	1	Car	Other	All	2037	0.155	0.002	66.013	56.283	56.283	
5	4	1	Car	Other	All	2037	0.155	0.002	66.013	1.319	1.319	
5	1	1	Car	Business	All	2037	0.155	0.002	66.013	4.634	4.690	
5	2	1	Car	Business	All	2037	0.155	0.002	66.013	23.225	23.225	
5	3	1	Car	Business	All	2037	0.155	0.002	66.013	7.146	7.146	
5	4	1	Car	Business	All	2037	0.155	0.002	66.013	0.167	0.167	
5	1	1	LGV	Personal	Other	All	2037	0.155	0.002	66.013	1.274	1.289
5	2	1	LGV	Personal	Other	All	2037	0.155	0.002	66.013	6.386	6.386
5	3	1	LGV	Personal	Other	All	2037	0.155	0.002	66.013	1.965	1.965
5	4	1	LGV	Personal	Other	All	2037	0.155	0.002	66.013	0.046	0.046

5	1	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	9.344	9.457
5	2	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	46.833	46.833
5	3	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	14.410	14.410
5	4	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	0.338	0.338

Displayed 20 warnings of a total of 637 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
3	1	1	OGV1	Business	All	2037	2.000	0.190	10.535	15.636	12.000
3	2	1	OGV1	Business	All	2037	2.000	0.190	10.535	7.990	12.000
3	4	1	OGV1	Business	All	2037	2.000	0.190	10.535	1.109	12.000
3	5	1	OGV1	Business	All	2037	2.000	0.190	10.535	6.231	12.000
3	1	1	OGV2	Business	All	2037	2.000	0.190	10.535	12.540	12.000
3	2	1	OGV2	Business	All	2037	2.000	0.190	10.535	6.408	12.000
3	4	1	OGV2	Business	All	2037	2.000	0.190	10.535	0.889	12.000
3	5	1	OGV2	Business	All	2037	2.000	0.190	10.535	4.998	12.000

Displayed 8 warnings.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
5	1	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	1.280	85.000
5	2	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	7.200	85.000
5	3	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	2.176	85.000
5	4	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	0.128	85.000
5	5	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	0.016	85.000

5	1	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	7.783	110.000
5	2	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	43.781	110.000
5	3	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	13.231	110.000
5	4	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	0.778	110.000
5	1	2	Car	Business	All	2037	2.000	0.000	1.18E+04	3.497	130.000
5	2	2	Car	Business	All	2037	2.000	0.000	1.18E+04	19.670	130.000
5	3	2	Car	Business	All	2037	2.000	0.000	1.18E+04	5.945	130.000
5	4	2	Car	Business	All	2037	2.000	0.000	1.18E+04	0.350	130.000
5	5	2	Car	Business	All	2037	2.000	0.000	1.18E+04	0.044	130.000
5	1	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	1.507	85.000
5	2	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	8.478	85.000
5	3	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	2.562	85.000
5	4	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	0.151	85.000
5	5	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	0.019	85.000
5	5	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	0.097	110.000

Displayed 20 warnings of a total of 1078 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.334	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.133	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.518	110.000

2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.368	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.602	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.364	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.961	130.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.587	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.965	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.154	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.424	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.033	110.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.119	85.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.828	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-1\_Ollerton\_HighV4.1\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt



Road	2025	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0

Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0

Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0
Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0



Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0
Road	2054	0	0	0	0	3	0	0	0
Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0

Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0
Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0
Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377
Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1

Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1
Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1

Road	2066	0	1	1
Road	2067	0	1	1
Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1717	1717
Car	2023	PM peak	1934	1934
Car	2023	Inter-peak	5744	5744

Car	2023 Off-peak	829	829
Car	2023 All	10225	10225
Car	2037 AM peak	2104	2105
Car	2037 PM peak	2398	2398
Car	2037 Inter-peak	6864	6867
Car	2037 Off-peak	829	989
Car	2037 All	12196	12359
LGV Personal	2023 AM peak	33	33
LGV Personal	2023 PM peak	30	30
LGV Personal	2023 Inter-peak	124	124
LGV Personal	2023 Off-peak	18	18
LGV Personal	2023 All	204	204
LGV Personal	2037 AM peak	40	40
LGV Personal	2037 PM peak	37	37
LGV Personal	2037 Inter-peak	148	148
LGV Personal	2037 Off-peak	18	21
LGV Personal	2037 All	243	246
LGV Freight	2023 AM peak	241	241
LGV Freight	2023 PM peak	220	220
LGV Freight	2023 Inter-peak	906	906
LGV Freight	2023 Off-peak	131	131
LGV Freight	2023 All	1498	1498
LGV Freight	2037 AM peak	295	295
LGV Freight	2037 PM peak	273	273
LGV Freight	2037 Inter-peak	1083	1083

LGV Freight	2037 Off-peak	131	156
LGV Freight	2037 All	1782	1807
OGV1	2023 AM peak	82	82
OGV1	2023 PM peak	36	36
OGV1	2023 Inter-peak	409	409
OGV1	2023 Off-peak	59	59
OGV1	2023 All	586	586
OGV1	2037 AM peak	100	100
OGV1	2037 PM peak	45	45
OGV1	2037 Inter-peak	489	489
OGV1	2037 Off-peak	59	70
OGV1	2037 All	693	704
OGV2	2023 AM peak	66	66
OGV2	2023 PM peak	43	43
OGV2	2023 Inter-peak	288	288
OGV2	2023 Off-peak	42	42
OGV2	2023 All	438	438
OGV2	2037 AM peak	80	80
OGV2	2037 PM peak	53	53
OGV2	2037 Inter-peak	344	345
OGV2	2037 Off-peak	42	50
OGV2	2037 All	519	527
All	2023 AM peak	2138	2138
All	2023 PM peak	2262	2262
All	2023 Inter-peak	7472	7472

All	2023	Off-peak	1078	1078
All	2023	All	12951	12951
All	2037	AM peak	2620	2620
All	2037	PM peak	2806	2806
All	2037	Inter-peak	8928	8931
All	2037	Off-peak	1078	1287
All	2037	All	15432	15645

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	591	0	1493	970	100	0	1497	953
Road	2037	1456	0	1006	745	157	0	1001	712

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	669	629	94	670	635	94
Car	2037	609	425	862	611	433	874
LGV Personal	2023	0	38	1	0	39	1
LGV Personal	2037	0	37	18	0	39	18
LGV Freight	2023	3	282	6	3	286	6
LGV Freight	2037	2	273	133	2	282	135
OGV1	2023	0	199	0	0	197	0



OGV1	2037	0	246	0	0	237	0
OGV2	2023	0	250	0	0	245	0
OGV2	2037	0	319	0	0	294	0
All	2023	673	1399	100	674	1402	100
All	2037	611	1300	1013	613	1285	1027
Car	Total	31231	22302	65981	31324	22687	66837
LGV Personal	Total	16	2036	1608	16	2101	1630
LGV Freight	Total	114	14933	11790	115	15407	11956
OGV1	Total	0	14405	0	0	13942	0
OGV2	Total	0	18648	0	0	17292	0
All	Total	31361	72325	79379	31454	71430	80424

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2908	2925	17	58	59	0	118	119	1	176	177	1
Car	2037	2288	2312	23	53	53	1	104	106	1	157	159	2
LGV Personal	2023	94	95	1	2	2	0	4	4	0	6	6	0
LGV Personal	2037	91	94	3	2	2	0	4	4	0	6	6	0
LGV Freight	2023	690	699	9	14	14	0	28	28	0	42	42	1
LGV Freight	2037	665	688	23	15	16	1	30	31	1	46	47	2
OGV1	2023	481	478	-3	10	10	-0	20	19	-0	29	29	-0
OGV1	2037	595	574	-21	14	13	-0	27	26	-1	41	39	-1
OGV2	2023	606	592	-14	12	12	-0	25	24	-1	37	36	-1
OGV2	2037	773	713	-61	18	16	-1	35	33	-3	53	49	-4

All	2023	4778	4789	11	96	96	0	194	194	0	289	290	1
All	2024	4757	4766	9	94	95	0	189	189	0	283	284	1
All	2025	4721	4727	6	93	93	0	184	184	0	277	277	0
All	2026	4693	4696	3	89	89	0	179	179	0	268	268	0
All	2027	4662	4663	1	88	88	0	174	174	0	262	262	0
All	2028	4622	4620	-2	84	84	-0	171	171	-0	255	255	-0
All	2029	4593	4588	-6	83	83	-0	166	166	-0	249	249	-0
All	2030	4561	4553	-9	80	80	-0	161	161	-0	241	241	-0
All	2031	4524	4512	-12	84	84	-0	168	168	-0	252	251	-1
All	2032	4501	4485	-15	88	88	-0	176	176	-1	264	263	-1
All	2033	4482	4463	-19	92	91	-0	182	181	-1	274	272	-1
All	2034	4455	4433	-22	93	93	-0	188	187	-1	281	280	-1
All	2035	4442	4417	-25	96	96	-1	193	192	-1	291	289	-2
All	2036	4431	4403	-29	99	99	-1	198	197	-1	298	296	-2
All	2037	4413	4381	-32	101	101	-1	201	200	-1	303	301	-2
All	2038	4351	4318	-33	101	100	-1	203	202	-2	304	302	-2
All	2039	4292	4258	-34	102	101	-1	204	202	-2	307	304	-2
All	2040	4227	4192	-35	102	101	-1	204	202	-2	306	304	-3
All	2041	4170	4134	-36	102	101	-1	203	202	-2	306	303	-3
All	2042	4115	4079	-36	101	100	-1	203	202	-2	304	302	-3
All	2043	4054	4017	-37	101	100	-1	202	200	-2	303	301	-3
All	2044	4004	3966	-38	100	100	-1	201	199	-2	301	299	-3
All	2045	3957	3918	-39	100	99	-1	199	197	-2	299	296	-3
All	2046	3903	3864	-39	98	97	-1	198	196	-2	296	293	-3
All	2047	3859	3819	-40	98	97	-1	195	193	-2	294	291	-3

All	2048	3816	3775	-41	97	96	-1	194	192	-2	291	288	-3
All	2049	3766	3725	-41	96	95	-1	191	189	-2	287	283	-3
All	2050	3722	3680	-42	94	93	-1	189	187	-2	283	279	-3
All	2051	3722	3680	-42	94	93	-1	190	187	-2	286	282	-3
All	2052	3722	3680	-42	93	92	-1	190	188	-2	287	284	-3
All	2053	3722	3680	-42	93	92	-1	191	189	-2	289	285	-3
All	2054	3722	3680	-42	91	90	-1	191	189	-2	290	287	-3
All	2055	3722	3680	-42	91	90	-1	191	189	-2	291	288	-3
All	2056	3722	3680	-42	90	89	-1	190	188	-2	291	288	-3
All	2057	3722	3680	-42	88	87	-1	190	188	-2	292	288	-3
All	2058	3722	3680	-42	87	86	-1	189	187	-2	291	288	-3
All	2059	3722	3680	-42	86	85	-1	188	186	-2	291	287	-3
All	2060	3722	3680	-42	84	83	-1	187	185	-2	289	286	-3
All	2061	3722	3680	-42	82	81	-1	185	183	-2	287	284	-3
All	2062	3722	3680	-42	80	79	-1	182	180	-2	285	282	-3
All	2063	3722	3680	-42	78	78	-1	180	178	-2	282	278	-3
All	2064	3722	3680	-42	76	75	-1	177	175	-2	278	275	-3
All	2065	3722	3680	-42	74	73	-1	174	172	-2	274	271	-3
All	2066	3722	3680	-42	72	71	-1	171	169	-2	270	267	-3
All	2067	3722	3680	-42	70	69	-1	168	166	-2	266	263	-3
All	2068	3722	3680	-42	67	66	-1	165	163	-2	262	259	-3
All	2069	3722	3680	-42	65	64	-1	161	159	-2	257	254	-3
All	2070	3722	3680	-42	63	62	-1	157	156	-2	252	249	-3
All	2071	3722	3680	-42	61	60	-1	154	152	-2	246	244	-3
All	2072	3722	3680	-42	58	58	-1	150	148	-2	241	239	-3



LGV Freight	2037	8	8	0	0	0	0	0	0	0	0	1	1	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	26	26	0	0	0	0	0	0	0	0	1	1	0
All	2024	32	32	0	0	0	0	1	1	0	0	1	1	0
All	2025	40	40	0	0	0	0	1	1	0	0	2	2	0
All	2026	48	48	0	1	1	0	1	1	0	0	2	2	0
All	2027	55	55	0	1	1	0	2	2	0	0	2	2	0
All	2028	60	61	0	1	1	0	2	2	0	0	3	3	0
All	2029	63	64	0	1	1	0	2	2	0	0	3	3	0
All	2030	64	65	0	1	1	0	2	2	0	0	3	3	0
All	2031	66	66	1	1	1	0	2	2	0	0	4	4	0
All	2032	66	67	1	1	1	0	3	3	0	0	4	4	0
All	2033	66	67	1	1	1	0	3	3	0	0	4	4	0
All	2034	65	65	1	1	1	0	3	3	0	0	4	4	0
All	2035	63	64	1	1	1	0	3	3	0	0	4	4	0
All	2036	61	62	1	1	1	0	3	3	0	0	4	4	0
All	2037	59	59	1	1	1	0	3	3	0	0	4	4	0
All	2038	55	56	1	1	1	0	3	3	0	0	4	4	0
All	2039	52	52	1	1	1	0	2	2	0	0	4	4	0
All	2040	48	49	1	1	1	0	2	2	0	0	4	4	0
All	2041	49	50	1	1	1	0	2	2	0	0	4	4	0
All	2042	50	50	1	1	1	0	2	2	0	0	4	4	0

All	2043	50	50	1	1	1	0	2	3	0	4	4	0
All	2044	50	50	1	1	1	0	2	3	0	4	4	0
All	2045	50	50	1	1	1	0	2	3	0	4	4	0
All	2046	49	50	1	1	1	0	2	3	0	4	4	0
All	2047	49	49	1	1	1	0	2	2	0	4	4	0
All	2048	48	49	1	1	1	0	2	2	0	4	4	0
All	2049	47	48	1	1	1	0	2	2	0	4	4	0
All	2050	46	47	1	1	1	0	2	2	0	4	4	0
All	2051	46	47	1	1	1	0	2	2	0	4	4	0
All	2052	46	47	1	1	1	0	2	2	0	4	4	0
All	2053	46	47	1	1	1	0	2	2	0	4	4	0
All	2054	46	47	1	1	1	0	2	2	0	4	4	0
All	2055	46	47	1	1	1	0	2	2	0	4	4	0
All	2056	46	47	1	1	1	0	2	2	0	4	4	0
All	2057	46	47	1	1	1	0	2	2	0	4	4	0
All	2058	46	47	1	1	1	0	2	2	0	4	4	0
All	2059	46	47	1	1	1	0	2	2	0	4	4	0
All	2060	46	47	1	1	1	0	2	2	0	4	4	0
All	2061	46	47	1	1	1	0	2	2	0	4	4	0
All	2062	46	47	1	1	1	0	2	2	0	4	4	0
All	2063	46	47	1	1	1	0	2	2	0	3	4	0
All	2064	46	47	1	1	1	0	2	2	0	3	3	0
All	2065	46	47	1	1	1	0	2	2	0	3	3	0
All	2066	46	47	1	1	1	0	2	2	0	3	3	0
All	2067	46	47	1	1	1	0	2	2	0	3	3	0



AM peak	2023	754	774	20	15	15	0	31	31	1	46	47	1
AM peak	2037	881	712	-169	20	16	-4	40	32	-8	60	49	-12
PM peak	2023	766	757	-9	15	15	-0	31	31	-0	46	46	-1
PM peak	2037	675	675	0	16	16	0	31	31	0	46	46	0
Inter-peak	2023	2847	2847	0	57	57	0	115	115	0	172	172	0
Inter-peak	2037	2541	2617	76	58	60	2	116	119	3	174	180	5
Off-peak	2023	411	411	0	8	8	0	17	17	0	25	25	0
Off-peak	2037	316	377	61	7	9	1	14	17	3	22	26	4
AM peak	Total	46601	38452	-8149	946	780	-166	2049	1685	-365	3154	2590	-564
PM peak	Total	35953	35890	-63	729	728	-1	1573	1571	-2	2417	2414	-4
Inter-peak	Total	139696	143052	3356	2832	2900	69	6119	6269	150	9410	9640	231
Off-peak	Total	17736	20619	2883	359	418	59	775	904	129	1191	1389	199

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0



PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	11	11	0	0	0	0	1	1	0	1	1	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	33	33	0	1	1	0	2	2	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	5	1	0	0	0	0	0	0	0	0	0
AM peak	Total	505	505	0	10	10	0	22	22	0	33	33	0
PM peak	Total	558	558	0	11	11	0	24	24	0	37	37	0
Inter-peak	Total	1682	1683	0	34	34	0	72	72	0	111	111	0
Off-peak	Total	208	243	35	4	5	1	9	10	2	14	16	2

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	490	0	-3	17	0	2
Road	2024	561	0	-1	20	0	2
Road	2025	629	0	1	22	0	1
Road	2026	694	0	4	24	0	1
Road	2027	758	0	6	26	0	0
Road	2028	821	0	8	28	0	-0
Road	2029	881	0	10	29	0	-1
Road	2030	940	0	11	31	0	-1
Road	2031	997	0	13	32	0	-2
Road	2032	1052	0	14	33	0	-2

Road	2033	1104	0	15	34	0	-2
Road	2034	1155	0	17	35	0	-3
Road	2035	1205	0	18	36	0	-3
Road	2036	1253	0	19	37	0	-3
Road	2037	1300	0	20	38	0	-4
Road	2038	1281	0	19	36	0	-4
Road	2039	1262	0	19	35	0	-4
Road	2040	1243	0	18	34	0	-4
Road	2041	1224	0	17	33	0	-4
Road	2042	1206	0	17	32	0	-4
Road	2043	1188	0	16	31	0	-4
Road	2044	1170	0	16	30	0	-4
Road	2045	1152	0	15	29	0	-4
Road	2046	1134	0	15	28	0	-4
Road	2047	1116	0	15	27	0	-3
Road	2048	1099	0	14	26	0	-3
Road	2049	1081	0	14	25	0	-3
Road	2050	1064	0	13	24	0	-3
Road	2051	1054	0	13	23	0	-3
Road	2052	1044	0	13	23	0	-3
Road	2053	1033	0	12	22	0	-3
Road	2054	1023	0	12	21	0	-3
Road	2055	1013	0	12	21	0	-3
Road	2056	1002	0	11	20	0	-3
Road	2057	992	0	11	20	0	-3

Road	2058	982	0	11	19	0	-3
Road	2059	973	0	11	19	0	-3
Road	2060	963	0	10	18	0	-3
Road	2061	954	0	10	17	0	-3
Road	2062	945	0	10	17	0	-3
Road	2063	936	0	10	16	0	-3
Road	2064	927	0	9	16	0	-2
Road	2065	920	0	9	15	0	-2
Road	2066	912	0	9	15	0	-2
Road	2067	904	0	9	15	0	-2
Road	2068	897	0	8	14	0	-2
Road	2069	889	0	8	14	0	-2
Road	2070	881	0	8	13	0	-2
Road	2071	874	0	8	13	0	-2
Road	2072	866	0	8	13	0	-2
Road	2073	859	0	7	12	0	-2
Road	2074	851	0	7	12	0	-2
Road	2075	844	0	7	12	0	-2
Road	2076	836	0	7	11	0	-2
Road	2077	829	0	7	11	0	-2
Road	2078	822	0	7	11	0	-2
Road	2079	815	0	6	10	0	-2
Road	2080	808	0	6	10	0	-2
Road	2081	801	0	6	10	0	-2
Road	2082	794	0	6	9	0	-2

Road	Total	58298	0	644	1325	0	-137
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SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri		Non_fuel	PT_fares_(pri	Taxes
Car	2023	365	0	-5	3	0	3
Car	2037	924	0	2	3	0	3
LGV Personal	2023	5	0	-0	0	0	0
LGV Personal	2037	13	0	-0	-0	0	0
LGV Freight	2023	79	0	-3	3	0	2
LGV Freight	2037	222	0	-3	6	0	3
OGV1	2023	23	0	1	4	0	-1
OGV1	2037	79	0	6	12	0	-2
OGV2	2023	19	0	4	7	0	-2
OGV2	2037	61	0	15	17	0	-7
All	2023	490	0	-3	17	0	2
All	2037	1300	0	20	38	0	-4
Car	Total	41558	0	23	129	0	101
LGV Personal	Total	597	0	-14	-7	0	13
LGV Freight	Total	9920	0	-101	197	0	95
OGV1	Total	3514	0	216	404	0	-88
OGV2	Total	2710	0	521	602	0	-259
All	Total	58298	0	644	1325	0	-137

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_Type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
All	2023	490	0	-3	17	0	2
All	2037	1300	0	20	38	0	-4
All	Total	58298	0	644	1325	0	-137

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	144	0	2	17	0	-1
Business	2037	429	0	18	43	0	-7
Commuting	2023	147	0	-2	0	0	1
Commuting	2037	368	0	4	-1	0	-1
Other	2023	199	0	-3	0	0	2
Other	2037	503	0	-3	-3	0	4
Business	Total	19118	0	636	1479	0	-246
Commuting	Total	16553	0	104	-44	0	-29
Other	Total	22627	0	-96	-110	0	139

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time PT_fares_(pri	Fuel	Non_fuel PT_fares_(pri	Taxes		
AM peak	2023	242	0	-6	9	0	3
AM peak	2037	1026	0	36	31	0	-20
PM peak	2023	182	0	3	5	0	-2
PM peak	2037	-39	0	0	-1	0	0
Inter-peak	2023	65	0	0	3	0	0
Inter-peak	2037	311	0	-16	12	0	9
Off-peak	2023	2	0	0	0	0	0
Off-peak	2037	1	0	0	-5	0	7
AM peak	Total	45032	0	1112	1069	0	-654
PM peak	Total	-391	0	18	5	0	-10
Inter-peak	Total	13589	0	-486	401	0	290
Off-peak	Total	69	0	0	-150	0	237

#### NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	1	3	0
Car	Business	2037	0	0	-0	3	1	10
Car	Business	Total	0	0	-18	190	63	530
Car	Commuting	2023	0	0	0	2	18	0
Car	Commuting	2037	0	0	-2	6	4	56
Car	Commuting	Total	0	0	-112	318	353	2922
Car	Other	2023	0	0	0	14	44	0
Car	Other	2037	0	0	-6	62	9	120

Car	Other	Total	0	0	-338	3359	808	6321
LGV Personal Business	2023		0	0	0	0	0	0
LGV Personal Business	2037		0	0	0	0	0	0
LGV Personal Business	Total		0	0	0	0	0	0
LGV Personal Commuting	2023		0	0	0	0	0	0
LGV Personal Commuting	2037		0	0	0	0	0	0
LGV Personal Commuting	Total		0	0	0	0	0	0
LGV Personal Other	2023		0	0	0	0	1	0
LGV Personal Other	2037		0	0	-0	1	0	4
LGV Personal Other	Total		0	0	-7	72	23	188
LGV Freight Business	2023		0	0	0	2	7	0
LGV Freight Business	2037		0	0	-1	8	2	22
LGV Freight Business	Total		0	0	-41	431	136	1136
LGV Freight Commuting	2023		0	0	0	0	0	0
LGV Freight Commuting	2037		0	0	0	0	0	0
LGV Freight Commuting	Total		0	0	0	0	0	0
LGV Freight Other	2023		0	0	0	0	0	0
LGV Freight Other	2037		0	0	0	0	0	0
LGV Freight Other	Total		0	0	0	0	0	0
OGV1 Business	2023		0	0	0	1	2	0
OGV1 Business	2037		0	0	-0	3	0	6
OGV1 Business	Total		0	0	-6	161	36	321
OGV1 Commuting	2023		0	0	0	0	0	0
OGV1 Commuting	2037		0	0	0	0	0	0
OGV1 Commuting	Total		0	0	0	0	0	0

OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	1	0
OGV2	Business	2037	0	0	-0	2	0	5
OGV2	Business	Total	0	0	-7	114	30	258
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	5	18	0
Car	Business	2037	0	0	-2	17	4	48
Car	Business	Total	0	0	-68	736	280	2027
Car	Commuting	2023	0	0	0	17	130	0
Car	Commuting	2037	0	0	-12	33	24	323
Car	Commuting	Total	0	0	-525	1519	1930	13630
Car	Other	2023	0	0	0	47	148	0
Car	Other	2037	0	0	-17	164	24	319
Car	Other	Total	0	0	-719	7252	2041	13456



LGV Personal Business	2023	0	0	0	0	0	0
LGV Personal Business	2037	0	0	0	0	0	0
LGV Personal Business	Total	0	0	0	0	0	0
LGV Personal Commuting	2023	0	0	0	0	0	0
LGV Personal Commuting	2037	0	0	0	0	0	0
LGV Personal Commuting	Total	0	0	0	0	0	0
LGV Personal Other	2023	0	0	0	1	4	0
LGV Personal Other	2037	0	0	-0	3	1	9
LGV Personal Other	Total	0	0	-15	154	56	401
LGV Freight Business	2023	0	0	0	17	62	0
LGV Freight Business	2037	0	0	-6	58	12	158
LGV Freight Business	Total	0	0	-243	2566	934	6662
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	0	6	16	0
OGV1 Business	2037	0	0	-1	25	4	51
OGV1 Business	Total	0	0	-38	1101	277	2174
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0

OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	5	14	0
OGV2	Business	2037	0	0	-1	18	3	41
OGV2	Business	Total	0	0	-45	779	232	1743
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	6	21	0
Car	Business	2037	0	0	-2	18	4	55
Car	Business	Total	0	0	-74	777	307	2241
Car	Commuting	2023	0	0	0	17	128	0
Car	Commuting	2037	0	0	-12	30	24	328
Car	Commuting	Total	0	0	-525	1435	1903	13801
Car	Other	2023	0	0	0	47	145	0
Car	Other	2037	0	0	-17	151	23	327
Car	Other	Total	0	0	-719	6860	2003	13700
LGV	Personal Business	2023	0	0	0	0	0	0

LGV Personal Business	2037	0	0	0	0	0	0
LGV Personal Business	Total	0	0	0	0	0	0
LGV Personal Commuting	2023	0	0	0	0	0	0
LGV Personal Commuting	2037	0	0	0	0	0	0
LGV Personal Commuting	Total	0	0	0	0	0	0
LGV Personal Other	2023	0	0	0	1	3	0
LGV Personal Other	2037	0	0	-0	3	1	10
LGV Personal Other	Total	0	0	-15	128	51	412
LGV Freight Business	2023	0	0	0	17	61	0
LGV Freight Business	2037	0	0	-6	55	12	164
LGV Freight Business	Total	0	0	-247	2475	919	6869
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	0	7	20	0
OGV1 Business	2037	0	0	-1	28	5	65
OGV1 Business	Total	0	0	-43	1217	326	2634
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0







LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	5	0	0	0	0	0	0
LGV Personal	Other	2037	0	13	0	0	0	0	0	0
LGV Personal	Other	Total	0	597	0	0	0	0	0	0
LGV Freight	Business	2023	0	79	0	0	0	0	0	0
LGV Freight	Business	2037	0	222	0	0	0	0	0	0
LGV Freight	Business	Total	0	9920	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	23	0	0	0	0	0	0
OGV1	Business	2037	0	79	0	0	0	0	0	0
OGV1	Business	Total	0	3514	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	19	0	0	0	0	0	0





LGV Personal Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal Other	2023	0	4	0	0	0	0	0	0
LGV Personal Other	2037	0	13	0	0	0	0	0	0
LGV Personal Other	Total	0	576	0	0	0	0	0	0
LGV Freight Business	2023	0	79	0	0	0	0	0	0
LGV Freight Business	2037	0	225	0	0	0	0	0	0
LGV Freight Business	Total	0	10015	0	0	0	0	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0	0	0
OGV1 Business	2023	0	28	0	0	0	0	0	0
OGV1 Business	2037	0	97	0	0	0	0	0	0
OGV1 Business	Total	0	4134	0	0	0	0	0	0
OGV1 Commuting	2023	0	0	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0	0	0
OGV2 Business	2023	0	30	0	0	0	0	0	0
OGV2 Business	2037	0	93	0	0	0	0	0	0

OGV2	Business	Total	0	3833	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 16.51% 42.32%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	16553	16553
Vehicle operating costs	60	60
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>16614</b>	<b>16614</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	22627	22627

Vehicle operating costs	-206	-206
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	22421	22421

Business	All Modes	Road Personal	Road Freight
Travel Time	19118	2975	16143
Vehicle operating costs	2115	276	1839
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	21233	3251	17982

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-455	-455
NET BUSINESS IMPACT	20778	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE) 59813

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455
Grant/Subsidy Payments	0	0
NET IMPACT	1336	1336

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	5734	5734
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	5734	5734

Central Government Funding: Non-Transport

Indirect Tax Revenues 137 137

TOTALS

Broad Transport Budget	7070	7070
Wider Public Finances	137	137

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	89
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Economic Efficiency: Consumer Users (Commuting)	16614
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Economic Efficiency: Consumer Users (Other)	22421
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Economic Efficiency: Business Users and Providers	20778
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Wider Public Finances (Indirect Taxation Revenues)	-137
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Present Value of Benefits (PVB)	59765
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Broad Transport Budget	7070
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Present Value of Costs (PVC)	7070
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OVERALL IMPACTS

Net Present Value (NPV)	52695
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Benefit to Cost Ratio (BCR)	8.453
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Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_HighV4.1\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4.1\_High\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_High\_V4.1\_150B\1\_TUBA\_Ollerton\_High\_v4.1\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_High\_V4.1\_150B\1\_TUBA\_Ollerton\_High\_v4.1\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 6secs

ERRORS AND WARNINGS

3172 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
5	1	2	Car	Other	All	2037	0.000	0.002	0.111	42.599	42.599	
5	2	2	Car	Other	All	2037	0.000	0.002	0.111	239.621	239.621	
5	3	2	Car	Other	All	2037	0.000	0.002	0.111	72.419	72.419	
5	4	2	Car	Other	All	2037	0.000	0.002	0.111	4.260	4.260	
5	5	2	Car	Other	All	2037	0.000	0.002	0.111	0.532	0.532	
5	3	2	Car	Business	All	2037	0.000	0.002	0.111	5.945	5.945	
5	4	2	Car	Business	All	2037	0.000	0.002	0.111	0.350	0.350	
5	5	2	Car	Business	All	2037	0.000	0.002	0.111	0.044	0.044	
5	1	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	1.062	1.062
5	2	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	5.971	5.971
5	3	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	1.805	1.805
5	4	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	0.106	0.106
5	5	2	LGV	Personal	Other	All	2037	0.000	0.002	0.111	0.013	0.013
5	1	2	Car	Commuting	All	2037	0.000	0.002	0.111	22.273	22.273	
5	2	2	Car	Commuting	All	2037	0.000	0.002	0.111	125.284	125.284	
5	3	2	Car	Commuting	All	2037	0.000	0.002	0.111	37.864	37.864	
5	4	2	Car	Commuting	All	2037	0.000	0.002	0.111	2.227	2.227	
5	5	2	Car	Commuting	All	2037	0.000	0.002	0.111	0.278	0.278	
5	1	2	Car	Business	All	2037	0.000	0.002	0.111	3.497	3.497	
5	2	2	Car	Business	All	2037	0.000	0.002	0.111	19.670	19.670	

Displayed 20 warnings of a total of 161 of this type.

Warning (371 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
5	1	1	Car	Commuting	All	2037	0.155	0.002	66.013	25.533	25.841
5	2	1	Car	Commuting	All	2037	0.155	0.002	66.013	127.974	127.974
5	3	1	Car	Commuting	All	2037	0.155	0.002	66.013	39.377	39.377
5	4	1	Car	Commuting	All	2037	0.155	0.002	66.013	0.923	0.923
5	1	1	Car	Other	All	2037	0.155	0.002	66.013	36.496	36.936
5	2	1	Car	Other	All	2037	0.155	0.002	66.013	182.919	182.919
5	3	1	Car	Other	All	2037	0.155	0.002	66.013	56.283	56.283
5	4	1	Car	Other	All	2037	0.155	0.002	66.013	1.319	1.319
5	1	1	Car	Business	All	2037	0.155	0.002	66.013	4.634	4.690
5	2	1	Car	Business	All	2037	0.155	0.002	66.013	23.225	23.225

5	3	1	Car	Business	All	2037	0.155	0.002	66.013	7.146	7.146
5	4	1	Car	Business	All	2037	0.155	0.002	66.013	0.167	0.167
5	1	1	LGV Personal	Other	All	2037	0.155	0.002	66.013	1.274	1.289
5	2	1	LGV Personal	Other	All	2037	0.155	0.002	66.013	6.386	6.386
5	3	1	LGV Personal	Other	All	2037	0.155	0.002	66.013	1.965	1.965
5	4	1	LGV Personal	Other	All	2037	0.155	0.002	66.013	0.046	0.046
5	1	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	9.344	9.457
5	2	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	46.833	46.833
5	3	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	14.410	14.410
5	4	1	LGV Freight	Business	All	2037	0.155	0.002	66.013	0.338	0.338

Displayed 20 warnings of a total of 637 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
3	1	1	OGV1	Business	All	2037	2.000	0.190	10.535	15.636	12.000
3	2	1	OGV1	Business	All	2037	2.000	0.190	10.535	7.990	12.000
3	4	1	OGV1	Business	All	2037	2.000	0.190	10.535	1.109	12.000
3	5	1	OGV1	Business	All	2037	2.000	0.190	10.535	6.231	12.000
3	1	1	OGV2	Business	All	2037	2.000	0.190	10.535	12.540	12.000
3	2	1	OGV2	Business	All	2037	2.000	0.190	10.535	6.408	12.000
3	4	1	OGV2	Business	All	2037	2.000	0.190	10.535	0.889	12.000
3	5	1	OGV2	Business	All	2037	2.000	0.190	10.535	4.998	12.000

Displayed 8 warnings.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
5	1	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	1.280	85.000
5	2	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	7.200	85.000
5	3	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	2.176	85.000
5	4	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	0.128	85.000
5	5	2	OGV1	Business	All	2037	2.000	0.000	1.18E+04	0.016	85.000
5	1	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	7.783	110.000
5	2	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	43.781	110.000
5	3	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	13.231	110.000
5	4	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	0.778	110.000
5	1	2	Car	Business	All	2037	2.000	0.000	1.18E+04	3.497	130.000
5	2	2	Car	Business	All	2037	2.000	0.000	1.18E+04	19.670	130.000
5	3	2	Car	Business	All	2037	2.000	0.000	1.18E+04	5.945	130.000
5	4	2	Car	Business	All	2037	2.000	0.000	1.18E+04	0.350	130.000
5	5	2	Car	Business	All	2037	2.000	0.000	1.18E+04	0.044	130.000
5	1	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	1.507	85.000
5	2	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	8.478	85.000
5	3	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	2.562	85.000
5	4	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	0.151	85.000



5	5	2	OGV2	Business	All	2037	2.000	0.000	1.18E+04	0.019	85.000
5	5	2	LGV Freight	Business	All	2037	2.000	0.000	1.18E+04	0.097	110.000

Displayed 20 warnings of a total of 1078 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.334	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.133	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.518	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.368	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.602	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.364	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.961	130.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.587	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.965	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.154	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.424	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.033	110.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.119	85.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.828	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276

2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482

2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*\*\* change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549

2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972

2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000

2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000

2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000



2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000

2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392

2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000

2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000

2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000

2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000

2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000

2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898



2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000

2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684

2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952

2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857

2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680

2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175

2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817

2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
		max	min			
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85 12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85 12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85 12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
		max	min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130 10



1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031

2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646

2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283

2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913

2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699

2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820

2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484

2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010



2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285

2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106

2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320

2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172

2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582

2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830

2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507

2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000



2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027

2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013

2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000



Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0

Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0
Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0
Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0
Road	2054	0	0	0	0	3	0	0	0

Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0
Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0
Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0
Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377
Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2

Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1
Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1
Road	2066	0	1	1
Road	2067	0	1	1
Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0



Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1717	1717
Car	2023	PM peak	1934	1934
Car	2023	Inter-peak	5744	5744
Car	2023	Off-peak	829	829
Car	2023	All	10225	10225
Car	2037	AM peak	2104	2105
Car	2037	PM peak	2398	2398
Car	2037	Inter-peak	6864	6867
Car	2037	Off-peak	829	989
Car	2037	All	12196	12359
LGV Personal	2023	AM peak	33	33
LGV Personal	2023	PM peak	30	30
LGV Personal	2023	Inter-peak	124	124
LGV Personal	2023	Off-peak	18	18
LGV Personal	2023	All	204	204
LGV Personal	2037	AM peak	40	40
LGV Personal	2037	PM peak	37	37
LGV Personal	2037	Inter-peak	148	148
LGV Personal	2037	Off-peak	18	21
LGV Personal	2037	All	243	246
LGV Freight	2023	AM peak	241	241
LGV Freight	2023	PM peak	220	220
LGV Freight	2023	Inter-peak	906	906
LGV Freight	2023	Off-peak	131	131
LGV Freight	2023	All	1498	1498
LGV Freight	2037	AM peak	295	295
LGV Freight	2037	PM peak	273	273
LGV Freight	2037	Inter-peak	1083	1083
LGV Freight	2037	Off-peak	131	156
LGV Freight	2037	All	1782	1807
OGV1	2023	AM peak	82	82
OGV1	2023	PM peak	36	36

OGV1	2023	Inter-peak	409	409
OGV1	2023	Off-peak	59	59
OGV1	2023	All	586	586
OGV1	2037	AM peak	100	100
OGV1	2037	PM peak	45	45
OGV1	2037	Inter-peak	489	489
OGV1	2037	Off-peak	59	70
OGV1	2037	All	693	704
OGV2	2023	AM peak	66	66
OGV2	2023	PM peak	43	43
OGV2	2023	Inter-peak	288	288
OGV2	2023	Off-peak	42	42
OGV2	2023	All	438	438
OGV2	2037	AM peak	80	80
OGV2	2037	PM peak	53	53
OGV2	2037	Inter-peak	344	345
OGV2	2037	Off-peak	42	50
OGV2	2037	All	519	527
All	2023	AM peak	2138	2138
All	2023	PM peak	2262	2262
All	2023	Inter-peak	7472	7472
All	2023	Off-peak	1078	1078
All	2023	All	12951	12951
All	2037	AM peak	2620	2620
All	2037	PM peak	2806	2806
All	2037	Inter-peak	8928	8931
All	2037	Off-peak	1078	1287
All	2037	All	15432	15645

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	567	0	1521	970	96	0	1525	952
Road	2037	1337	0	874	745	144	0	872	712

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	746	629	96	747	635	96
Car	2037	623	331	1110	625	337	1125
LGV Personal	2023	1	38	1	1	39	1
LGV Personal	2037	1	31	11	1	33	11
LGV Freight	2023	6	280	4	6	284	4

LGV Freight	2037	9	230	83	10	238	84
OGV1	2023	0	195	0	0	194	0
OGV1	2037	0	209	0	0	201	0
OGV2	2023	0	242	0	0	236	0
OGV2	2037	0	231	0	0	213	0
All	2023	753	1383	100	754	1387	100
All	2037	634	1032	1205	636	1022	1221
Car	Total	31789	17813	79200	31883	18116	80225
LGV Personal	Total	84	1690	1040	85	1743	1054
LGV Freight	Total	619	12395	7625	622	12783	7733
OGV1	Total	0	11948	0	0	11569	0
OGV2	Total	0	13573	0	0	12604	0
All	Total	32493	57420	87864	32590	56814	89012

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3066	3084	18	61	62	0	124	125	1	186	187	1
Car	2037	2091	2110	19	48	49	0	95	96	1	144	145	1
LGV Personal	2023	94	95	1	2	2	0	4	4	0	6	6	0
LGV Personal	2037	79	81	3	2	2	0	4	4	0	5	6	0
LGV Freight	2023	690	699	9	14	14	0	28	28	0	42	42	1
LGV Freight	2037	577	597	19	13	14	0	26	27	1	40	41	1
OGV1	2023	472	468	-3	9	9	-0	19	19	-0	29	28	-0
OGV1	2037	505	488	-18	12	11	-0	23	22	-1	35	33	-1
OGV2	2023	585	572	-13	12	11	-0	24	23	-1	35	35	-1
OGV2	2037	559	515	-44	13	12	-1	26	24	-2	38	35	-3
All	2023	4907	4918	12	98	98	0	199	199	0	297	298	1
All	2024	4880	4889	10	97	97	0	194	194	0	291	291	1
All	2025	4816	4823	7	95	95	0	187	188	0	282	283	0
All	2026	4749	4754	5	90	91	0	181	181	0	271	272	0
All	2027	4681	4684	3	88	88	0	175	175	0	263	263	0
All	2028	4614	4615	0	84	84	0	171	171	0	255	255	0
All	2029	4550	4547	-2	82	82	-0	165	164	-0	247	247	-0
All	2030	4426	4422	-5	77	77	-0	157	156	-0	234	234	-0
All	2031	4310	4303	-7	80	80	-0	160	160	-0	240	240	-0
All	2032	4203	4193	-9	82	82	-0	164	164	-0	247	246	-1
All	2033	4105	4093	-12	84	84	-0	167	166	-0	251	250	-1
All	2034	4017	4003	-14	84	84	-0	170	169	-1	254	253	-1
All	2035	3939	3923	-16	85	85	-0	171	170	-1	258	257	-1
All	2036	3871	3853	-18	87	86	-0	173	172	-1	260	259	-1
All	2037	3811	3791	-20	88	87	-0	174	173	-1	262	260	-1
All	2038	3713	3692	-21	86	86	-0	174	173	-1	260	258	-1
All	2039	3629	3607	-22	86	86	-1	172	171	-1	259	258	-2

All	2040	3545	3523	-22	86	85	-1	171	170	-1	257	255	-2
All	2041	3461	3438	-23	85	84	-1	169	168	-1	254	252	-2
All	2042	3395	3372	-24	83	83	-1	168	167	-1	251	249	-2
All	2043	3336	3312	-24	83	82	-1	166	165	-1	250	248	-2
All	2044	3282	3257	-25	82	82	-1	165	163	-1	247	245	-2
All	2045	3234	3208	-25	82	81	-1	163	161	-1	244	243	-2
All	2046	3186	3160	-26	80	80	-1	161	160	-1	242	240	-2
All	2047	3146	3119	-26	80	79	-1	159	158	-1	240	238	-2
All	2048	3108	3081	-27	79	78	-1	158	156	-1	237	235	-2
All	2049	3072	3045	-27	78	77	-1	156	154	-1	234	232	-2
All	2050	3039	3011	-27	77	76	-1	154	153	-1	231	229	-2
All	2051	3039	3011	-27	76	76	-1	155	153	-1	233	231	-2
All	2052	3039	3011	-27	76	75	-1	155	154	-1	234	232	-2
All	2053	3039	3011	-27	76	75	-1	156	154	-1	236	233	-2
All	2054	3039	3011	-27	75	74	-1	156	154	-1	237	235	-2
All	2055	3039	3011	-27	74	74	-1	156	154	-1	238	235	-2
All	2056	3039	3011	-27	73	73	-1	155	154	-1	238	236	-2
All	2057	3039	3011	-27	72	71	-1	155	154	-1	238	236	-2
All	2058	3039	3011	-27	71	70	-1	154	153	-1	237	235	-2
All	2059	3039	3011	-27	70	69	-1	153	152	-1	237	235	-2
All	2060	3039	3011	-27	68	68	-1	152	151	-1	236	234	-2
All	2061	3039	3011	-27	67	66	-1	151	149	-1	234	232	-2
All	2062	3039	3011	-27	65	65	-1	149	147	-1	232	230	-2
All	2063	3039	3011	-27	64	63	-1	147	145	-1	230	228	-2
All	2064	3039	3011	-27	62	62	-1	145	143	-1	227	225	-2
All	2065	3039	3011	-27	60	60	-1	142	141	-1	224	222	-2
All	2066	3039	3011	-27	59	58	-1	140	138	-1	221	219	-2
All	2067	3039	3011	-27	57	56	-1	137	136	-1	217	215	-2
All	2068	3039	3011	-27	55	54	-0	134	133	-1	213	212	-2
All	2069	3039	3011	-27	53	53	-0	131	130	-1	210	208	-2
All	2070	3039	3011	-27	51	51	-0	129	127	-1	205	203	-2
All	2071	3039	3011	-27	49	49	-0	125	124	-1	201	199	-2
All	2072	3039	3011	-27	48	47	-0	123	121	-1	197	195	-2
All	2073	3039	3011	-27	46	46	-0	119	118	-1	193	191	-2
All	2074	3039	3011	-27	44	44	-0	116	115	-1	188	187	-2
All	2075	3039	3011	-27	42	42	-0	113	112	-1	184	182	-2
All	2076	3039	3011	-27	41	40	-0	110	109	-1	179	177	-2
All	2077	3039	3011	-27	39	39	-0	107	106	-1	174	173	-2
All	2078	3039	3011	-27	37	37	-0	103	103	-1	170	168	-2
All	2079	3039	3011	-27	36	35	-0	100	99	-1	165	164	-1
All	2080	3039	3011	-27	34	34	-0	97	96	-1	160	158	-1
All	2081	3039	3011	-27	33	32	-0	94	93	-1	156	154	-1
All	2082	3039	3011	-27	31	31	-0	91	90	-1	151	150	-1
Car	Total	108942	109868	926	2205	2224	19	4725	4766	40	7247	7310	62

LGV Personal Total	4266	4395	129	86	89	3	186	192	6	286	295	9
LGV Freight Total	31283	32228	945	634	653	19	1366	1408	42	2100	2164	64
OGV1 Total	28917	27999	-918	586	567	-19	1272	1231	-41	1958	1895	-63
OGV2 Total	32849	30504	-2345	664	617	-48	1442	1338	-104	2220	2059	-161
All Total	206257	204993	-1263	4175	4150	-26	8991	8934	-57	13811	13722	-89

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	24	24	0	0	0	0	0	0	1	1	0	
Car	2037	64	65	1	2	2	0	3	3	0	4	4	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	5	5	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	26	26	0	0	0	0	0	0	1	1	0	
All	2024	33	33	0	0	0	1	1	0	1	1	0	
All	2025	45	45	0	0	0	1	1	0	2	2	0	
All	2026	57	57	0	1	1	0	2	2	0	2	2	0
All	2027	67	67	0	1	1	0	2	2	0	3	3	0
All	2028	74	75	0	1	1	0	2	2	0	4	4	0
All	2029	78	79	0	1	1	0	3	3	0	4	4	0
All	2030	79	79	1	1	1	0	3	3	0	4	4	0
All	2031	80	81	1	2	2	0	3	3	0	4	5	0
All	2032	81	81	1	2	2	0	3	3	0	5	5	0
All	2033	80	81	1	2	2	0	3	3	0	5	5	0
All	2034	78	79	1	2	2	0	3	3	0	5	5	0
All	2035	76	77	1	2	2	0	3	3	0	5	5	0
All	2036	73	74	1	2	2	0	3	3	0	5	5	0
All	2037	70	71	1	2	2	0	3	3	0	5	5	0
All	2038	65	66	1	2	2	0	3	3	0	5	5	0
All	2039	61	62	1	2	2	0	3	3	0	4	4	0
All	2040	57	57	1	1	1	0	3	3	0	4	4	0
All	2041	57	58	1	1	1	0	3	3	0	4	4	0
All	2042	57	58	1	1	1	0	3	3	0	4	4	0
All	2043	57	58	1	1	1	0	3	3	0	4	4	0
All	2044	57	57	1	1	2	0	3	3	0	4	4	0
All	2045	56	57	1	1	1	0	3	3	0	4	4	0
All	2046	55	56	1	1	1	0	3	3	0	4	4	0
All	2047	54	55	1	1	1	0	3	3	0	4	4	0

All	2048	53	54	1	1	1	0	3	3	0	4	4	0
All	2049	52	52	1	1	1	0	3	3	0	4	4	0
All	2050	50	51	1	1	1	0	3	3	0	4	4	0
All	2051	50	51	1	1	1	0	3	3	0	4	4	0
All	2052	50	51	1	1	1	0	3	3	0	4	4	0
All	2053	50	51	1	1	1	0	3	3	0	4	4	0
All	2054	50	51	1	1	1	0	3	3	0	4	4	0
All	2055	50	51	1	1	1	0	3	3	0	4	4	0
All	2056	50	51	1	1	1	0	3	3	0	4	4	0
All	2057	50	51	1	1	1	0	3	3	0	4	4	0
All	2058	50	51	1	1	1	0	3	3	0	4	4	0
All	2059	50	51	1	1	1	0	3	3	0	4	4	0
All	2060	50	51	1	1	1	0	3	3	0	4	4	0
All	2061	50	51	1	1	1	0	2	3	0	4	4	0
All	2062	50	51	1	1	1	0	2	2	0	4	4	0
All	2063	50	51	1	1	1	0	2	2	0	4	4	0
All	2064	50	51	1	1	1	0	2	2	0	4	4	0
All	2065	50	51	1	1	1	0	2	2	0	4	4	0
All	2066	50	51	1	1	1	0	2	2	0	4	4	0
All	2067	50	51	1	1	1	0	2	2	0	4	4	0
All	2068	50	51	1	1	1	0	2	2	0	4	4	0
All	2069	50	51	1	1	1	0	2	2	0	3	4	0
All	2070	50	51	1	1	1	0	2	2	0	3	3	0
All	2071	50	51	1	1	1	0	2	2	0	3	3	0
All	2072	50	51	1	1	1	0	2	2	0	3	3	0
All	2073	50	51	1	1	1	0	2	2	0	3	3	0
All	2074	50	51	1	1	1	0	2	2	0	3	3	0
All	2075	50	51	1	1	1	0	2	2	0	3	3	0
All	2076	50	51	1	1	1	0	2	2	0	3	3	0
All	2077	50	51	1	1	1	0	2	2	0	3	3	0
All	2078	50	51	1	1	1	0	2	2	0	3	3	0
All	2079	50	51	1	1	1	0	2	2	0	3	3	0
All	2080	50	51	1	1	1	0	2	2	0	3	3	0
All	2081	50	51	1	1	1	0	2	2	0	3	3	0
All	2082	50	51	1	1	1	0	2	2	0	2	3	0
Car	Total	3032	3068	35	62	63	1	129	131	2	199	201	2
LGV Personal	Total	36	36	0	1	1	0	2	2	0	2	2	0
LGV Freight	Total	261	264	3	5	6	0	11	12	0	18	18	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	3329	3368	39	68	69	1	142	144	2	219	222	3

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Emissions (tonnes)                      cost (E000s, low)                      cost (E000s, central)                      cost (E000s, high)

Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	776	797	21	16	16	0	31	32	1	47	48	1
AM peak	2037	759	618	-141	17	14	-3	35	28	-6	52	42	-10
PM peak	2023	793	784	-9	16	16	-0	32	32	-0	48	48	-1
PM peak	2037	595	595	0	14	14	0	27	27	0	41	41	0
Inter-peak	2023	2916	2916	0	58	58	0	118	118	0	177	177	0
Inter-peak	2037	2185	2254	68	50	52	2	100	103	3	150	155	5
Off-peak	2023	421	421	0	8	8	0	17	17	0	25	25	0
Off-peak	2037	272	325	53	6	7	1	12	15	2	19	22	4
AM peak	Total	39807	33237	-6570	807	673	-134	1742	1449	-294	2678	2225	-453
PM peak	Total	31617	31554	-63	640	639	-1	1376	1374	-2	2113	2109	-4
Inter-peak	Total	119577	122539	2963	2420	2480	61	5210	5342	132	8003	8206	203
Off-peak	Total	15256	17663	2407	308	358	49	663	770	107	1017	1183	165

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	12	12	0	0	0	0	1	1	0	1	1	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	13	13	0	0	0	0	1	1	0	1	1	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	39	39	0	1	1	0	2	2	0	3	3	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	5	6	1	0	0	0	0	0	0	0	0	0
AM peak	Total	570	570	0	12	12	0	24	24	0	38	38	0
PM peak	Total	639	639	0	13	13	0	27	27	0	42	42	0
Inter-peak	Total	1886	1887	1	39	39	0	81	81	0	124	124	0
Off-peak	Total	233	272	39	5	6	1	10	12	2	15	18	3

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Road	2023	471	0	-4	17	0	2
Road	2024	540	0	-1	20	0	2
Road	2025	606	0	1	22	0	1

Road	2026	669	0	3	24	0	1
Road	2027	729	0	5	26	0	1
Road	2028	787	0	7	28	0	0
Road	2029	842	0	8	29	0	-0
Road	2030	894	0	10	31	0	-1
Road	2031	943	0	11	32	0	-1
Road	2032	991	0	12	33	0	-1
Road	2033	1035	0	13	34	0	-1
Road	2034	1078	0	13	35	0	-2
Road	2035	1117	0	14	36	0	-2
Road	2036	1157	0	15	37	0	-2
Road	2037	1194	0	15	38	0	-2
Road	2038	1170	0	14	37	0	-2
Road	2039	1147	0	14	35	0	-2
Road	2040	1124	0	13	34	0	-2
Road	2041	1101	0	13	33	0	-2
Road	2042	1079	0	12	32	0	-2
Road	2043	1056	0	12	31	0	-2
Road	2044	1034	0	12	30	0	-2
Road	2045	1012	0	11	29	0	-2
Road	2046	991	0	11	28	0	-2
Road	2047	970	0	11	27	0	-2
Road	2048	949	0	10	26	0	-2
Road	2049	929	0	10	25	0	-2
Road	2050	909	0	10	24	0	-2
Road	2051	894	0	9	23	0	-2
Road	2052	879	0	9	23	0	-2
Road	2053	865	0	9	22	0	-2
Road	2054	851	0	9	21	0	-2
Road	2055	838	0	8	21	0	-2
Road	2056	824	0	8	20	0	-2
Road	2057	811	0	8	20	0	-2
Road	2058	799	0	8	19	0	-2
Road	2059	786	0	8	19	0	-2
Road	2060	774	0	7	18	0	-2
Road	2061	763	0	7	17	0	-2
Road	2062	751	0	7	17	0	-2
Road	2063	740	0	7	16	0	-2
Road	2064	729	0	7	16	0	-2
Road	2065	718	0	6	16	0	-1
Road	2066	708	0	6	15	0	-1
Road	2067	698	0	6	15	0	-1
Road	2068	688	0	6	14	0	-1
Road	2069	678	0	6	14	0	-1



Road	2070	669	0	6	13	0	-1
Road	2071	659	0	6	13	0	-1
Road	2072	649	0	5	13	0	-1
Road	2073	640	0	5	12	0	-1
Road	2074	630	0	5	12	0	-1
Road	2075	621	0	5	12	0	-1
Road	2076	612	0	5	11	0	-1
Road	2077	603	0	5	11	0	-1
Road	2078	595	0	5	11	0	-1
Road	2079	586	0	4	10	0	-1
Road	2080	577	0	4	10	0	-1
Road	2081	569	0	4	10	0	-1
Road	2082	561	0	4	9	0	-1
Road	Total	49287	0	480	1326	0	-81

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Car	2023	350	0	-5	3	0	3
Car	2037	849	0	2	3	0	2
LGV Personal	2023	5	0	-0	0	0	0
LGV Personal	2037	12	0	-0	-0	0	0
LGV Freight	2023	76	0	-3	3	0	2
LGV Freight	2037	204	0	-2	6	0	2
OGV1	2023	22	0	1	4	0	-1
OGV1	2037	73	0	5	12	0	-2
OGV2	2023	18	0	4	7	0	-2
OGV2	2037	56	0	10	17	0	-5
All	2023	471	0	-4	17	0	2
All	2037	1194	0	15	38	0	-2
Car	Total	35147	0	30	130	0	81
LGV Personal	Total	505	0	-11	-7	0	11
LGV Freight	Total	8383	0	-83	197	0	76
OGV1	Total	2965	0	174	404	0	-69
OGV2	Total	2288	0	369	602	0	-179
All	Total	49287	0	480	1326	0	-81

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
All	2023	471	0	-4	17	0	2
All	2037	1194	0	15	38	0	-2

All Total 49287 0 480 1326 0 -81

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Business	2023	138	0	2	17	0	-1
Business	2037	394	0	13	43	0	-5
Commuting	2023	141	0	-2	0	0	1
Commuting	2037	338	0	4	-1	0	-1
Other	2023	191	0	-3	0	0	2
Other	2037	462	0	-2	-3	0	3
Business	Total	16149	0	462	1479	0	-168
Commuting	Total	14001	0	95	-44	0	-28
Other	Total	19137	0	-78	-110	0	115

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
AM peak	2023	232	0	-6	9	0	4
AM peak	2037	943	0	29	31	0	-16
PM peak	2023	175	0	3	5	0	-2
PM peak	2037	-36	0	0	-1	0	0
Inter-peak	2023	62	0	0	3	0	0
Inter-peak	2037	286	0	-14	12	0	8
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	1	0	0	-5	0	6
AM peak	Total	37959	0	887	1069	0	-510
PM peak	Total	-179	0	18	5	0	-10
Inter-peak	Total	11448	0	-425	401	0	249
Off-peak	Total	59	0	0	-149	0	191

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	1	3	0
Car	Business	2037	0	0	-0	3	1	10
Car	Business	Total	0	0	-18	190	63	530
Car	Commuting	2023	0	0	0	2	18	0
Car	Commuting	2037	0	0	-2	6	4	56
Car	Commuting	Total	0	0	-112	318	353	2922
Car	Other	2023	0	0	0	14	44	0
Car	Other	2037	0	0	-6	62	9	120

Car	Other	Total	0	0	-338	3359	808	6321
LGV Personal Business	2023		0	0	0	0	0	0
LGV Personal Business	2037		0	0	0	0	0	0
LGV Personal Business	Total		0	0	0	0	0	0
LGV Personal Commuting	2023		0	0	0	0	0	0
LGV Personal Commuting	2037		0	0	0	0	0	0
LGV Personal Commuting	Total		0	0	0	0	0	0
LGV Personal Other	2023		0	0	0	0	1	0
LGV Personal Other	2037		0	0	-0	1	0	4
LGV Personal Other	Total		0	0	-7	72	23	188
LGV Freight Business	2023		0	0	0	2	7	0
LGV Freight Business	2037		0	0	-1	8	2	22
LGV Freight Business	Total		0	0	-41	431	136	1136
LGV Freight Commuting	2023		0	0	0	0	0	0
LGV Freight Commuting	2037		0	0	0	0	0	0
LGV Freight Commuting	Total		0	0	0	0	0	0
LGV Freight Other	2023		0	0	0	0	0	0
LGV Freight Other	2037		0	0	0	0	0	0
LGV Freight Other	Total		0	0	0	0	0	0
OGV1	Business	2023	0	0	0	1	2	0
OGV1	Business	2037	0	0	-0	3	0	6
OGV1	Business	Total	0	0	-6	161	36	321
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	1	0
OGV2	Business	2037	0	0	-0	2	0	5
OGV2	Business	Total	0	0	-7	114	30	258
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	5	18	0
Car	Business	2037	0	0	-1	15	3	44
Car	Business	Total	0	0	-57	621	250	1700

Car	Commuting	2023	0	0	0	16	125	0
Car	Commuting	2037	0	0	-11	30	22	296
Car	Commuting	Total	0	0	-440	1287	1724	11430
Car	Other	2023	0	0	0	45	142	0
Car	Other	2037	0	0	-16	151	22	293
Car	Other	Total	0	0	-603	6120	1832	11284
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	0	1	4	0
LGV Personal Other		2037	0	0	-0	3	1	9
LGV Personal Other		Total	0	0	-12	130	50	336
LGV Freight Business		2023	0	0	0	16	60	0
LGV Freight Business		2037	0	0	-5	53	11	145
LGV Freight Business		Total	0	0	-204	2165	834	5587
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	0	6	16	0
OGV1 Business		2037	0	0	-1	23	4	47
OGV1 Business		Total	0	0	-32	929	246	1823
OGV1 Commuting		2023	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0
OGV1 Commuting		Total	0	0	0	0	0	0
OGV1 Other		2023	0	0	0	0	0	0
OGV1 Other		2037	0	0	0	0	0	0
OGV1 Other		Total	0	0	0	0	0	0
OGV2 Business		2023	0	0	0	5	14	0
OGV2 Business		2037	0	0	-1	16	3	38
OGV2 Business		Total	0	0	-38	657	206	1462
OGV2 Commuting		2023	0	0	0	0	0	0
OGV2 Commuting		2037	0	0	0	0	0	0
OGV2 Commuting		Total	0	0	0	0	0	0
OGV2 Other		2023	0	0	0	0	0	0
OGV2 Other		2037	0	0	0	0	0	0
OGV2 Other		Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	5	20	0
Car	Business	2037	0	0	-2	16	4	51
Car	Business	Total	0	0	-63	665	277	1911
Car	Commuting	2023	0	0	0	16	122	0
Car	Commuting	2037	0	0	-11	28	22	302
Car	Commuting	Total	0	0	-440	1209	1700	11584
Car	Other	2023	0	0	0	45	139	0
Car	Other	2037	0	0	-16	139	22	300
Car	Other	Total	0	0	-603	5763	1798	11505
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	3	0
LGV Personal	Other	2037	0	0	-0	2	1	9
LGV Personal	Other	Total	0	0	-12	107	46	346
LGV Freight	Business	2023	0	0	0	17	59	0
LGV Freight	Business	2037	0	0	-5	51	11	151
LGV Freight	Business	Total	0	0	-208	2099	824	5783
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	7	20	0
OGV1	Business	2037	0	0	-1	26	4	60
OGV1	Business	Total	0	0	-36	1046	294	2240
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	6	23	0
OGV2	Business	2037	0	0	-1	22	4	59
OGV2	Business	Total	0	0	-48	858	310	2139
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0

OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	4	0	0	0	0	0	0
Car	Business	2037	0	14	0	0	0	0	0	0
Car	Business	Total	0	765	0	0	0	0	0	0
Car	Commuting	2023	0	20	0	0	0	0	0	0
Car	Commuting	2037	0	63	0	0	0	0	0	0
Car	Commuting	Total	0	3481	0	0	0	0	0	0
Car	Other	2023	0	58	0	0	0	0	0	0
Car	Other	2037	0	185	0	0	0	0	0	0
Car	Other	Total	0	10150	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	1	0	0	0	0	0	0
LGV Personal	Other	2037	0	5	0	0	0	0	0	0
LGV Personal	Other	Total	0	276	0	0	0	0	0	0
LGV Freight	Business	2023	0	9	0	0	0	0	0	0
LGV Freight	Business	2037	0	30	0	0	0	0	0	0
LGV Freight	Business	Total	0	1662	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	2	0	0	0	0	0	0
OGV1	Business	2037	0	9	0	0	0	0	0	0
OGV1	Business	Total	0	512	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	2	0	0	0	0	0	0







OGV1	Business	2023	0	27	0	0	0	0	0	0
OGV1	Business	2037	0	90	0	0	0	0	0	0
OGV1	Business	Total	0	3543	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	29	0	0	0	0	0	0
OGV2	Business	2037	0	84	0	0	0	0	0	0
OGV2	Business	Total	0	3260	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	15.84%	42.17%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	14001	14001
Vehicle operating costs	52	52
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>14053</b>	<b>14053</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	19137	19137
Vehicle operating costs	-187	-187
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>18949</b>	<b>18949</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	16149	2514	13636
Vehicle operating costs	1941	277	1664

User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	18090	2791	15300

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-455	-455
NET BUSINESS IMPACT	17635	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	50637
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455
Grant/Subsidy Payments	0	0
NET IMPACT	1336	1336

Central Government Funding: Transport

	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	5734	5734
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	5734	5734

Central Government Funding: Non-Transport

Indirect Tax Revenues	81	81
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TOTALS

Broad Transport Budget	7070	7070
Wider Public Finances	81	81

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	57
Economic Efficiency: Consumer Users (Commuting)	14053
Economic Efficiency: Consumer Users (Other)	18949
Economic Efficiency: Business Users and Providers	17635
Wider Public Finances (Indirect Taxation Revenues)	-81
Present Value of Benefits (PVB)	50613
Broad Transport Budget	7070
Present Value of Costs (PVC)	7070
OVERALL IMPACTS	
Net Present Value (NPV)	43543
Benefit to Cost Ratio (BCR)	7.159

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_HighV4.1\_15OB

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4.1\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\1-Ollerton\TUBA\_High\_V4.1\_Sens\_15OB\1\_TUBA\_Ollerton\_High\_v4.1\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\1-Ollerton\TUBA\_High\_V4.1\_Sens\_15OB\1\_TUBA\_Ollerton\_High\_v4.1\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 6secs

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-1\_Ollerton\_LowV4\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1058.27	F	119.37	1
P	1	CEN	125.2	F	119.37	1
C	1	CEN	8348.47	F	119.37	1
L	1	CEN	280.29	F	119.37	1

S	1	CEN	185.41	F	119.37	1
P	1	LOC	100.545	F	119.37	1
C	1	LOC	2021.517	F	119.37	1
L	1	LOC	68.1715	F	119.37	1
S	1	LOC	185.6835	F	119.37	1
D	1	LOC	690	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2021	1	0.00	86.96	74.79	0.00	0.00	0.00	0.00	33.34
2022	1	29.22	13.04	25.21	52.87	0.00	0.00	0.00	33.33
2023	1	49.96	0.00	0.00	31.42	0.00	0.00	0.00	33.33
2024	1	20.82	0.00	0.00	15.71	0.315	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.315	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0

2035	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.693	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	4.975	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	4.835	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0



2060	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	26.898	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	3.365	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	7.78	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.315	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	3.376	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.314	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05583	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\1_V_1_Ollerton_L_V4 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30763	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\1_V_1_Ollerton_L_V4 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43971	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\1_V_1_Ollerton_L_V4 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\1_V_1_Ollerton_L_V4 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11258	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\1_V_1_Ollerton_L_V4 AM 2023 DM.txt

6	6	1	V	1	0	2023	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DM.txt
7	7	1	V	1	0	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt

31	3	1	V	1	1	2023	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2023 DS.txt











156	2	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
157	3	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
170	2	1	V	1	0	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
173	5	1	V	1	0	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
175	7	1	V	1	0	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
177	2	2	V	1	0	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
178	3	2	V	1	0	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
180	5	2	V	1	0	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt

181	6	2	V	1	0	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
182	7	2	V	1	0	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05583	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30763	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43971	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.11258	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.03066	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04371	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.27841	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt

206	3	2	V	1	1	2037	0.53249	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
207	4	2	V	1	1	2037	0.01327	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
208	5	2	V	1	1	2037	0.09729	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.01600	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01884	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05528	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08674	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.62682	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03313	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22108	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51462	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01654	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05474	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03858	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\V_1_Ollerton_L_V4 AM 2037 DM.txt









331	2	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\1-Ollerton\Outputs_Low_V4\D_1_Ollerton_L_V4 AM 2023 DM.txt

SECTORS

\*mode Sector\_file\_name



Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:12:55

ERRORS AND WARNINGS

3145 Warnings found in total (including any above)

Warning (322 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	1	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	4.467	4.467
3	2	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	0.814	0.814
3	4	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	0.107	0.107
3	5	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	1.566	1.566
3	1	1	Car	Business	All	2023	0.026	0.001	17.778	16.247	16.247
3	2	1	Car	Business	All	2023	0.026	0.001	17.778	2.959	2.959
3	4	1	Car	Business	All	2023	0.026	0.001	17.778	0.391	0.391
3	5	1	Car	Business	All	2023	0.026	0.001	17.778	5.695	5.695
3	1	1	Car	Commuting	All	2023	0.026	0.001	17.778	89.520	89.520
3	2	1	Car	Commuting	All	2023	0.026	0.001	17.778	16.304	16.304
3	4	1	Car	Commuting	All	2023	0.026	0.001	17.778	2.153	2.153
3	5	1	Car	Commuting	All	2023	0.026	0.001	17.778	31.378	31.378
3	1	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	32.761	32.761
3	2	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	5.967	5.967
3	4	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	0.788	0.788

3	5	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	11.483	11.483
3	1	1	Car	Other	All	2023	0.026	0.001	17.778	127.956	127.956
3	2	1	Car	Other	All	2023	0.026	0.001	17.778	23.305	23.305
3	4	1	Car	Other	All	2023	0.026	0.001	17.778	3.078	3.078
3	5	1	Car	Other	All	2023	0.026	0.001	17.778	44.850	44.850

Displayed 20 warnings of a total of 644 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	1	4	Car	Business	All	2023	2.000	0.000	4166.667	0.762	130.000
2	2	4	Car	Business	All	2023	2.000	0.000	4166.667	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4166.667	0.133	130.000
2	4	4	Car	Business	All	2023	2.000	0.000	4166.667	0.331	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4166.667	0.861	130.000
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	1.213	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.259	85.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	3.154	110.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.547	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.423	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.887	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.000	85.000

2	3	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.154	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.386	85.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4166.667	1.003	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	2.790	110.000

Displayed 20 warnings of a total of 1213 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.213	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.133	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.154	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.259	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.547	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.423	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.887	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.154	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.331	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.861	130.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.386	85.000

2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	2.790	110.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.003	85.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.762	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-1\_Ollerton\_LowV4\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_Low\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997



Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0

Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0
Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0
Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0



Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0
Road	2054	0	0	0	0	3	0	0	0
Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0
Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0

Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0
Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377
Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2

Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1

Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1
Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1
Road	2066	0	1	1
Road	2067	0	1	1
Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0

Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1550	1550
Car	2023	PM peak	1728	1728
Car	2023	Inter-peak	5180	5180
Car	2023	Off-peak	747	747
Car	2023	All	9206	9206
Car	2037	AM peak	1515	1515
Car	2037	PM peak	1672	1672
Car	2037	Inter-peak	5019	5019
Car	2037	Off-peak	730	730
Car	2037	All	8936	8936
LGV Personal	2023	AM peak	30	30
LGV Personal	2023	PM peak	27	27
LGV Personal	2023	Inter-peak	111	111
LGV Personal	2023	Off-peak	16	16

LGV Personal	2023 All	184	184
LGV Personal	2037 AM peak	29	29
LGV Personal	2037 PM peak	26	26
LGV Personal	2037 Inter-peak	108	108
LGV Personal	2037 Off-peak	16	16
LGV Personal	2037 All	179	179
LGV Freight	2023 AM peak	217	217
LGV Freight	2023 PM peak	197	197
LGV Freight	2023 Inter-peak	817	817
LGV Freight	2023 Off-peak	118	118
LGV Freight	2023 All	1349	1349
LGV Freight	2037 AM peak	212	212
LGV Freight	2037 PM peak	190	190
LGV Freight	2037 Inter-peak	792	792
LGV Freight	2037 Off-peak	115	115
LGV Freight	2037 All	1310	1310
OGV1	2023 AM peak	74	74
OGV1	2023 PM peak	32	32
OGV1	2023 Inter-peak	369	369
OGV1	2023 Off-peak	53	53
OGV1	2023 All	528	528
OGV1	2037 AM peak	72	72
OGV1	2037 PM peak	31	31
OGV1	2037 Inter-peak	357	357
OGV1	2037 Off-peak	52	52

OGV1	2037 All	513	513
OGV2	2023 AM peak	59	59
OGV2	2023 PM peak	38	38
OGV2	2023 Inter-peak	260	260
OGV2	2023 Off-peak	37	37
OGV2	2023 All	395	395
OGV2	2037 AM peak	58	58
OGV2	2037 PM peak	37	37
OGV2	2037 Inter-peak	252	252
OGV2	2037 Off-peak	37	37
OGV2	2037 All	383	383
All	2023 AM peak	1930	1930
All	2023 PM peak	2022	2022
All	2023 Inter-peak	6737	6737
All	2023 Off-peak	972	972
All	2023 All	11662	11662
All	2037 AM peak	1886	1886
All	2037 PM peak	1957	1957
All	2037 Inter-peak	6527	6527
All	2037 Off-peak	950	950
All	2037 All	11320	11320

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	274	0	1334	865	80	0	1348	857
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Road	2037	164	0	724	517	60	0	725	514
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FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	595	564	84	603	572	84
Car	2037	441	312	632	442	313	632
LGV Personal	2023	0	35	1	0	35	1
LGV Personal	2037	0	28	13	0	28	13
LGV Freight	2023	3	255	5	3	257	5
LGV Freight	2037	1	205	98	1	205	98
OGV1	2023	0	178	0	0	178	0
OGV1	2037	0	173	0	0	173	0
OGV2	2023	0	220	0	0	220	0
OGV2	2037	0	214	0	0	214	0
All	2023	598	1252	90	607	1263	90
All	2037	443	932	743	443	932	743
Car	Total	23393	17043	48689	23474	17111	48689
LGV Personal	Total	12	1568	1187	12	1571	1187
LGV Freight	Total	86	11498	8707	86	11518	8707
OGV1	Total	0	10405	0	0	10405	0
OGV2	Total	0	12884	0	0	12883	0
All	Total	23491	53398	58584	23572	53488	58584



## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2597	2634	37	52	53	1	105	107	1	157	160	2
Car	2037	1670	1672	2	38	38	0	76	76	0	115	115	0
LGV Personal	2023	85	86	1	2	2	0	3	3	0	5	5	0
LGV Personal	2037	68	68	0	2	2	0	3	3	0	5	5	0
LGV Freight	2023	623	630	7	12	13	0	25	26	0	38	38	0
LGV Freight	2037	498	498	0	11	11	0	23	23	0	34	34	0
OGV1	2023	431	431	0	9	9	0	17	17	0	26	26	0
OGV1	2037	418	418	0	10	10	0	19	19	0	29	29	0
OGV2	2023	534	533	-0	11	11	-0	22	22	-0	32	32	-0
OGV2	2037	518	518	0	12	12	0	24	24	0	36	36	0
All	2023	4269	4313	44	85	86	1	173	175	2	259	261	3
All	2024	4181	4221	40	83	84	1	166	168	2	249	252	2
All	2025	4081	4118	36	80	81	1	159	160	1	239	241	2
All	2026	3992	4025	33	76	77	1	152	153	1	228	230	2
All	2027	3902	3932	29	74	74	1	145	147	1	219	221	2
All	2028	3808	3834	26	69	70	0	141	142	1	210	212	1
All	2029	3725	3748	22	67	68	0	135	136	1	202	203	1
All	2030	3642	3661	19	64	64	0	129	130	1	192	193	1
All	2031	3557	3573	16	66	66	0	132	133	1	198	199	1
All	2032	3485	3499	14	68	68	0	136	137	1	205	205	1
All	2033	3418	3429	11	70	70	0	139	139	0	209	209	1

All	2034	3347	3356	9	70	70	0	141	142	0	211	212	1
All	2035	3288	3294	6	71	71	0	143	143	0	215	216	0
All	2036	3232	3236	4	72	72	0	145	145	0	217	217	0
All	2037	3172	3174	2	73	73	0	145	145	0	218	218	0
All	2038	3126	3128	2	73	73	0	146	146	0	219	219	0
All	2039	3083	3085	2	73	73	0	146	146	0	220	220	0
All	2040	3036	3038	2	73	73	0	147	147	0	220	220	0
All	2041	2994	2996	2	73	73	0	146	146	0	219	220	0
All	2042	2954	2955	2	73	73	0	146	146	0	219	219	0
All	2043	2909	2911	2	72	72	0	145	145	0	218	218	0
All	2044	2872	2874	2	72	72	0	144	144	0	216	216	0
All	2045	2838	2840	2	72	72	0	143	143	0	215	215	0
All	2046	2799	2800	2	70	71	0	142	142	0	212	212	0
All	2047	2766	2768	2	70	70	0	140	140	0	211	211	0
All	2048	2734	2736	2	69	69	0	139	139	0	208	208	0
All	2049	2698	2700	2	69	69	0	137	137	0	205	205	0
All	2050	2666	2667	2	67	67	0	135	135	0	202	203	0
All	2051	2666	2667	2	67	67	0	136	136	0	205	205	0
All	2052	2666	2667	2	67	67	0	136	136	0	206	206	0
All	2053	2666	2667	2	66	66	0	137	137	0	207	207	0
All	2054	2666	2667	2	66	66	0	137	137	0	208	208	0
All	2055	2666	2667	2	65	65	0	137	137	0	208	209	0
All	2056	2666	2667	2	64	64	0	136	136	0	209	209	0
All	2057	2666	2667	2	63	63	0	136	136	0	209	209	0
All	2058	2666	2667	2	62	62	0	135	135	0	208	208	0

All	2059	2666	2667	2	61	61	0	135	135	0	208	208	0
All	2060	2666	2667	2	60	60	0	134	134	0	207	207	0
All	2061	2666	2667	2	59	59	0	132	132	0	205	206	0
All	2062	2666	2667	2	57	57	0	131	131	0	204	204	0
All	2063	2666	2667	2	56	56	0	129	129	0	202	202	0
All	2064	2666	2667	2	55	55	0	127	127	0	199	199	0
All	2065	2666	2667	2	53	53	0	125	125	0	196	197	0
All	2066	2666	2667	2	51	51	0	123	123	0	194	194	0
All	2067	2666	2667	2	50	50	0	120	120	0	190	191	0
All	2068	2666	2667	2	48	48	0	118	118	0	187	187	0
All	2069	2666	2667	2	47	47	0	115	115	0	184	184	0
All	2070	2666	2667	2	45	45	0	113	113	0	180	180	0
All	2071	2666	2667	2	43	43	0	110	110	0	176	177	0
All	2072	2666	2667	2	42	42	0	107	108	0	173	173	0
All	2073	2666	2667	2	40	40	0	105	105	0	169	169	0
All	2074	2666	2667	2	39	39	0	102	102	0	165	165	0
All	2075	2666	2667	2	37	37	0	99	99	0	161	161	0
All	2076	2666	2667	2	36	36	0	96	96	0	157	157	0
All	2077	2666	2667	2	34	34	0	94	94	0	153	153	0
All	2078	2666	2667	2	33	33	0	91	91	0	149	149	0
All	2079	2666	2667	2	31	31	0	88	88	0	145	145	0
All	2080	2666	2667	2	30	30	0	85	85	0	140	140	0
All	2081	2666	2667	2	29	29	0	83	83	0	137	137	0
All	2082	2666	2667	2	27	27	0	80	80	0	133	133	0
Car	Total	89691	90022	330	1816	1823	6	3895	3908	13	5975	5995	20

LGV Personal	Total	3819	3826	7	77	77	0	167	167	0	257	257	0
LGV Freight	Total	28008	28056	49	567	568	1	1225	1227	2	1883	1886	3
OGV1	Total	25182	25183	1	510	510	0	1107	1107	0	1705	1705	0
OGV2	Total	31182	31180	-2	631	631	-0	1371	1371	-0	2111	2111	-0
All	Total	177882	178267	385	3601	3609	8	7765	7780	15	11931	11954	23

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	22	22	0	0	0	0	0	0	1	1	0	
Car	2037	36	36	0	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	6	6	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	23	23	0	0	0	0	0	0	1	1	0	
All	2024	28	28	0	0	0	1	1	0	1	1	0	
All	2025	35	35	0	0	0	1	1	0	1	1	0	
All	2026	41	41	0	1	1	0	1	1	0	2	2	0
All	2027	46	46	0	1	1	0	1	1	0	2	2	0
All	2028	50	50	0	1	1	0	2	2	0	2	2	0

All	2029	52	52	0	1	1	0	2	2	0	3	3	0
All	2030	52	52	0	1	1	0	2	2	0	3	3	0
All	2031	53	53	0	1	1	0	2	2	0	3	3	0
All	2032	52	52	0	1	1	0	2	2	0	3	3	0
All	2033	51	51	0	1	1	0	2	2	0	3	3	0
All	2034	50	50	0	1	1	0	2	2	0	3	3	0
All	2035	48	48	0	1	1	0	2	2	0	3	3	0
All	2036	45	45	0	1	1	0	2	2	0	3	3	0
All	2037	43	43	0	1	1	0	2	2	0	3	3	0
All	2038	40	40	0	1	1	0	2	2	0	3	3	0
All	2039	38	38	0	1	1	0	2	2	0	3	3	0
All	2040	35	35	0	1	1	0	2	2	0	3	3	0
All	2041	36	36	0	1	1	0	2	2	0	3	3	0
All	2042	36	36	0	1	1	0	2	2	0	3	3	0
All	2043	36	36	0	1	1	0	2	2	0	3	3	0
All	2044	36	36	0	1	1	0	2	2	0	3	3	0
All	2045	36	36	0	1	1	0	2	2	0	3	3	0
All	2046	36	36	0	1	1	0	2	2	0	3	3	0
All	2047	36	36	0	1	1	0	2	2	0	3	3	0
All	2048	35	35	0	1	1	0	2	2	0	3	3	0
All	2049	35	35	0	1	1	0	2	2	0	3	3	0
All	2050	34	34	0	1	1	0	2	2	0	3	3	0
All	2051	34	34	0	1	1	0	2	2	0	3	3	0
All	2052	34	34	0	1	1	0	2	2	0	3	3	0
All	2053	34	34	0	1	1	0	2	2	0	3	3	0

All	2054	34	34	0	1	1	0	2	2	0	3	3	0
All	2055	34	34	0	1	1	0	2	2	0	3	3	0
All	2056	34	34	0	1	1	0	2	2	0	3	3	0
All	2057	34	34	0	1	1	0	2	2	0	3	3	0
All	2058	34	34	0	1	1	0	2	2	0	3	3	0
All	2059	34	34	0	1	1	0	2	2	0	3	3	0
All	2060	34	34	0	1	1	0	2	2	0	3	3	0
All	2061	34	34	0	1	1	0	2	2	0	3	3	0
All	2062	34	34	0	1	1	0	2	2	0	3	3	0
All	2063	34	34	0	1	1	0	2	2	0	3	3	0
All	2064	34	34	0	1	1	0	2	2	0	3	3	0
All	2065	34	34	0	1	1	0	2	2	0	2	2	0
All	2066	34	34	0	1	1	0	2	2	0	2	2	0
All	2067	34	34	0	1	1	0	2	2	0	2	2	0
All	2068	34	34	0	1	1	0	1	1	0	2	2	0
All	2069	34	34	0	1	1	0	1	1	0	2	2	0
All	2070	34	34	0	1	1	0	1	1	0	2	2	0
All	2071	34	34	0	1	1	0	1	1	0	2	2	0
All	2072	34	34	0	1	1	0	1	1	0	2	2	0
All	2073	34	34	0	1	1	0	1	1	0	2	2	0
All	2074	34	34	0	1	1	0	1	1	0	2	2	0
All	2075	34	34	0	0	0	0	1	1	0	2	2	0
All	2076	34	34	0	0	0	0	1	1	0	2	2	0
All	2077	34	34	0	0	0	0	1	1	0	2	2	0
All	2078	34	34	0	0	0	0	1	1	0	2	2	0

All	2079	34	34	0	0	0	0	1	1	0	2	2	0
All	2080	34	34	0	0	0	0	1	1	0	2	2	0
All	2081	34	34	0	0	0	0	1	1	0	2	2	0
All	2082	34	34	0	0	0	0	1	1	0	2	2	0
Car	Total	1871	1871	-0	38	38	0	79	79	0	122	122	0
LGV Personal	Total	42	42	0	1	1	0	2	2	0	3	3	0
LGV Freight	Total	309	309	0	6	6	0	13	13	0	21	21	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2222	2222	-0	45	45	0	94	94	0	146	146	0

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	673	699	26	13	14	1	27	28	1	41	42	2
AM peak	2037	510	512	2	12	12	0	23	23	0	35	35	0
PM peak	2023	658	677	19	13	14	0	27	27	1	40	41	1
PM peak	2037	471	471	0	11	11	0	21	21	0	32	32	0
Inter-peak	2023	2567	2567	0	51	51	0	104	104	0	155	155	0
Inter-peak	2037	1913	1913	0	44	44	0	87	87	0	131	131	0
Off-peak	2023	370	370	0	7	7	0	15	15	0	22	22	0
Off-peak	2037	278	278	0	6	6	0	13	13	0	19	19	0
AM peak	Total	28387	28648	261	575	580	5	1239	1250	11	1904	1920	16
PM peak	Total	25911	26035	124	525	527	2	1129	1134	5	1734	1742	7
Inter-peak	Total	107906	107906	0	2184	2184	0	4711	4711	0	7240	7240	0

Off-peak	Total	15678	15678	0	317	317	0	685	685	0	1052	1052	0
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NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	7	7	0	0	0	0	0	0	0	0	0	0
PM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
PM peak	2037	8	8	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	13	13	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	24	24	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	Total	374	374	0	8	8	0	16	16	0	24	24	0
PM peak	Total	401	401	0	8	8	0	17	17	0	26	26	0
Inter-peak	Total	1264	1264	0	26	26	0	54	54	0	83	83	0
Off-peak	Total	184	184	0	4	4	0	8	8	0	12	12	0



MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	194	0	-14	7	0	8
Road	2024	185	0	-12	7	0	7
Road	2025	177	0	-11	6	0	6
Road	2026	170	0	-10	6	0	5
Road	2027	163	0	-8	6	0	5
Road	2028	156	0	-7	5	0	4
Road	2029	149	0	-6	5	0	3
Road	2030	143	0	-5	5	0	3
Road	2031	137	0	-4	5	0	2
Road	2032	131	0	-3	4	0	2
Road	2033	125	0	-3	4	0	2
Road	2034	120	0	-2	4	0	1
Road	2035	114	0	-1	4	0	1
Road	2036	109	0	-1	3	0	1
Road	2037	104	0	-0	3	0	0
Road	2038	102	0	-0	3	0	0
Road	2039	101	0	-0	3	0	0
Road	2040	99	0	-0	3	0	0
Road	2041	98	0	-0	3	0	0
Road	2042	97	0	-0	3	0	0
Road	2043	95	0	-0	3	0	0

Road	2044	94	0	-0	2	0	0
Road	2045	92	0	-0	2	0	0
Road	2046	91	0	-0	2	0	0
Road	2047	89	0	-0	2	0	0
Road	2048	88	0	-0	2	0	0
Road	2049	87	0	-0	2	0	0
Road	2050	85	0	-0	2	0	0
Road	2051	84	0	-0	2	0	0
Road	2052	84	0	-0	2	0	0
Road	2053	83	0	-0	2	0	0
Road	2054	82	0	-0	2	0	0
Road	2055	81	0	-0	2	0	0
Road	2056	80	0	-0	2	0	0
Road	2057	79	0	-0	2	0	0
Road	2058	79	0	-0	2	0	0
Road	2059	78	0	-0	2	0	0
Road	2060	77	0	-0	1	0	0
Road	2061	76	0	-0	1	0	0
Road	2062	76	0	-0	1	0	0
Road	2063	75	0	-0	1	0	0
Road	2064	74	0	-0	1	0	0
Road	2065	74	0	-0	1	0	0
Road	2066	73	0	-0	1	0	0
Road	2067	72	0	-0	1	0	0
Road	2068	72	0	-0	1	0	0

Road	2069	71	0	-0	1	0	0
Road	2070	71	0	-0	1	0	0
Road	2071	70	0	-0	1	0	0
Road	2072	69	0	-0	1	0	0
Road	2073	69	0	-0	1	0	0
Road	2074	68	0	-0	1	0	0
Road	2075	68	0	-0	1	0	0
Road	2076	67	0	-0	1	0	0
Road	2077	66	0	-0	1	0	0
Road	2078	66	0	-0	1	0	0
Road	2079	65	0	-0	1	0	0
Road	2080	65	0	-0	1	0	0
Road	2081	64	0	-0	1	0	0
Road	2082	64	0	-0	1	0	0
Road	Total	5736	0	-98	146	0	56

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri	Non_fuel	PT_fares_(pri	Taxes	
Car	2023	142	0	-12	1	0	7
Car	2037	76	0	-0	1	0	0
LGV Personal	2023	2	0	-0	0	0	0
LGV Personal	2037	1	0	0	0	0	0
LGV Freight	2023	32	0	-2	1	0	1

LGV Freight	2037	17	0	0	0	0	0
OGV1	2023	10	0	-0	2	0	0
OGV1	2037	5	0	0	1	0	0
OGV2	2023	8	0	0	3	0	-0
OGV2	2037	4	0	0	1	0	0
All	2023	194	0	-14	7	0	8
All	2037	104	0	-0	3	0	0
Car	Total	4193	0	-83	28	0	48
LGV Personal	Total	57	0	-2	0	0	1
LGV Freight	Total	946	0	-13	21	0	7
OGV1	Total	298	0	-0	38	0	0
OGV2	Total	242	0	1	59	0	-0
All	Total	5736	0	-98	146	0	56

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	194	0	-14	7	0	8
All	2037	104	0	-0	3	0	0
All	Total	5736	0	-98	146	0	56

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	59	0	-3	7	0	2
Business	2037	32	0	-0	3	0	0
Commuting	2023	55	0	-4	0	0	2
Commuting	2037	28	0	-0	0	0	0
Other	2023	80	0	-7	0	0	4
Other	2037	44	0	-0	0	0	0
Business	Total	1763	0	-18	146	0	10
Commuting	Total	1558	0	-30	0	0	17
Other	Total	2416	0	-50	0	0	28

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	97	0	-8	4	0	5
AM peak	2037	46	0	-0	1	0	0
PM peak	2023	55	0	-6	1	0	3
PM peak	2037	29	0	0	1	0	0
Inter-peak	2023	40	0	0	2	0	0
Inter-peak	2037	28	0	0	1	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	1	0	0	0	0	0
AM peak	Total	2599	0	-63	69	0	36
PM peak	Total	1627	0	-35	28	0	20

Inter-peak	Total	1458	0	0	47	0	0
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Off-peak	Total	53	0	0	2	0	0
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NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	2	0	0
Car	Business	2037	0	0	0	1	0	0
Car	Business	Total	0	0	0	67	0	0
Car	Commuting	2023	0	0	0	7	0	0
Car	Commuting	2037	0	0	0	5	0	0
Car	Commuting	Total	0	0	0	308	0	0
Car	Other	2023	0	0	0	23	0	0
Car	Other	2037	0	0	0	16	0	0
Car	Other	Total	0	0	0	1029	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	0	0
LGV Personal	Other	2037	0	0	0	0	0	0
LGV Personal	Other	Total	0	0	0	25	0	0
LGV Freight	Business	2023	0	0	0	3	0	0

LGV Freight	Business	2037	0	0	0	2	0	0
LGV Freight	Business	Total	0	0	0	150	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	1	0	0
OGV1	Business	2037	0	0	0	1	0	0
OGV1	Business	Total	0	0	0	41	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	1	0	0
OGV2	Business	2037	0	0	0	1	0	0
OGV2	Business	Total	0	0	0	33	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0

OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	9	0	0
Car	Business	2037	0	0	0	5	0	0
Car	Business	Total	0	0	0	276	0	0
Car	Commuting	2023	0	0	0	55	0	0
Car	Commuting	2037	0	0	0	28	0	0
Car	Commuting	Total	0	0	0	1558	0	0
Car	Other	2023	0	0	0	78	0	0
Car	Other	2037	0	0	0	43	0	0
Car	Other	Total	0	0	0	2359	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	2	0	0
LGV Personal	Other	2037	0	0	0	1	0	0
LGV Personal	Other	Total	0	0	0	57	0	0
LGV Freight	Business	2023	0	0	0	32	0	0
LGV Freight	Business	2037	0	0	0	17	0	0



LGV Freight	Business	Total	0	0	0	946	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	10	0	0
OGV1	Business	2037	0	0	0	5	0	0
OGV1	Business	Total	0	0	0	298	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	8	0	0
OGV2	Business	2037	0	0	0	4	0	0
OGV2	Business	Total	0	0	0	242	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	10	0	0
Car	Business	2037	0	0	0	6	0	0
Car	Business	Total	0	0	0	299	0	0
Car	Commuting	2023	0	0	0	51	0	0
Car	Commuting	2037	0	0	0	28	0	0
Car	Commuting	Total	0	0	0	1528	0	0
Car	Other	2023	0	0	0	71	0	0
Car	Other	2037	0	0	0	43	0	0
Car	Other	Total	0	0	0	2311	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	2	0	0
LGV Personal	Other	2037	0	0	0	1	0	0
LGV Personal	Other	Total	0	0	0	55	0	0
LGV Freight	Business	2023	0	0	0	31	0	0
LGV Freight	Business	2037	0	0	0	18	0	0
LGV Freight	Business	Total	0	0	0	954	0	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	12	0	0
OGV1	Business	2037	0	0	0	6	0	0
OGV1	Business	Total	0	0	0	336	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	11	0	0
OGV2	Business	2037	0	0	0	6	0	0
OGV2	Business	Total	0	0	0	301	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0



LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	1	0	0	0	0	0	0
OGV1	Business	2037	0	1	0	0	0	0	0	0
OGV1	Business	Total	0	41	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	33	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	10	0	0	0	0	0	0
OGV1	Business	2037	0	5	0	0	0	0	0	0
OGV1	Business	Total	0	298	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	8	0	0	0	0	0	0
OGV2	Business	2037	0	4	0	0	0	0	0	0
OGV2	Business	Total	0	242	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance





LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	12	0	0	0	0	0	0
OGV1	Business	2037	0	6	0	0	0	0	0	0
OGV1	Business	Total	0	336	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	11	0	0	0	0	0	0
OGV2	Business	2037	0	6	0	0	0	0	0	0
OGV2	Business	Total	0	301	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 7.56% 7.59%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	1558	1558
Vehicle operating costs	-30	-30
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	1528	1528

Consumer - Other user benefits	All Modes	Road
Travel Time	2416	2416
Vehicle operating costs	-50	-50
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	2366	2366

Business	All Modes	Road Personal	Road Freight
Travel Time	1763	276	1486
Vehicle operating costs	128	23	105
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	1890	299	1591

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-455	-455
NET BUSINESS IMPACT	1435	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	5329
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455

Grant/Subsidy Payments	0	0
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NET IMPACT	1336	1336
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Central Government Funding: Transport ALL MODES Road

Revenue	0	0
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Operating costs	0	0
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Investment costs	5734	5734
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Developer Contributions	0	0
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Grant/Subsidy Payments	0	0
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NET IMPACT	5734	5734
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Central Government Funding: Non-Transport

Indirect Tax Revenues	-56	-56
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TOTALS

Broad Transport Budget	7070	7070
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Wider Public Finances	-56	-56
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-15
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Economic Efficiency: Consumer Users (Commuting)	1528
Economic Efficiency: Consumer Users (Other)	2366
Economic Efficiency: Business Users and Providers	1435
Wider Public Finances (Indirect Taxation Revenues)	56
Present Value of Benefits (PVB)	5370
Broad Transport Budget	7070
Present Value of Costs (PVC)	7070
OVERALL IMPACTS	
Net Present Value (NPV)	-1700
Benefit to Cost Ratio (BCR)	0.759

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_LowV4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Low\_V4\_15OB\1\_TUBA\_Ollerton\_Low\_v4\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Low\_V4\_15OB\1\_TUBA\_Ollerton\_Low\_v4\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

ERRORS AND WARNINGS

3145 Warnings found in total (including any above)

Warning (322 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	1	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	4.467	4.467
3	2	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	0.814	0.814
3	4	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	0.107	0.107
3	5	1	LGV Personal	Other	All	2023	0.026	0.001	17.778	1.566	1.566
3	1	1	Car	Business	All	2023	0.026	0.001	17.778	16.247	16.247
3	2	1	Car	Business	All	2023	0.026	0.001	17.778	2.959	2.959
3	4	1	Car	Business	All	2023	0.026	0.001	17.778	0.391	0.391
3	5	1	Car	Business	All	2023	0.026	0.001	17.778	5.695	5.695
3	1	1	Car	Commuting	All	2023	0.026	0.001	17.778	89.520	89.520
3	2	1	Car	Commuting	All	2023	0.026	0.001	17.778	16.304	16.304
3	4	1	Car	Commuting	All	2023	0.026	0.001	17.778	2.153	2.153
3	5	1	Car	Commuting	All	2023	0.026	0.001	17.778	31.378	31.378
3	1	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	32.761	32.761
3	2	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	5.967	5.967
3	4	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	0.788	0.788
3	5	1	LGV Freight	Business	All	2023	0.026	0.001	17.778	11.483	11.483
3	1	1	Car	Other	All	2023	0.026	0.001	17.778	127.956	127.956
3	2	1	Car	Other	All	2023	0.026	0.001	17.778	23.305	23.305
3	4	1	Car	Other	All	2023	0.026	0.001	17.778	3.078	3.078
3	5	1	Car	Other	All	2023	0.026	0.001	17.778	44.850	44.850

Displayed 20 warnings of a total of 644 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	1	4	Car	Business	All	2023	2.000	0.000	4166.667	0.762	130.000
2	2	4	Car	Business	All	2023	2.000	0.000	4166.667	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4166.667	0.133	130.000
2	4	4	Car	Business	All	2023	2.000	0.000	4166.667	0.331	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4166.667	0.861	130.000
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	1.213	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.259	85.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	3.154	110.000

2	2	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4166.667	0.547	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4166.667	1.423	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.887	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.154	85.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4166.667	0.386	85.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4166.667	1.003	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4166.667	2.790	110.000

Displayed 20 warnings of a total of 1213 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
2	2	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.000	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	0.485	110.000
2	4	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	1.213	110.000
2	2	4	Car	Business	All	2023	2.000	0.000	4347.826	0.000	130.000
2	3	4	Car	Business	All	2023	2.000	0.000	4347.826	0.133	130.000
2	5	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	3.154	110.000
2	1	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.259	85.000
2	2	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.219	85.000
2	4	4	OGV1	Business	All	2023	2.000	0.000	4347.826	0.547	85.000
2	5	4	OGV1	Business	All	2023	2.000	0.000	4347.826	1.423	85.000
2	1	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.887	85.000
2	2	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.000	85.000
2	3	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.154	85.000
2	4	4	Car	Business	All	2023	2.000	0.000	4347.826	0.331	130.000
2	5	4	Car	Business	All	2023	2.000	0.000	4347.826	0.861	130.000
2	4	4	OGV2	Business	All	2023	2.000	0.000	4347.826	0.386	85.000
2	1	4	LGV Freight	Business	All	2023	2.000	0.000	4347.826	2.790	110.000
2	5	4	OGV2	Business	All	2023	2.000	0.000	4347.826	1.003	85.000
2	1	4	Car	Business	All	2023	2.000	0.000	4347.826	0.762	130.000

Displayed 20 warnings of a total of 1288 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011 2011 0.697 0.697 0.697

2012 2012 0.810 0.810 0.810

2013 2013 1.501 1.501 1.501



2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385

2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978

2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099

2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000

2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000

2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000

2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000



2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252

2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000

2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000

2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000

2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000

2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000

2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898

2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000



2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000

6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779

2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605

2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

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*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000

2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850

2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702

2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
				max	min	
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10

4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932



2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747

2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341

2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490

2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846

2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294

2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026

2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660

2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404



2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288

2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000

2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261

2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711

2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031

2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750

2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043

2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000



2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013

2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019



Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0

Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	0	0	0	0	0	0	0	0
Road	2021	168	0	0	302	0	0	0	229
Road	2022	57	196	3021	45	0	0	0	229
Road	2023	0	116	5165	0	0	0	0	229
Road	2024	0	58	2152	0	3	0	0	0
Road	2025	0	0	0	0	3	0	0	0
Road	2026	0	0	0	0	3	0	0	0
Road	2027	0	0	0	0	3	0	0	0
Road	2028	0	0	0	0	36	0	0	0
Road	2029	0	0	0	0	3	0	0	0
Road	2030	0	0	0	0	3	0	0	0
Road	2031	0	0	0	0	3	0	0	0
Road	2032	0	0	0	0	3	0	0	0
Road	2033	0	0	0	0	51	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	36	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	197	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0

Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	52	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	51	0	0	0
Road	2054	0	0	0	0	3	0	0	0
Road	2055	0	0	0	0	3	0	0	0
Road	2056	0	0	0	0	3	0	0	0
Road	2057	0	0	0	0	3	0	0	0
Road	2058	0	0	0	0	36	0	0	0
Road	2059	0	0	0	0	3	0	0	0
Road	2060	0	0	0	0	3	0	0	0
Road	2061	0	0	0	0	3	0	0	0
Road	2062	0	0	0	0	3	0	0	0
Road	2063	0	0	0	0	284	0	0	0
Road	2064	0	0	0	0	3	0	0	0
Road	2065	0	0	0	0	3	0	0	0
Road	2066	0	0	0	0	3	0	0	0
Road	2067	0	0	0	0	3	0	0	0
Road	2068	0	0	0	0	36	0	0	0
Road	2069	0	0	0	0	3	0	0	0
Road	2070	0	0	0	0	3	0	0	0
Road	2071	0	0	0	0	3	0	0	0
Road	2072	0	0	0	0	3	0	0	0
Road	2073	0	0	0	0	82	0	0	0
Road	2074	0	0	0	0	3	0	0	0
Road	2075	0	0	0	0	3	0	0	0
Road	2076	0	0	0	0	3	0	0	0
Road	2077	0	0	0	0	3	0	0	0
Road	2078	0	0	0	0	36	0	0	0
Road	2079	0	0	0	0	3	0	0	0
Road	2080	0	0	0	0	3	0	0	0
Road	2081	0	0	0	0	3	0	0	0
Road	2082	0	0	0	0	3	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	0	0
Road	2021	0	322	322
Road	2022	0	2196	2196
Road	2023	0	3377	3377

Road	2024	0	1368	1368
Road	2025	0	2	2
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	19	19
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	23	23
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	14	14
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	63	63
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	14	14
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	1	1
Road	2057	0	1	1
Road	2058	0	7	7
Road	2059	0	1	1
Road	2060	0	1	1
Road	2061	0	1	1
Road	2062	0	1	1
Road	2063	0	49	49
Road	2064	0	1	1
Road	2065	0	1	1
Road	2066	0	1	1
Road	2067	0	1	1

Road	2068	0	5	5
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	11	11
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	4	4
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	7525	7525

#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1550	1550
Car	2023	PM peak	1728	1728
Car	2023	Inter-peak	5180	5180
Car	2023	Off-peak	747	747
Car	2023	All	9206	9206
Car	2037	AM peak	1515	1515
Car	2037	PM peak	1672	1672
Car	2037	Inter-peak	5019	5019
Car	2037	Off-peak	730	730
Car	2037	All	8936	8936
LGV Personal	2023	AM peak	30	30
LGV Personal	2023	PM peak	27	27
LGV Personal	2023	Inter-peak	111	111
LGV Personal	2023	Off-peak	16	16
LGV Personal	2023	All	184	184
LGV Personal	2037	AM peak	29	29
LGV Personal	2037	PM peak	26	26
LGV Personal	2037	Inter-peak	108	108
LGV Personal	2037	Off-peak	16	16
LGV Personal	2037	All	179	179
LGV Freight	2023	AM peak	217	217
LGV Freight	2023	PM peak	197	197
LGV Freight	2023	Inter-peak	817	817
LGV Freight	2023	Off-peak	118	118



LGV Freight	2023	All	1349	1349
LGV Freight	2037	AM peak	212	212
LGV Freight	2037	PM peak	190	190
LGV Freight	2037	Inter-peak	792	792
LGV Freight	2037	Off-peak	115	115
LGV Freight	2037	All	1310	1310
OGV1	2023	AM peak	74	74
OGV1	2023	PM peak	32	32
OGV1	2023	Inter-peak	369	369
OGV1	2023	Off-peak	53	53
OGV1	2023	All	528	528
OGV1	2037	AM peak	72	72
OGV1	2037	PM peak	31	31
OGV1	2037	Inter-peak	357	357
OGV1	2037	Off-peak	52	52
OGV1	2037	All	513	513
OGV2	2023	AM peak	59	59
OGV2	2023	PM peak	38	38
OGV2	2023	Inter-peak	260	260
OGV2	2023	Off-peak	37	37
OGV2	2023	All	395	395
OGV2	2037	AM peak	58	58
OGV2	2037	PM peak	37	37
OGV2	2037	Inter-peak	252	252
OGV2	2037	Off-peak	37	37
OGV2	2037	All	383	383
All	2023	AM peak	1930	1930
All	2023	PM peak	2022	2022
All	2023	Inter-peak	6737	6737
All	2023	Off-peak	972	972
All	2023	All	11662	11662
All	2037	AM peak	1886	1886
All	2037	PM peak	1957	1957
All	2037	Inter-peak	6527	6527
All	2037	Off-peak	950	950
All	2037	All	11320	11320

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	263	0	1359	865	77	0	1373	857
Road	2037	150	0	631	517	55	0	631	514

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	663	564	86	672	572	86
Car	2037	451	243	814	452	244	814
LGV Personal	2023	1	34	0	1	35	0
LGV Personal	2037	1	24	8	1	24	8
LGV Freight	2023	5	253	3	5	255	3
LGV Freight	2037	7	173	61	7	173	61
OGV1	2023	0	174	0	0	174	0
OGV1	2037	0	147	0	0	147	0
OGV2	2023	0	213	0	0	213	0
OGV2	2037	0	155	0	0	155	0
All	2023	669	1238	90	679	1250	90
All	2037	459	741	883	460	741	883
Car	Total	23889	13707	58471	23976	13768	58471
LGV Personal	Total	63	1307	767	63	1310	767
LGV Freight	Total	459	9585	5627	460	9605	5627
OGV1	Total	0	8662	0	0	8663	0
OGV2	Total	0	9445	0	0	9444	0
All	Total	24410	42707	64866	24499	42789	64866

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2738	2777	39	55	56	1	111	113	2	166	168	2
Car	2037	1524	1526	2	35	35	0	70	70	0	105	105	0
LGV Personal	2023	85	86	1	2	2	0	3	3	0	5	5	0
LGV Personal	2037	59	59	0	1	1	0	3	3	0	4	4	0
LGV Freight	2023	623	629	7	12	13	0	25	26	0	38	38	0
LGV Freight	2037	432	432	0	10	10	0	20	20	0	30	30	0
OGV1	2023	422	422	0	8	8	0	17	17	0	26	26	0
OGV1	2037	355	355	0	8	8	0	16	16	0	24	24	0
OGV2	2023	516	515	-0	10	10	-0	21	21	-0	31	31	-0
OGV2	2037	374	374	0	9	9	0	17	17	0	26	26	0
All	2023	4383	4429	46	88	89	1	178	180	2	265	268	3
All	2024	4288	4330	42	85	86	1	170	172	2	256	258	3
All	2025	4163	4201	38	82	83	1	162	163	1	244	246	2
All	2026	4040	4074	34	77	78	1	154	155	1	231	233	2
All	2027	3919	3949	30	74	75	1	146	147	1	220	222	2
All	2028	3803	3829	26	69	70	0	141	142	1	210	211	1
All	2029	3691	3714	23	67	67	0	133	134	1	200	201	1
All	2030	3536	3556	19	62	62	0	125	126	1	187	188	1
All	2031	3391	3407	16	63	63	0	126	127	1	189	190	1

All	2032	3257	3270	13	64	64	0	127	128	1	191	192	1
All	2033	3134	3145	11	64	64	0	127	128	0	191	192	1
All	2034	3022	3030	8	63	63	0	128	128	0	191	191	1
All	2035	2920	2926	6	63	63	0	127	127	0	191	192	0
All	2036	2828	2832	4	63	63	0	127	127	0	190	190	0
All	2037	2744	2746	2	63	63	0	125	125	0	188	189	0
All	2038	2673	2675	2	62	62	0	125	125	0	187	187	0
All	2039	2612	2613	2	62	62	0	124	124	0	187	187	0
All	2040	2550	2552	2	62	62	0	123	123	0	185	185	0
All	2041	2489	2491	2	61	61	0	121	121	0	182	183	0
All	2042	2441	2443	2	60	60	0	121	121	0	181	181	0
All	2043	2398	2400	2	60	60	0	119	119	0	179	180	0
All	2044	2358	2360	2	59	59	0	118	118	0	178	178	0
All	2045	2323	2325	1	59	59	0	117	117	0	176	176	0
All	2046	2288	2290	1	58	58	0	116	116	0	173	174	0
All	2047	2259	2260	1	57	57	0	114	114	0	172	172	0
All	2048	2231	2233	1	57	57	0	113	113	0	170	170	0
All	2049	2205	2207	1	56	56	0	112	112	0	168	168	0
All	2050	2181	2182	1	55	55	0	111	111	0	166	166	0
All	2051	2181	2182	1	55	55	0	111	111	0	167	167	0
All	2052	2181	2182	1	55	55	0	111	112	0	168	168	0
All	2053	2181	2182	1	54	54	0	112	112	0	169	169	0
All	2054	2181	2182	1	54	54	0	112	112	0	170	170	0
All	2055	2181	2182	1	53	53	0	112	112	0	171	171	0
All	2056	2181	2182	1	53	53	0	111	112	0	171	171	0
All	2057	2181	2182	1	52	52	0	111	111	0	171	171	0
All	2058	2181	2182	1	51	51	0	111	111	0	170	171	0
All	2059	2181	2182	1	50	50	0	110	110	0	170	170	0
All	2060	2181	2182	1	49	49	0	109	109	0	170	170	0
All	2061	2181	2182	1	48	48	0	108	108	0	168	168	0
All	2062	2181	2182	1	47	47	0	107	107	0	167	167	0
All	2063	2181	2182	1	46	46	0	105	105	0	165	165	0
All	2064	2181	2182	1	45	45	0	104	104	0	163	163	0
All	2065	2181	2182	1	43	43	0	102	102	0	161	161	0
All	2066	2181	2182	1	42	42	0	100	100	0	158	158	0
All	2067	2181	2182	1	41	41	0	98	99	0	156	156	0
All	2068	2181	2182	1	39	39	0	96	96	0	153	153	0
All	2069	2181	2182	1	38	38	0	94	94	0	150	150	0
All	2070	2181	2182	1	37	37	0	92	92	0	147	147	0
All	2071	2181	2182	1	36	36	0	90	90	0	144	144	0
All	2072	2181	2182	1	34	34	0	88	88	0	141	141	0
All	2073	2181	2182	1	33	33	0	86	86	0	138	138	0
All	2074	2181	2182	1	32	32	0	83	83	0	135	135	0
All	2075	2181	2182	1	30	30	0	81	81	0	132	132	0

All	2076	2181	2182	1	29	29	0	79	79	0	128	129	0
All	2077	2181	2182	1	28	28	0	76	77	0	125	125	0
All	2078	2181	2182	1	27	27	0	74	74	0	122	122	0
All	2079	2181	2182	1	26	26	0	72	72	0	118	118	0
All	2080	2181	2182	1	24	24	0	70	70	0	115	115	0
All	2081	2181	2182	1	23	23	0	68	68	0	112	112	0
All	2082	2181	2182	1	22	22	0	65	65	0	109	109	0
Car	Total	82643	82972	329	1670	1676	6	3569	3582	13	5470	5490	20
LGV Personal	Total	3293	3300	6	67	67	0	143	144	0	220	220	0
LGV Freight	Total	24150	24197	48	488	489	1	1051	1053	2	1614	1617	3
OGV1	Total	20965	20966	1	424	424	0	918	918	0	1413	1413	0
OGV2	Total	22859	22857	-2	462	462	-0	999	999	-0	1536	1536	-0
All	Total	153910	154292	382	3110	3118	7	6681	6696	15	10253	10276	23

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	22	22	0	0	0	0	0	0	1	1	0	
Car	2037	47	47	0	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	-0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	23	23	0	0	0	0	0	0	1	1	-0	
All	2024	30	30	0	0	0	1	1	0	1	1	0	
All	2025	40	40	-0	0	0	-0	1	1	-0	2	2	-0
All	2026	49	49	0	1	1	0	1	1	0	2	2	0
All	2027	57	57	0	1	1	0	2	2	0	3	3	0
All	2028	62	62	0	1	1	0	2	2	0	3	3	0
All	2029	64	64	0	1	1	0	2	2	0	3	3	0
All	2030	64	64	0	1	1	0	2	2	0	3	3	0
All	2031	64	64	0	1	1	0	2	2	0	4	4	0
All	2032	63	63	0	1	1	0	2	2	0	4	4	0
All	2033	62	62	0	1	1	0	3	3	0	4	4	0
All	2034	60	60	0	1	1	0	3	3	0	4	4	0
All	2035	57	57	0	1	1	0	2	2	0	4	4	0
All	2036	54	54	0	1	1	0	2	2	0	4	4	0
All	2037	51	51	0	1	1	0	2	2	0	4	4	0
All	2038	48	48	0	1	1	0	2	2	0	3	3	0
All	2039	45	45	0	1	1	0	2	2	0	3	3	0

All	2040	42	42	0	1	1	0	2	2	0	3	3	0
All	2041	42	42	0	1	1	0	2	2	0	3	3	0
All	2042	42	42	0	1	1	0	2	2	0	3	3	0
All	2043	42	42	0	1	1	0	2	2	0	3	3	0
All	2044	41	41	0	1	1	0	2	2	0	3	3	0
All	2045	41	41	0	1	1	0	2	2	0	3	3	0
All	2046	40	40	0	1	1	0	2	2	0	3	3	0
All	2047	40	40	0	1	1	0	2	2	0	3	3	0
All	2048	39	39	0	1	1	0	2	2	0	3	3	0
All	2049	38	38	0	1	1	0	2	2	0	3	3	0
All	2050	37	37	0	1	1	0	2	2	0	3	3	0
All	2051	37	37	0	1	1	0	2	2	0	3	3	0
All	2052	37	37	0	1	1	0	2	2	0	3	3	0
All	2053	37	37	0	1	1	0	2	2	0	3	3	0
All	2054	37	37	0	1	1	0	2	2	0	3	3	0
All	2055	37	37	0	1	1	0	2	2	0	3	3	0
All	2056	37	37	0	1	1	0	2	2	0	3	3	0
All	2057	37	37	0	1	1	0	2	2	0	3	3	0
All	2058	37	37	0	1	1	0	2	2	0	3	3	0
All	2059	37	37	0	1	1	0	2	2	0	3	3	0
All	2060	37	37	0	1	1	0	2	2	0	3	3	0
All	2061	37	37	0	1	1	0	2	2	0	3	3	0
All	2062	37	37	0	1	1	0	2	2	0	3	3	0
All	2063	37	37	0	1	1	0	2	2	0	3	3	0
All	2064	37	37	0	1	1	0	2	2	0	3	3	0
All	2065	37	37	0	1	1	0	2	2	0	3	3	0
All	2066	37	37	0	1	1	0	2	2	0	3	3	0
All	2067	37	37	0	1	1	0	2	2	0	3	3	0
All	2068	37	37	0	1	1	0	2	2	0	3	3	0
All	2069	37	37	0	1	1	0	2	2	0	3	3	0
All	2070	37	37	0	1	1	0	2	2	0	2	2	0
All	2071	37	37	0	1	1	0	2	2	0	2	2	0
All	2072	37	37	0	1	1	0	1	1	0	2	2	0
All	2073	37	37	0	1	1	0	1	1	0	2	2	0
All	2074	37	37	0	1	1	0	1	1	0	2	2	0
All	2075	37	37	0	1	1	0	1	1	0	2	2	0
All	2076	37	37	0	1	1	0	1	1	0	2	2	0
All	2077	37	37	0	0	0	0	1	1	0	2	2	0
All	2078	37	37	0	0	0	0	1	1	0	2	2	0
All	2079	37	37	0	0	0	0	1	1	0	2	2	0
All	2080	37	37	0	0	0	0	1	1	0	2	2	0
All	2081	37	37	0	0	0	0	1	1	0	2	2	0
All	2082	37	37	0	0	0	0	1	1	0	2	2	0
Car	Total	2287	2287	-0	46	46	0	97	97	0	149	149	0

LGV Personal	Total	27	27	0	1	1	0	1	1	0	2	2	0
LGV Freight	Total	195	195	0	4	4	0	9	9	0	13	13	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2508	2508	0	51	51	0	106	106	0	164	164	0

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	692	719	27	14	14	1	28	29	1	42	44	2
AM peak	2037	443	445	2	10	10	0	20	20	0	30	31	0
PM peak	2023	682	701	19	14	14	0	28	28	1	41	42	1
PM peak	2037	415	415	0	10	10	0	19	19	0	28	28	0
Inter-peak	2023	2630	2630	0	53	53	0	107	107	0	159	159	0
Inter-peak	2037	1647	1647	0	38	38	0	75	75	0	113	113	0
Off-peak	2023	379	379	0	8	8	0	15	15	0	23	23	0
Off-peak	2037	240	240	0	6	6	0	11	11	0	16	16	0
AM peak	Total	24637	24892	256	498	503	5	1070	1080	10	1642	1657	16
PM peak	Total	22894	23020	126	463	465	2	992	997	5	1522	1529	7
Inter-peak	Total	92887	92887	0	1877	1877	0	4033	4033	0	6190	6190	0
Off-peak	Total	13493	13493	0	273	273	0	586	586	0	899	899	0

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	2037	9	9	0	0	0	0	0	0	1	1	0	0
PM peak	2023	4	4	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	9	9	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	13	13	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	29	29	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	Total	423	423	0	9	9	0	18	18	0	28	28	0
PM peak	Total	460	460	-0	9	9	-0	20	20	-0	30	30	-0
Inter-peak	Total	1419	1419	0	29	29	0	60	60	0	93	93	0
Off-peak	Total	206	206	0	4	4	0	9	9	0	13	13	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	186	0	-14	7	0	8
Road	2024	178	0	-13	7	0	7
Road	2025	171	0	-11	6	0	6
Road	2026	163	0	-10	6	0	6
Road	2027	156	0	-9	6	0	5
Road	2028	149	0	-7	5	0	4
Road	2029	143	0	-6	5	0	3
Road	2030	136	0	-5	5	0	3
Road	2031	130	0	-4	5	0	2
Road	2032	124	0	-3	4	0	2
Road	2033	118	0	-3	4	0	1
Road	2034	112	0	-2	4	0	1
Road	2035	106	0	-1	4	0	1
Road	2036	101	0	-1	3	0	0
Road	2037	96	0	-0	3	0	0
Road	2038	94	0	-0	3	0	0
Road	2039	92	0	-0	3	0	0
Road	2040	90	0	-0	3	0	0
Road	2041	88	0	-0	3	0	0
Road	2042	86	0	-0	3	0	0
Road	2043	85	0	-0	3	0	0
Road	2044	83	0	-0	2	0	0
Road	2045	81	0	-0	2	0	0
Road	2046	79	0	-0	2	0	0
Road	2047	78	0	-0	2	0	0
Road	2048	76	0	-0	2	0	0
Road	2049	74	0	-0	2	0	0
Road	2050	73	0	-0	2	0	0
Road	2051	72	0	-0	2	0	0
Road	2052	70	0	-0	2	0	0
Road	2053	69	0	-0	2	0	0
Road	2054	68	0	-0	2	0	0
Road	2055	67	0	-0	2	0	0
Road	2056	66	0	-0	2	0	0
Road	2057	65	0	-0	2	0	0
Road	2058	64	0	-0	2	0	0
Road	2059	63	0	-0	2	0	0
Road	2060	62	0	-0	1	0	0
Road	2061	61	0	-0	1	0	0

Road	2062	60	0	-0	1	0	0
Road	2063	59	0	-0	1	0	0
Road	2064	58	0	-0	1	0	0
Road	2065	57	0	-0	1	0	0
Road	2066	57	0	-0	1	0	0
Road	2067	56	0	-0	1	0	0
Road	2068	55	0	-0	1	0	0
Road	2069	54	0	-0	1	0	0
Road	2070	53	0	-0	1	0	0
Road	2071	53	0	-0	1	0	0
Road	2072	52	0	-0	1	0	0
Road	2073	51	0	-0	1	0	0
Road	2074	50	0	-0	1	0	0
Road	2075	50	0	-0	1	0	0
Road	2076	49	0	-0	1	0	0
Road	2077	48	0	-0	1	0	0
Road	2078	48	0	-0	1	0	0
Road	2079	47	0	-0	1	0	0
Road	2080	46	0	-0	1	0	0
Road	2081	46	0	-0	1	0	0
Road	2082	45	0	-0	1	0	0
Road	Total	4968	0	-98	146	0	55

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	136	0	-12	1	0	7
Car	2037	70	0	-0	1	0	0
LGV Personal	2023	2	0	-0	0	0	0
LGV Personal	2037	1	0	0	0	0	0
LGV Freight	2023	31	0	-2	1	0	1
LGV Freight	2037	16	0	0	0	0	0
OGV1	2023	9	0	-0	2	0	0
OGV1	2037	5	0	0	1	0	0
OGV2	2023	8	0	0	3	0	-0
OGV2	2037	4	0	0	1	0	0
All	2023	186	0	-14	7	0	8
All	2037	96	0	-0	3	0	0
Car	Total	3632	0	-84	28	0	47
LGV Personal	Total	49	0	-2	0	0	1
LGV Freight	Total	820	0	-13	21	0	7
OGV1	Total	258	0	-0	38	0	0
OGV2	Total	209	0	0	59	0	-0



All	Total	4968	0	-98	146	0	55
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PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
All	2023	186	0	-14	7	0	8
All	2037	96	0	-0	3	0	0
All	Total	4968	0	-98	146	0	55

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Business	2023	57	0	-3	7	0	2
Business	2037	29	0	-0	3	0	0
Commuting	2023	53	0	-4	0	0	2
Commuting	2037	26	0	-0	0	0	0
Other	2023	77	0	-7	0	0	4
Other	2037	40	0	-0	0	0	0
Business	Total	1526	0	-18	146	0	10
Commuting	Total	1351	0	-30	0	0	17
Other	Total	2091	0	-50	0	0	28

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
AM peak	2023	94	0	-8	4	0	5
AM peak	2037	42	0	-0	1	0	0
PM peak	2023	53	0	-6	1	0	3
PM peak	2037	27	0	0	1	0	0
Inter-peak	2023	38	0	0	2	0	0
Inter-peak	2037	26	0	0	1	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	1	0	0	0	0	0
AM peak	Total	2259	0	-62	69	0	35
PM peak	Total	1409	0	-36	28	0	20
Inter-peak	Total	1255	0	0	47	0	0
Off-peak	Total	45	0	0	2	0	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
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Car	Business	2023	0	0	0	2	0	0
Car	Business	2037	0	0	0	1	0	0
Car	Business	Total	0	0	0	67	0	0
Car	Commuting	2023	0	0	0	7	0	0
Car	Commuting	2037	0	0	0	5	0	0
Car	Commuting	Total	0	0	0	308	0	0
Car	Other	2023	0	0	0	23	0	0
Car	Other	2037	0	0	0	16	0	0
Car	Other	Total	0	0	0	1029	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	1	0	0
LGV Personal	Other	2037	0	0	0	0	0	0
LGV Personal	Other	Total	0	0	0	25	0	0
LGV Freight	Business	2023	0	0	0	3	0	0
LGV Freight	Business	2037	0	0	0	2	0	0
LGV Freight	Business	Total	0	0	0	150	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	1	0	0
OGV1	Business	2037	0	0	0	1	0	0
OGV1	Business	Total	0	0	0	41	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	1	0	0
OGV2	Business	2037	0	0	0	1	0	0
OGV2	Business	Total	0	0	0	33	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0

OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	9	0	0
Car	Business	2037	0	0	0	5	0	0
Car	Business	Total	0	0	0	239	0	0
Car	Commuting	2023	0	0	0	53	0	0
Car	Commuting	2037	0	0	0	26	0	0
Car	Commuting	Total	0	0	0	1351	0	0
Car	Other	2023	0	0	0	75	0	0
Car	Other	2037	0	0	0	40	0	0
Car	Other	Total	0	0	0	2041	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	2	0	0
LGV Personal	Other	2037	0	0	0	1	0	0
LGV Personal	Other	Total	0	0	0	49	0	0
LGV Freight	Business	2023	0	0	0	31	0	0
LGV Freight	Business	2037	0	0	0	16	0	0
LGV Freight	Business	Total	0	0	0	820	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	9	0	0
OGV1	Business	2037	0	0	0	5	0	0
OGV1	Business	Total	0	0	0	258	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	8	0	0
OGV2	Business	2037	0	0	0	4	0	0
OGV2	Business	Total	0	0	0	209	0	0

OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	0	10	0	0
Car	Business	2037	0	0	0	5	0	0
Car	Business	Total	0	0	0	262	0	0
Car	Commuting	2023	0	0	0	48	0	0
Car	Commuting	2037	0	0	0	25	0	0
Car	Commuting	Total	0	0	0	1321	0	0
Car	Other	2023	0	0	0	68	0	0
Car	Other	2037	0	0	0	39	0	0
Car	Other	Total	0	0	0	1993	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	2	0	0
LGV Personal	Other	2037	0	0	0	1	0	0
LGV Personal	Other	Total	0	0	0	48	0	0
LGV Freight	Business	2023	0	0	0	30	0	0
LGV Freight	Business	2037	0	0	0	16	0	0
LGV Freight	Business	Total	0	0	0	827	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	11	0	0
OGV1	Business	2037	0	0	0	6	0	0
OGV1	Business	Total	0	0	0	296	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0

OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	11	0	0
OGV2	Business	2037	0	0	0	5	0	0
OGV2	Business	Total	0	0	0	269	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	2	0	0	0	0	0	0
Car	Business	2037	0	1	0	0	0	0	0	0
Car	Business	Total	0	67	0	0	0	0	0	0
Car	Commuting	2023	0	7	0	0	0	0	0	0
Car	Commuting	2037	0	5	0	0	0	0	0	0
Car	Commuting	Total	0	308	0	0	0	0	0	0
Car	Other	2023	0	23	0	0	0	0	0	0
Car	Other	2037	0	16	0	0	0	0	0	0
Car	Other	Total	0	1029	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	1	0	0	0	0	0	0
LGV Personal	Other	2037	0	0	0	0	0	0	0	0
LGV Personal	Other	Total	0	25	0	0	0	0	0	0
LGV Freight	Business	2023	0	3	0	0	0	0	0	0
LGV Freight	Business	2037	0	2	0	0	0	0	0	0
LGV Freight	Business	Total	0	150	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	1	0	0	0	0	0	0
OGV1	Business	2037	0	1	0	0	0	0	0	0



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	9	0	0	0	0	0	0
OGV1	Business	2037	0	5	0	0	0	0	0	0
OGV1	Business	Total	0	258	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	8	0	0	0	0	0	0
OGV2	Business	2037	0	4	0	0	0	0	0	0
OGV2	Business	Total	0	209	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (E000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	10	0	0	0	0	0	0
Car	Business	2037	0	5	0	0	0	0	0	0
Car	Business	Total	0	262	0	0	0	0	0	0
Car	Commuting	2023	0	48	0	0	0	0	0	0
Car	Commuting	2037	0	25	0	0	0	0	0	0
Car	Commuting	Total	0	1321	0	0	0	0	0	0
Car	Other	2023	0	68	0	0	0	0	0	0
Car	Other	2037	0	39	0	0	0	0	0	0
Car	Other	Total	0	1993	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	2	0	0	0	0	0	0
LGV Personal	Other	2037	0	1	0	0	0	0	0	0
LGV Personal	Other	Total	0	48	0	0	0	0	0	0
LGV Freight	Business	2023	0	30	0	0	0	0	0	0

LGV Freight	Business	2037	0	16	0	0	0	0	0	0
LGV Freight	Business	Total	0	827	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	11	0	0	0	0	0	0
OGV1	Business	2037	0	6	0	0	0	0	0	0
OGV1	Business	Total	0	296	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	11	0	0	0	0	0	0
OGV2	Business	2037	0	5	0	0	0	0	0	0
OGV2	Business	Total	0	269	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	7.19%	7.56%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	1351	1351
Vehicle operating costs	-30	-30
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>1321</b>	<b>1321</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	2091	2091



Vehicle operating costs	-50	-50
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	2041	2041

Business	All Modes	Road Personal	Road Freight
Travel Time	1526	239	1287
Vehicle operating costs	128	23	105
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	1654	262	1392

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

#### Other business Impacts

Developer contributions	-455	-455
NET BUSINESS IMPACT	1199	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE)	4561
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	265	265
Investment Costs	1527	1527
Developer Contributions	-455	-455
Grant/Subsidy Payments	0	0
NET IMPACT	1336	1336

#### Central Government Funding: Transport

	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	5734	5734
Developer Contributions	0	0

Grant/Subsidy Payments	0	0
NET IMPACT	5734	5734

Central Government Funding: Non-Transport

Indirect Tax Revenues	-55	-55
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TOTALS

Broad Transport Budget	7070	7070
Wider Public Finances	-55	-55

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-15
Economic Efficiency: Consumer Users (Commuting)	1321
Economic Efficiency: Consumer Users (Other)	2041
Economic Efficiency: Business Users and Providers	1199
Wider Public Finances (Indirect Taxation Revenues)	55
Present Value of Benefits (PVB)	4601
Broad Transport Budget	7070
Present Value of Costs (PVC)	7070
OVERALL IMPACTS	
Net Present Value (NPV)	-2469
Benefit to Cost Ratio (BCR)	0.651

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-1\_Ollerton\_LowV4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\MasterFile - 1\_Ollerton\_V4\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Low\_V4\_Sens\_15OB\1\_TUBA\_Ollerton\_Low\_v4\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\1-Ollerton\TUBA\_Low\_V4\_Sens\_15OB\1\_TUBA\_Ollerton\_Low\_v4\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs



# Appendix Z – Mickledale Lane TUBA Files

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-3\_Mickleale\_V4.1\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1045.68	F	119.37	1
P	1	CEN	33.33	F	119.37	1
C	1	CEN	5278.09	F	119.37	1
L	1	CEN	49.54	F	119.37	1
S	1	CEN	170.96	F	119.37	1

P	1	LOC	47.17	F	119.37	1
C	1	LOC	848.6845	F	119.37	1
L	1	LOC	7.96	F	119.37	1
S	1	LOC	63.9735	F	119.37	1
D	1	LOC	115	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00		23.50	36.90	0.00	0.00	0.00	0.00
2021	1	83.20		23.50	63.10	50.00	0.00	0.00	100.00
2022	1	16.80		35.40	0.00	50.00	0.00	0.00	0.00
2023	1	0.00		17.60	0.00	0.00	0.00	0.00	0.00
2024	1	0.00		0.00	0.00	0.00	0.421	0.00	0.00
2025	1	0.00		0.00	0.00	0.00	0.411	0.00	0.00
2026	1	0.0		0.0	0.0	0.0	0.402	0.0	0.0
2027	1	0.0		0.0	0.0	0.0	0.393	0.0	0.0
2028	1	0.0		0.0	0.0	0.0	1.636	0.0	0.0
2029	1	0.0		0.0	0.0	0.0	0.376	0.0	0.0
2030	1	0.0		0.0	0.0	0.0	0.367	0.0	0.0
2031	1	0.0		0.0	0.0	0.0	0.359	0.0	0.0
2032	1	0.0		0.0	0.0	0.0	0.351	0.0	0.0
2033	1	0.0		0.0	0.0	0.0	8.154	0.0	0.0
2034	1	0.0		0.0	0.0	0.0	0.335	0.0	0.0
2035	1	0.0		0.0	0.0	0.0	0.328	0.0	0.0



2036	1	0.0	0.0	0.0	0.0	0.320	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.303	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.286	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.280	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	28.105	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.267	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.261	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.255	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.249	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	1.634	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.238	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.233	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.228	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.223	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.174	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.213	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.208	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.203	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.199	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.827	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.190	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.186	0.0	0.0	0.0

2061	1	0.0	0.0	0.0	0.0	0.181	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.177	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	36.868	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.170	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.166	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.162	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.158	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.659	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.151	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.148	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.145	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.141	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.842	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.135	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.132	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.129	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.126	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.525	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.120	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.118	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.115	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.113	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30304	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43315	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01720	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.12610	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03580	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt
7	7	1	V	1	0	2023	0.02970	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DM.txt

8	1	2	V	1	0	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
31	3	1	V	1	1	2023	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt

33	5	1	V	1	1	2023	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
56	7	4	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2023 DS.txt
57	1	1	T	1	0	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\T_3_Mickledale_V4.1 AM 2023 DM.txt











158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
170	2	1	V	1	0	2037	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
173	5	1	V	1	0	2037	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
175	7	1	V	1	0	2037	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
177	2	2	V	1	0	2037	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
178	3	2	V	1	0	2037	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
180	5	2	V	1	0	2037	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
181	6	2	V	1	0	2037	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt
182	7	2	V	1	0	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt

183	1	3	V	1	0	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
206	3	2	V	1	1	2037	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
207	4	2	V	1	1	2037	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt

208	5	2	V	1	1	2037	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 AM 2037 DM.txt
232	1	2	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1\V_3_Mickledale_V4.1 PM 2037 DM.txt











333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1\D_3_Mickledale_V4.1 AM 2023 DM.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:27:44

ERRORS AND WARNINGS

911 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.119	0.584	0.584	
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.119	1.678	1.678	
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.119	0.584	0.584	
3	2	4	Car	Business	All	2023	0.001	0.012	0.119	0.251	0.251	
3	2	4	LGV	Personal	Other	All	2023	0.001	0.012	0.119	0.141	0.141
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.119	0.410	0.410	
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.119	0.410	0.410	
3	2	4	LGV	Personal	Other	All	2037	0.001	0.012	0.119	0.141	0.141
3	2	4	Car	Business	All	2037	0.001	0.012	0.119	0.251	0.251	
3	2	4	Car	Other	All	2023	0.001	0.012	0.119	3.906	3.906	
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.119	1.678	1.678	
3	2	4	Car	Other	All	2037	0.001	0.012	0.119	3.906	3.906	
3	2	4	LGV	Freight	Business	All	2023	0.001	0.012	0.119	1.031	1.031
3	2	4	LGV	Freight	Business	All	2037	0.001	0.012	0.119	1.031	1.031
2	3	4	Car	Other	All	2023	0.001	0.010	0.139	4.394	4.394	

2	3	4	Car	Other	All	2037	0.001	0.010	0.139	4.394	4.394
2	3	4	LGV Freight	Business	All	2037	0.001	0.010	0.139	1.159	1.159
2	3	4	LGV Personal	Other	All	2023	0.001	0.010	0.139	0.158	0.158
2	3	4	Car	Commuting	All	2023	0.001	0.010	0.139	1.888	1.888
2	3	4	LGV Freight	Business	All	2023	0.001	0.010	0.139	1.159	1.159

Displayed 20 warnings of a total of 245 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	3	4	Car	Business	All	2037	2.000	0.001	1503.759	0.283	130.000
2	3	4	LGV Freight	Business	All	2037	2.000	0.001	1503.759	1.159	110.000
2	3	4	OGV1	Business	All	2037	2.000	0.001	1503.759	0.657	85.000
2	3	4	Car	Commuting	All	2023	2.000	0.001	1503.759	1.888	130.000
2	3	4	OGV2	Business	All	2037	2.000	0.001	1503.759	0.462	85.000
2	3	4	Car	Commuting	All	2037	2.000	0.001	1503.759	1.888	130.000
2	3	4	OGV2	Business	All	2023	2.000	0.001	1503.759	0.462	85.000
2	3	4	Car	Other	All	2037	2.000	0.001	1503.759	4.394	130.000
2	3	4	LGV Personal	Other	All	2037	2.000	0.001	1503.759	0.158	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.001	1503.759	1.159	110.000
2	3	4	LGV Personal	Other	All	2023	2.000	0.001	1503.759	0.158	110.000
2	3	4	Car	Other	All	2023	2.000	0.001	1503.759	4.394	130.000
2	3	4	OGV1	Business	All	2023	2.000	0.001	1503.759	0.657	85.000
2	3	4	Car	Business	All	2023	2.000	0.001	1503.759	0.283	130.000
3	2	4	Car	Other	All	2023	2.000	0.001	1388.889	3.906	130.000
3	2	4	Car	Commuting	All	2023	2.000	0.001	1388.889	1.678	130.000

3	1	4	Car	Other	All	2023	2.000	0.001	1388.889	28.806	130.000
3	1	4	OGV1	Business	All	2023	2.000	0.001	1388.889	4.307	85.000
3	2	4	OGV2	Business	All	2023	2.000	0.001	1388.889	0.410	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.001	1388.889	1.037	110.000

Displayed 20 warnings of a total of 308 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal	Other	All	2023	2.000	0.002	1030.928	1.037	110.000
3	1	4	OGV2	Business	All	2037	2.000	0.002	1030.928	3.129	85.000
3	1	4	Car	Commuting	All	2037	2.000	0.002	1030.928	12.795	130.000
3	1	4	Car	Other	All	2037	2.000	0.002	1030.928	29.782	130.000
3	1	4	Car	Other	All	2023	2.000	0.002	1030.928	28.806	130.000
3	1	4	LGV Personal	Other	All	2037	2.000	0.002	1030.928	1.072	110.000
3	1	4	OGV2	Business	All	2023	2.000	0.002	1030.928	3.027	85.000
3	1	4	OGV1	Business	All	2023	2.000	0.002	1030.928	4.307	85.000
3	1	4	Car	Business	All	2037	2.000	0.002	1030.928	1.917	130.000
3	1	4	LGV Freight	Business	All	2023	2.000	0.002	1030.928	7.601	110.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.002	1030.928	7.859	110.000
3	1	4	OGV1	Business	All	2037	2.000	0.002	1030.928	4.453	85.000
3	1	4	Car	Business	All	2023	2.000	0.002	1030.928	1.854	130.000
3	1	4	Car	Commuting	All	2023	2.000	0.002	1030.928	12.375	130.000
3	1	3	LGV Freight	Business	All	2037	2.000	0.002	865.801	80.003	110.000
3	1	3	OGV1	Business	All	2023	2.000	0.002	865.801	43.946	85.000
3	1	3	LGV Personal	Other	All	2023	2.000	0.002	865.801	10.577	110.000

3	1	3	Car	Commuting	All	2023	2.000	0.002	865.801	49.539	130.000
3	1	3	OGV1	Business	All	2037	2.000	0.002	865.801	45.333	85.000
3	1	3	Car	Business	All	2023	2.000	0.002	865.801	31.569	130.000

Displayed 20 warnings of a total of 330 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
1	2	4	Car	Business	All	2023	0.000	0.004
1	3	4	Car	Business	All	2023	0.000	0.004
1	2	4	Car	Business	All	2037	0.000	0.004
1	3	4	Car	Business	All	2037	0.000	0.004
1	2	4	Car	Commuting	All	2023	0.000	0.004
1	3	4	Car	Commuting	All	2023	0.000	0.004
1	2	4	Car	Commuting	All	2037	0.000	0.004
1	3	4	Car	Commuting	All	2037	0.000	0.004
1	2	4	Car	Other	All	2023	0.000	0.004
1	3	4	Car	Other	All	2023	0.000	0.004
1	2	4	Car	Other	All	2037	0.000	0.004
1	3	4	Car	Other	All	2037	0.000	0.004
1	2	4	LGV Personal	Other	All	2023	0.000	0.004
1	3	4	LGV Personal	Other	All	2023	0.000	0.004
1	2	4	LGV Personal	Other	All	2037	0.000	0.004
1	3	4	LGV Personal	Other	All	2037	0.000	0.004
1	2	4	LGV Freight	Business	All	2023	0.000	0.004
1	3	4	LGV Freight	Business	All	2023	0.000	0.004

1 2 4 LGV Freight Business All 2037 0.000 0.004

1 3 4 LGV Freight Business All 2037 0.000 0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-3\_Mickleale\_V4.1\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\MasterFile - 3\_Mickleale\_V4.1\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438



Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0



Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted E000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
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Road	2020	30	0	0	13	0	0	0	0
Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0
Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0

Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0

Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2

Road	2028	0	9	9
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1

Road	2053	0	12	12
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	66	66
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0

Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1130	1130
Car	2023	PM peak	1218	1218
Car	2023	Inter-peak	3192	3192
Car	2023	Off-peak	463	463
Car	2023	All	6003	6003
Car	2037	AM peak	1169	1169
Car	2037	PM peak	1243	1243
Car	2037	Inter-peak	3290	3290
Car	2037	Off-peak	476	476
Car	2037	All	6179	6179
LGV Personal	2023	AM peak	25	25
LGV Personal	2023	PM peak	24	24
LGV Personal	2023	Inter-peak	77	77
LGV Personal	2023	Off-peak	11	11
LGV Personal	2023	All	137	137

LGV Personal	2037 AM peak	25	25
LGV Personal	2037 PM peak	25	25
LGV Personal	2037 Inter-peak	79	79
LGV Personal	2037 Off-peak	11	11
LGV Personal	2037 All	141	141
LGV Freight	2023 AM peak	180	180
LGV Freight	2023 PM peak	178	178
LGV Freight	2023 Inter-peak	564	564
LGV Freight	2023 Off-peak	82	82
LGV Freight	2023 All	1003	1003
LGV Freight	2037 AM peak	186	186
LGV Freight	2037 PM peak	182	182
LGV Freight	2037 Inter-peak	581	581
LGV Freight	2037 Off-peak	84	84
LGV Freight	2037 All	1033	1033
OGV1	2023 AM peak	51	51
OGV1	2023 PM peak	31	31
OGV1	2023 Inter-peak	319	319
OGV1	2023 Off-peak	46	46
OGV1	2023 All	448	448
OGV1	2037 AM peak	53	53
OGV1	2037 PM peak	32	32
OGV1	2037 Inter-peak	329	329
OGV1	2037 Off-peak	48	48
OGV1	2037 All	462	462



OGV2	2023 AM peak	42	42
OGV2	2023 PM peak	27	27
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	326	326
OGV2	2037 AM peak	44	44
OGV2	2037 PM peak	27	27
OGV2	2037 Inter-peak	231	231
OGV2	2037 Off-peak	33	33
OGV2	2037 All	336	336
All	2023 AM peak	1428	1428
All	2023 PM peak	1478	1478
All	2023 Inter-peak	4376	4376
All	2023 Off-peak	635	635
All	2023 All	7917	7917
All	2037 AM peak	1478	1478
All	2037 PM peak	1509	1509
All	2037 Inter-peak	4511	4511
All	2037 Off-peak	652	652
All	2037 All	8150	8150

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	133	0	916	603	304	0	951	611

Road	2037	110	0	530	384	249	0	551	389
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FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	380	360	53	393	373	55
Car	2037	295	209	422	305	216	437
LGV Personal	2023	0	25	1	0	26	1
LGV Personal	2037	0	21	10	0	22	11
LGV Freight	2023	2	185	4	2	192	4
LGV Freight	2037	1	156	74	1	161	77
OGV1	2023	0	144	0	0	151	0
OGV1	2037	0	148	0	0	156	0
OGV2	2023	0	174	0	0	182	0
OGV2	2037	0	179	0	0	188	0
All	2023	382	888	58	396	924	60
All	2037	296	713	506	307	743	525
Car	Total	15518	11291	32448	16059	11685	33592
LGV Personal	Total	9	1184	902	9	1228	935
LGV Freight	Total	65	8681	6612	67	9004	6858
OGV1	Total	0	8875	0	0	9299	0
OGV2	Total	0	10716	0	0	11210	0
All	Total	15592	40747	39961	16135	42426	41386

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1659	1717	58	33	34	1	67	70	2	100	104	3
Car	2037	1116	1155	39	26	27	1	51	53	2	77	79	3
LGV Personal	2023	62	64	2	1	1	0	2	3	0	4	4	0
LGV Personal	2037	52	54	2	1	1	0	2	2	0	4	4	0
LGV Freight	2023	451	468	17	9	9	0	18	19	1	27	28	1
LGV Freight	2037	379	393	14	9	9	0	17	18	1	26	27	1
OGV1	2023	349	365	17	7	7	0	14	15	1	21	22	1
OGV1	2037	359	376	17	8	9	0	16	17	1	25	26	1
OGV2	2023	421	441	19	8	9	0	17	18	1	26	27	1
OGV2	2037	434	454	20	10	10	0	20	21	1	30	31	1
All	2023	2942	3055	113	59	61	2	119	124	5	178	185	7
All	2024	2895	3006	111	57	60	2	115	119	4	172	179	7
All	2025	2840	2949	109	56	58	2	110	115	4	166	173	6
All	2026	2791	2898	108	53	55	2	106	110	4	159	166	6
All	2027	2741	2847	106	52	54	2	102	106	4	154	160	6
All	2028	2689	2793	104	49	51	2	99	103	4	148	154	6
All	2029	2643	2746	103	48	50	2	96	99	4	143	149	6
All	2030	2597	2698	101	45	47	2	92	95	4	137	143	5
All	2031	2549	2648	99	47	49	2	95	98	4	142	148	6
All	2032	2510	2608	98	49	51	2	98	102	4	147	153	6
All	2033	2473	2570	97	51	53	2	100	104	4	151	157	6
All	2034	2434	2530	95	51	53	2	103	107	4	154	160	6

All	2035	2403	2497	94	52	54	2	104	108	4	157	163	6
All	2036	2373	2466	93	53	55	2	106	110	4	159	166	6
All	2037	2340	2432	92	54	56	2	107	111	4	161	167	6
All	2038	2309	2400	91	54	56	2	108	112	4	162	168	6
All	2039	2280	2370	90	54	56	2	108	112	4	163	169	6
All	2040	2248	2336	89	54	56	2	109	113	4	163	169	6
All	2041	2219	2307	88	54	57	2	108	112	4	163	169	6
All	2042	2192	2278	87	54	56	2	108	113	4	162	169	6
All	2043	2161	2247	86	54	56	2	107	112	4	162	168	6
All	2044	2136	2221	85	54	56	2	107	111	4	161	167	6
All	2045	2112	2196	84	53	56	2	106	111	4	160	166	6
All	2046	2086	2169	83	53	55	2	106	110	4	158	164	6
All	2047	2063	2146	82	52	54	2	104	109	4	157	163	6
All	2048	2042	2123	82	52	54	2	104	108	4	156	162	6
All	2049	2017	2097	81	51	53	2	102	106	4	153	160	6
All	2050	1995	2075	80	50	52	2	101	105	4	151	158	6
All	2051	1995	2075	80	50	52	2	102	106	4	153	159	6
All	2052	1995	2075	80	50	52	2	102	106	4	154	160	6
All	2053	1995	2075	80	50	52	2	102	106	4	155	161	6
All	2054	1995	2075	80	49	51	2	102	106	4	156	162	6
All	2055	1995	2075	80	49	51	2	102	106	4	156	162	6
All	2056	1995	2075	80	48	50	2	102	106	4	156	162	6
All	2057	1995	2075	80	47	49	2	102	106	4	156	163	6
All	2058	1995	2075	80	47	49	2	101	105	4	156	162	6
All	2059	1995	2075	80	46	48	2	101	105	4	156	162	6

All	2060	1995	2075	80	45	47	2	100	104	4	155	161	6
All	2061	1995	2075	80	44	46	2	99	103	4	154	160	6
All	2062	1995	2075	80	43	45	2	98	102	4	153	159	6
All	2063	1995	2075	80	42	44	2	96	100	4	151	157	6
All	2064	1995	2075	80	41	42	2	95	99	4	149	155	6
All	2065	1995	2075	80	40	41	2	93	97	4	147	153	6
All	2066	1995	2075	80	38	40	2	92	95	4	145	151	6
All	2067	1995	2075	80	37	39	1	90	94	4	143	148	6
All	2068	1995	2075	80	36	37	1	88	92	4	140	146	6
All	2069	1995	2075	80	35	36	1	86	90	3	138	143	6
All	2070	1995	2075	80	34	35	1	84	88	3	135	140	5
All	2071	1995	2075	80	32	34	1	82	86	3	132	137	5
All	2072	1995	2075	80	31	33	1	80	84	3	129	135	5
All	2073	1995	2075	80	30	31	1	78	81	3	126	132	5
All	2074	1995	2075	80	29	30	1	76	79	3	124	129	5
All	2075	1995	2075	80	28	29	1	74	77	3	121	125	5
All	2076	1995	2075	80	27	28	1	72	75	3	118	122	5
All	2077	1995	2075	80	26	27	1	70	73	3	115	119	5
All	2078	1995	2075	80	24	25	1	68	71	3	111	116	4
All	2079	1995	2075	80	23	24	1	66	68	3	108	113	4
All	2080	1995	2075	80	22	23	1	64	66	3	105	109	4
All	2081	1995	2075	80	21	22	1	62	64	2	102	106	4
All	2082	1995	2075	80	20	21	1	60	62	2	99	103	4
Car	Total	59463	61534	2071	1205	1247	42	2585	2675	90	3966	4104	138
LGV Personal	Total	2884	2991	108	58	61	2	126	131	5	194	201	7

LGV Freight	Total	21144	21932	789	428	444	16	925	960	35	1423	1476	53
OGV1	Total	21479	22506	1026	435	456	21	945	990	45	1456	1526	70
OGV2	Total	25937	27132	1195	525	549	24	1141	1194	53	1758	1839	81
All	Total	130906	136095	5189	2651	2756	105	5723	5950	227	8797	9146	349

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	14	14	0	0	0	0	0	0	0	0	0	0
Car	2037	24	25	1	1	1	0	1	1	0	2	2	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	15	15	1	0	0	0	0	0	0	0	0	0
All	2024	18	19	1	0	0	0	0	0	1	1	1	0
All	2025	22	23	1	0	0	0	1	1	0	1	1	0
All	2026	26	27	1	0	0	0	1	1	0	1	1	0
All	2027	30	31	1	0	0	0	1	1	0	1	1	0
All	2028	33	34	1	1	1	0	1	1	0	2	2	0
All	2029	34	35	1	1	1	0	1	1	0	2	2	0

All	2030	34	36	1	1	1	0	1	1	0	2	2	0
All	2031	35	36	1	1	1	0	1	1	0	2	2	0
All	2032	35	36	1	1	1	0	1	1	0	2	2	0
All	2033	34	35	1	1	1	0	1	1	0	2	2	0
All	2034	33	34	1	1	1	0	1	1	0	2	2	0
All	2035	32	33	1	1	1	0	1	1	0	2	2	0
All	2036	31	32	1	1	1	0	1	1	0	2	2	0
All	2037	29	30	1	1	1	0	1	1	0	2	2	0
All	2038	28	29	1	1	1	0	1	1	0	2	2	0
All	2039	26	27	1	1	1	0	1	1	0	2	2	0
All	2040	24	25	1	1	1	0	1	1	0	2	2	0
All	2041	25	25	1	1	1	0	1	1	0	2	2	0
All	2042	25	26	1	1	1	0	1	1	0	2	2	0
All	2043	25	26	1	1	1	0	1	1	0	2	2	0
All	2044	25	26	1	1	1	0	1	1	0	2	2	0
All	2045	25	26	1	1	1	0	1	1	0	2	2	0
All	2046	25	26	1	1	1	0	1	1	0	2	2	0
All	2047	24	25	1	1	1	0	1	1	0	2	2	0
All	2048	24	25	1	1	1	0	1	1	0	2	2	0
All	2049	24	24	1	1	1	0	1	1	0	2	2	0
All	2050	23	24	1	1	1	0	1	1	0	2	2	0
All	2051	23	24	1	1	1	0	1	1	0	2	2	0
All	2052	23	24	1	1	1	0	1	1	0	2	2	0
All	2053	23	24	1	1	1	0	1	1	0	2	2	0
All	2054	23	24	1	1	1	0	1	1	0	2	2	0

All	2055	23	24	1	1	1	0	1	1	0	2	2	0
All	2056	23	24	1	1	1	0	1	1	0	2	2	0
All	2057	23	24	1	1	1	0	1	1	0	2	2	0
All	2058	23	24	1	1	1	0	1	1	0	2	2	0
All	2059	23	24	1	1	1	0	1	1	0	2	2	0
All	2060	23	24	1	1	1	0	1	1	0	2	2	0
All	2061	23	24	1	1	1	0	1	1	0	2	2	0
All	2062	23	24	1	1	1	0	1	1	0	2	2	0
All	2063	23	24	1	1	1	0	1	1	0	2	2	0
All	2064	23	24	1	0	1	0	1	1	0	2	2	0
All	2065	23	24	1	0	0	0	1	1	0	2	2	0
All	2066	23	24	1	0	0	0	1	1	0	2	2	0
All	2067	23	24	1	0	0	0	1	1	0	2	2	0
All	2068	23	24	1	0	0	0	1	1	0	2	2	0
All	2069	23	24	1	0	0	0	1	1	0	2	2	0
All	2070	23	24	1	0	0	0	1	1	0	2	2	0
All	2071	23	24	1	0	0	0	1	1	0	2	2	0
All	2072	23	24	1	0	0	0	1	1	0	2	2	0
All	2073	23	24	1	0	0	0	1	1	0	1	2	0
All	2074	23	24	1	0	0	0	1	1	0	1	1	0
All	2075	23	24	1	0	0	0	1	1	0	1	1	0
All	2076	23	24	1	0	0	0	1	1	0	1	1	0
All	2077	23	24	1	0	0	0	1	1	0	1	1	0
All	2078	23	24	1	0	0	0	1	1	0	1	1	0
All	2079	23	24	1	0	0	0	1	1	0	1	1	0



All	2080	23	24	1	0	0	0	1	1	0	1	1	0
All	2081	23	24	1	0	0	0	1	1	0	1	1	0
All	2082	23	24	1	0	0	0	1	1	0	1	1	0
Car	Total	1239	1283	44	25	26	1	53	54	2	81	84	3
LGV Personal	Total	32	33	1	1	1	0	1	1	0	2	2	0
LGV Freight	Total	234	242	9	5	5	0	10	11	0	16	16	1
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1505	1558	54	31	32	1	64	66	2	99	102	4

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	518	517	-1	10	10	-0	21	21	-0	31	31	-0
AM peak	2037	402	401	-0	9	9	-0	18	18	-0	28	28	-0
PM peak	2023	504	504	0	10	10	0	20	20	0	31	31	0
PM peak	2037	374	374	0	9	9	0	17	17	0	26	26	0
Inter-peak	2023	1776	1776	0	36	36	0	72	72	0	108	108	0
Inter-peak	2037	1448	1448	0	33	33	0	66	66	0	99	99	0
Off-peak	2023	144	258	113	3	5	2	6	10	5	9	16	7
Off-peak	2037	117	209	93	3	5	2	5	10	4	8	14	6
AM peak	Total	22255	22231	-24	451	450	-0	972	971	-1	1494	1492	-2
PM peak	Total	20544	20544	0	416	416	0	896	896	0	1377	1377	0
Inter-peak	Total	81524	81524	0	1651	1651	0	3567	3567	0	5483	5483	0
Off-peak	Total	6583	11797	5213	133	239	106	288	516	228	443	793	351

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
AM peak	2037	6	6	0	0	0	0	0	0	0	0	0	0
PM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
PM peak	2037	6	6	0	0	0	0	0	0	0	0	0	0
Inter-peak	2023	8	8	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	16	16	0	0	0	1	1	0	1	1	0	0
Off-peak	2023	1	1	1	0	0	0	0	0	0	0	0	0
Off-peak	2037	1	2	1	0	0	0	0	0	0	0	0	0
AM peak	Total	292	292	0	6	6	0	12	12	0	19	19	0
PM peak	Total	307	307	0	6	6	0	13	13	0	20	20	0
Inter-peak	Total	838	838	0	17	17	0	36	36	0	55	55	0
Off-peak	Total	68	121	54	1	2	1	3	5	2	4	8	4

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost			Operator_Rev	Indirect
		User_Charges	Time_PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes	
Road	2023	-171	0	-35	-8	0	20	
Road	2024	-168	0	-34	-8	0	19	
Road	2025	-165	0	-32	-8	0	18	
Road	2026	-162	0	-31	-8	0	17	
Road	2027	-159	0	-30	-7	0	16	
Road	2028	-157	0	-29	-7	0	16	
Road	2029	-155	0	-28	-7	0	15	
Road	2030	-153	0	-27	-7	0	15	
Road	2031	-150	0	-26	-7	0	14	
Road	2032	-148	0	-25	-6	0	13	
Road	2033	-146	0	-24	-6	0	13	
Road	2034	-144	0	-23	-6	0	12	
Road	2035	-142	0	-22	-6	0	12	
Road	2036	-140	0	-21	-6	0	11	
Road	2037	-139	0	-21	-5	0	11	
Road	2038	-137	0	-20	-5	0	11	
Road	2039	-135	0	-19	-5	0	10	
Road	2040	-133	0	-18	-5	0	10	
Road	2041	-131	0	-18	-5	0	9	
Road	2042	-129	0	-17	-5	0	9	
Road	2043	-127	0	-16	-4	0	9	
Road	2044	-125	0	-16	-4	0	8	

Road	2045	-123	0	-15	-4	0	8
Road	2046	-121	0	-15	-4	0	8
Road	2047	-119	0	-14	-4	0	7
Road	2048	-117	0	-14	-4	0	7
Road	2049	-115	0	-13	-4	0	7
Road	2050	-114	0	-13	-3	0	7
Road	2051	-112	0	-12	-3	0	6
Road	2052	-111	0	-12	-3	0	6
Road	2053	-110	0	-12	-3	0	6
Road	2054	-109	0	-11	-3	0	6
Road	2055	-108	0	-11	-3	0	6
Road	2056	-107	0	-11	-3	0	6
Road	2057	-106	0	-11	-3	0	6
Road	2058	-105	0	-10	-3	0	5
Road	2059	-104	0	-10	-3	0	5
Road	2060	-103	0	-10	-3	0	5
Road	2061	-102	0	-9	-2	0	5
Road	2062	-101	0	-9	-2	0	5
Road	2063	-100	0	-9	-2	0	5
Road	2064	-99	0	-9	-2	0	5
Road	2065	-98	0	-9	-2	0	5
Road	2066	-97	0	-8	-2	0	5
Road	2067	-96	0	-8	-2	0	4
Road	2068	-96	0	-8	-2	0	4
Road	2069	-95	0	-8	-2	0	4

Road	2070	-94	0	-8	-2	0	4
Road	2071	-93	0	-7	-2	0	4
Road	2072	-92	0	-7	-2	0	4
Road	2073	-92	0	-7	-2	0	4
Road	2074	-91	0	-7	-2	0	4
Road	2075	-90	0	-7	-2	0	4
Road	2076	-89	0	-6	-2	0	4
Road	2077	-88	0	-6	-2	0	4
Road	2078	-88	0	-6	-2	0	3
Road	2079	-87	0	-6	-1	0	3
Road	2080	-86	0	-6	-1	0	3
Road	2081	-85	0	-6	-1	0	3
Road	2082	-85	0	-6	-1	0	3
Road	Total	-7042	0	-888	-228	0	479

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	-113	0	-19	-1	0	10
Car	2037	-92	0	-10	-1	0	5
LGV Personal	2023	-2	0	-1	0	0	0
LGV Personal	2037	-2	0	-0	0	0	0
LGV Freight	2023	-32	0	-5	-1	0	3
LGV Freight	2037	-26	0	-3	-1	0	2

OGV1	2023	-14	0	-5	-3	0	3
OGV1	2037	-11	0	-4	-2	0	2
OGV2	2023	-10	0	-6	-4	0	3
OGV2	2037	-8	0	-4	-2	0	2
All	2023	-171	0	-35	-8	0	20
All	2037	-139	0	-21	-5	0	11
Car	Total	-4660	0	-408	-31	0	209
LGV Personal	Total	-79	0	-18	0	0	10
LGV Freight	Total	-1314	0	-133	-28	0	70
OGV1	Total	-573	0	-152	-71	0	88
OGV2	Total	-416	0	-177	-99	0	102
All	Total	-7042	0	-888	-228	0	479

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	-171	0	-35	-8	0	20
All	2037	-139	0	-21	-5	0	11
All	Total	-7042	0	-888	-228	0	479

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes

Business	2023	-64	0	-17	-8	0	9
Business	2037	-52	0	-11	-5	0	6
Commuting	2023	-31	0	-5	0	0	3
Commuting	2037	-25	0	-3	0	0	1
Other	2023	-76	0	-13	0	0	7
Other	2037	-62	0	-7	0	0	3
Business	Total	-2621	0	-479	-228	0	269
Commuting	Total	-1282	0	-117	0	0	60
Other	Total	-3138	0	-292	0	0	150

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-28	0	0	-1	0	-0
AM peak	2037	-23	0	0	-1	0	-0
PM peak	2023	-30	0	0	-1	0	0
PM peak	2037	-24	0	0	-1	0	0
Inter-peak	2023	-96	0	0	-6	0	0
Inter-peak	2037	-78	0	0	-4	0	0
Off-peak	2023	-17	0	-35	-1	0	20
Off-peak	2037	-13	0	-21	-1	0	11
AM peak	Total	-1168	0	4	-29	0	-2
PM peak	Total	-1233	0	0	-21	0	0
Inter-peak	Total	-3957	0	0	-153	0	0

Off-peak Total -684 0 -892 -24 0 481

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-80	2	0	0
Car	Commuting	2023	0	0	-4	0	0	0
Car	Commuting	2037	0	0	-5	0	0	0
Car	Commuting	Total	0	0	-270	10	0	0
Car	Other	2023	0	0	-23	0	0	0
Car	Other	2037	0	0	-23	0	0	0
Car	Other	Total	0	0	-1390	29	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-36	1	0	0
LGV Freight	Business	2023	0	0	-4	0	0	0
LGV Freight	Business	2037	0	0	-4	0	0	0



LGV Freight	Business	Total	0	0	-217	5	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-1	0	0	0
OGV1	Business	Total	0	0	-81	1	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-59	1	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-8	0	0	0
Car	Business	2037	0	0	-6	0	0	0
Car	Business	Total	0	0	-324	6	0	0
Car	Commuting	2023	0	0	-32	1	0	0
Car	Commuting	2037	0	0	-26	1	0	0
Car	Commuting	Total	0	0	-1330	48	0	0
Car	Other	2023	0	0	-76	1	0	0
Car	Other	2037	0	0	-62	1	0	0
Car	Other	Total	0	0	-3124	64	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-2	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-81	2	0	0
LGV Freight	Business	2023	0	0	-33	1	0	0
LGV Freight	Business	2037	0	0	-26	1	0	0
LGV Freight	Business	Total	0	0	-1342	28	0	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-14	0	0	0
OGV1	Business	2037	0	0	-11	0	0	0
OGV1	Business	Total	0	0	-578	5	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-10	0	0	0
OGV2	Business	2037	0	0	-8	0	0	0
OGV2	Business	Total	0	0	-420	4	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-10	0	0	0
Car	Business	2037	0	0	-8	0	0	0
Car	Business	Total	0	0	-373	7	0	0
Car	Commuting	2023	0	0	-38	1	0	0
Car	Commuting	2037	0	0	-29	1	0	0
Car	Commuting	Total	0	0	-1447	48	0	0
Car	Other	2023	0	0	-88	1	0	0
Car	Other	2037	0	0	-68	1	0	0
Car	Other	Total	0	0	-3397	64	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-3	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-99	2	0	0
LGV Freight	Business	2023	0	0	-39	1	0	0
LGV Freight	Business	2037	0	0	-30	1	0	0
LGV Freight	Business	Total	0	0	-1503	29	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0

LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-22	0	0	0
OGV1	Business	2037	0	0	-17	0	0	0
OGV1	Business	Total	0	0	-801	5	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-20	0	0	0
OGV2	Business	2037	0	0	-15	0	0	0
OGV2	Business	Total	0	0	-697	5	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-1	0	0	0	0	0	0
OGV1	Business	2037	0	-1	0	0	0	0	0	0
OGV1	Business	Total	0	-80	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-1	0	0	0	0	0	0
OGV2	Business	2037	0	-1	0	0	0	0	0	0
OGV2	Business	Total	0	-58	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance





LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-14	0	0	0	0	0	0
OGV1	Business	2037	0	-11	0	0	0	0	0	0
OGV1	Business	Total	0	-573	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-10	0	0	0	0	0	0
OGV2	Business	2037	0	-8	0	0	0	0	0	0
OGV2	Business	Total	0	-416	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
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LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-22	0	0	0	0	0	0
OGV1	Business	2037	0	-16	0	0	0	0	0	0
OGV1	Business	Total	0	-796	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-20	0	0	0	0	0	0
OGV2	Business	2037	0	-15	0	0	0	0	0	0
OGV2	Business	Total	0	-692	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road -13.00% -16.09%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-1282	-1282
Vehicle operating costs	-117	-117
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	-1399	-1399

Consumer - Other user benefits	All Modes	Road
Travel Time	-3138	-3138
Vehicle operating costs	-292	-292
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	-3430	-3430

Business	All Modes	Road Personal	Road Freight
Travel Time	-2621	-318	-2303
Vehicle operating costs	-707	-49	-658
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	-3328	-367	-2961

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-3407	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	-8236
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0

NET IMPACT	857	857
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Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

Central Government Funding: Non-Transport

Indirect Tax Revenues	-479	-479
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TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-479	-479

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-227
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Economic Efficiency: Consumer Users (Commuting)	-1399
Economic Efficiency: Consumer Users (Other)	-3430
Economic Efficiency: Business Users and Providers	-3407
Wider Public Finances (Indirect Taxation Revenues)	479
Present Value of Benefits (PVB)	-7984
Broad Transport Budget	4611
Present Value of Costs (PVC)	4611
OVERALL IMPACTS	
Net Present Value (NPV)	-12595
Benefit to Cost Ratio (BCR)	-1.732

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-3\_Mickledale\_V4.1\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\MasterFile - 3\_Mickledale\_V4.1\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_Core\_150B\3-Mickeldale\_V4.1\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_Core\_150B\3-Mickeldale\_V4.1\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs



Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 11:23:28

ERRORS AND WARNINGS

911 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.119	0.584	0.584	
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.119	1.678	1.678	
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.119	0.584	0.584	
3	2	4	Car	Business	All	2023	0.001	0.012	0.119	0.251	0.251	
3	2	4	LGV	Personal	Other	All	2023	0.001	0.012	0.119	0.141	0.141
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.119	0.410	0.410	
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.119	0.410	0.410	
3	2	4	LGV	Personal	Other	All	2037	0.001	0.012	0.119	0.141	0.141
3	2	4	Car	Business	All	2037	0.001	0.012	0.119	0.251	0.251	
3	2	4	Car	Other	All	2023	0.001	0.012	0.119	3.906	3.906	
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.119	1.678	1.678	
3	2	4	Car	Other	All	2037	0.001	0.012	0.119	3.906	3.906	
3	2	4	LGV	Freight	Business	All	2023	0.001	0.012	0.119	1.031	1.031
3	2	4	LGV	Freight	Business	All	2037	0.001	0.012	0.119	1.031	1.031
2	3	4	Car	Other	All	2023	0.001	0.010	0.139	4.394	4.394	

2	3	4	Car	Other	All	2037	0.001	0.010	0.139	4.394	4.394
2	3	4	LGV Freight	Business	All	2037	0.001	0.010	0.139	1.159	1.159
2	3	4	LGV Personal	Other	All	2023	0.001	0.010	0.139	0.158	0.158
2	3	4	Car	Commuting	All	2023	0.001	0.010	0.139	1.888	1.888
2	3	4	LGV Freight	Business	All	2023	0.001	0.010	0.139	1.159	1.159

Displayed 20 warnings of a total of 245 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	3	4	Car	Business	All	2037	2.000	0.001	1503.759	0.283	130.000
2	3	4	LGV Freight	Business	All	2037	2.000	0.001	1503.759	1.159	110.000
2	3	4	OGV1	Business	All	2037	2.000	0.001	1503.759	0.657	85.000
2	3	4	Car	Commuting	All	2023	2.000	0.001	1503.759	1.888	130.000
2	3	4	OGV2	Business	All	2037	2.000	0.001	1503.759	0.462	85.000
2	3	4	Car	Commuting	All	2037	2.000	0.001	1503.759	1.888	130.000
2	3	4	OGV2	Business	All	2023	2.000	0.001	1503.759	0.462	85.000
2	3	4	Car	Other	All	2037	2.000	0.001	1503.759	4.394	130.000
2	3	4	LGV Personal	Other	All	2037	2.000	0.001	1503.759	0.158	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.001	1503.759	1.159	110.000
2	3	4	LGV Personal	Other	All	2023	2.000	0.001	1503.759	0.158	110.000
2	3	4	Car	Other	All	2023	2.000	0.001	1503.759	4.394	130.000
2	3	4	OGV1	Business	All	2023	2.000	0.001	1503.759	0.657	85.000
2	3	4	Car	Business	All	2023	2.000	0.001	1503.759	0.283	130.000
3	2	4	Car	Other	All	2023	2.000	0.001	1388.889	3.906	130.000
3	2	4	Car	Commuting	All	2023	2.000	0.001	1388.889	1.678	130.000

3	1	4	Car	Other	All	2023	2.000	0.001	1388.889	28.806	130.000
3	1	4	OGV1	Business	All	2023	2.000	0.001	1388.889	4.307	85.000
3	2	4	OGV2	Business	All	2023	2.000	0.001	1388.889	0.410	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.001	1388.889	1.037	110.000

Displayed 20 warnings of a total of 308 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal	Other	All	2023	2.000	0.002	1030.928	1.037	110.000
3	1	4	OGV2	Business	All	2037	2.000	0.002	1030.928	3.129	85.000
3	1	4	Car	Commuting	All	2037	2.000	0.002	1030.928	12.795	130.000
3	1	4	Car	Other	All	2037	2.000	0.002	1030.928	29.782	130.000
3	1	4	Car	Other	All	2023	2.000	0.002	1030.928	28.806	130.000
3	1	4	LGV Personal	Other	All	2037	2.000	0.002	1030.928	1.072	110.000
3	1	4	OGV2	Business	All	2023	2.000	0.002	1030.928	3.027	85.000
3	1	4	OGV1	Business	All	2023	2.000	0.002	1030.928	4.307	85.000
3	1	4	Car	Business	All	2037	2.000	0.002	1030.928	1.917	130.000
3	1	4	LGV Freight	Business	All	2023	2.000	0.002	1030.928	7.601	110.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.002	1030.928	7.859	110.000
3	1	4	OGV1	Business	All	2037	2.000	0.002	1030.928	4.453	85.000
3	1	4	Car	Business	All	2023	2.000	0.002	1030.928	1.854	130.000
3	1	4	Car	Commuting	All	2023	2.000	0.002	1030.928	12.375	130.000
3	1	3	LGV Freight	Business	All	2037	2.000	0.002	865.801	80.003	110.000
3	1	3	OGV1	Business	All	2023	2.000	0.002	865.801	43.946	85.000
3	1	3	LGV Personal	Other	All	2023	2.000	0.002	865.801	10.577	110.000

3	1	3	Car	Commuting	All	2023	2.000	0.002	865.801	49.539	130.000
3	1	3	OGV1	Business	All	2037	2.000	0.002	865.801	45.333	85.000
3	1	3	Car	Business	All	2023	2.000	0.002	865.801	31.569	130.000

Displayed 20 warnings of a total of 330 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
1	2	4	Car	Business	All	2023	0.000	0.004
1	3	4	Car	Business	All	2023	0.000	0.004
1	2	4	Car	Business	All	2037	0.000	0.004
1	3	4	Car	Business	All	2037	0.000	0.004
1	2	4	Car	Commuting	All	2023	0.000	0.004
1	3	4	Car	Commuting	All	2023	0.000	0.004
1	2	4	Car	Commuting	All	2037	0.000	0.004
1	3	4	Car	Commuting	All	2037	0.000	0.004
1	2	4	Car	Other	All	2023	0.000	0.004
1	3	4	Car	Other	All	2023	0.000	0.004
1	2	4	Car	Other	All	2037	0.000	0.004
1	3	4	Car	Other	All	2037	0.000	0.004
1	2	4	LGV Personal	Other	All	2023	0.000	0.004
1	3	4	LGV Personal	Other	All	2023	0.000	0.004
1	2	4	LGV Personal	Other	All	2037	0.000	0.004
1	3	4	LGV Personal	Other	All	2037	0.000	0.004
1	2	4	LGV Freight	Business	All	2023	0.000	0.004
1	3	4	LGV Freight	Business	All	2023	0.000	0.004

1 2 4 LGV Freight Business All 2037 0.000 0.004

1 3 4 LGV Freight Business All 2037 0.000 0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484

2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307

2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500

2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500



VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885

2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965

2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106

2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438

2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000

2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000

2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000

2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000



2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000

2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000

2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000

2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898

2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000

2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000

2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537

2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000



2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000

2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000

2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000

2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000

2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000

2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000

2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897

2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000



2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000

2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

	*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076	
2	3.4505	96.4583	0.0912	
3	3.4505	96.4583	0.0912	
4	0.0000	100.0000	0.0000	
5	0.0000	100.0000	0.0000	
6	0.0000	100.0000	0.0000	

7	0.0000	100.0000	0.0000
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8	0.0000	100.0000	0.0000
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FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
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1	59.9940	40.0011	0.0049
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2	3.6784	96.3156	0.0060
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3	3.6784	96.3156	0.0060
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4	0.0000	100.0000	0.0000
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5	0.0000	100.0000	0.0000
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6	0.0000	100.0000	0.0000
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7	0.0000	100.0000	0.0000
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8	0.0000	100.0000	0.0000
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FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
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2011	2011	1	-3.5474	5.2271	72.3684
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2012	2012	1	-3.6255	4.8862	75.5725
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2013	2013	1	-3.7045	4.5823	52.6087
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2014	2014	1	-3.5372	3.9494	137.0370
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2015	2015	1	-3.3037	3.3379	101.4423
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2016	2016	1	-2.7361	2.5097	63.3652
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2017	2017	1	-0.8923	0.5861	47.9912
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2018	2018	1	1.1991	-1.4201	38.8203
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2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172

2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961

2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564

2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762

2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680



2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720

2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641

2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676

2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202

2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

			max	min				
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10	
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10	
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10	
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10	
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10	
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10	
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10	
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10	
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10	
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12	

5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max	min				
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130 10	
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130 10	
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120 10	
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120 10	
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110 10	
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120 10	
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120 10	
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110 10	
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120 10	
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85 12	
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85 12	
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85 12	

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032

2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000

2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454



2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029

2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842

2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960

2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490

2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130

2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299

2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564

2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667



2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362

2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263

2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329

2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765

2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285

2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150

2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275

2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)



\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099

2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073

2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589

2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763

2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407

2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797

2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458

2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000



2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255

2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050

2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333

2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138

2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011

2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000

2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name TUBA-3\_Mickledale\_V4.1\_150B

DM scheme DM





Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0

Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0

Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	30	0	0	13	0	0	0	0
Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0
Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0

Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0

Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0

Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	9	9
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1

Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0

Road	2063	0	66	66
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode Year Time period DO MIN DO SOM



Car	2023 AM peak	1130	1130
Car	2023 PM peak	1218	1218
Car	2023 Inter-peak	3192	3192
Car	2023 Off-peak	463	463
Car	2023 All	6003	6003
Car	2037 AM peak	1169	1169
Car	2037 PM peak	1243	1243
Car	2037 Inter-peak	3290	3290
Car	2037 Off-peak	476	476
Car	2037 All	6179	6179
LGV Personal	2023 AM peak	25	25
LGV Personal	2023 PM peak	24	24
LGV Personal	2023 Inter-peak	77	77
LGV Personal	2023 Off-peak	11	11
LGV Personal	2023 All	137	137
LGV Personal	2037 AM peak	25	25
LGV Personal	2037 PM peak	25	25
LGV Personal	2037 Inter-peak	79	79
LGV Personal	2037 Off-peak	11	11
LGV Personal	2037 All	141	141
LGV Freight	2023 AM peak	180	180
LGV Freight	2023 PM peak	178	178
LGV Freight	2023 Inter-peak	564	564
LGV Freight	2023 Off-peak	82	82
LGV Freight	2023 All	1003	1003

LGV Freight	2037 AM peak	186	186
LGV Freight	2037 PM peak	182	182
LGV Freight	2037 Inter-peak	581	581
LGV Freight	2037 Off-peak	84	84
LGV Freight	2037 All	1033	1033
OGV1	2023 AM peak	51	51
OGV1	2023 PM peak	31	31
OGV1	2023 Inter-peak	319	319
OGV1	2023 Off-peak	46	46
OGV1	2023 All	448	448
OGV1	2037 AM peak	53	53
OGV1	2037 PM peak	32	32
OGV1	2037 Inter-peak	329	329
OGV1	2037 Off-peak	48	48
OGV1	2037 All	462	462
OGV2	2023 AM peak	42	42
OGV2	2023 PM peak	27	27
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	326	326
OGV2	2037 AM peak	44	44
OGV2	2037 PM peak	27	27
OGV2	2037 Inter-peak	231	231
OGV2	2037 Off-peak	33	33
OGV2	2037 All	336	336

All	2023 AM peak	1428	1428
All	2023 PM peak	1478	1478
All	2023 Inter-peak	4376	4376
All	2023 Off-peak	635	635
All	2023 All	7917	7917
All	2037 AM peak	1478	1478
All	2037 PM peak	1509	1509
All	2037 Inter-peak	4511	4511
All	2037 Off-peak	652	652
All	2037 All	8150	8150

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	128	0	930	603	292	0	965	611
Road	2037	101	0	457	383	228	0	475	389

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	424	360	54	438	373	56
Car	2037	302	163	543	312	168	562
LGV Personal	2023	1	25	0	1	26	0
LGV Personal	2037	1	18	6	1	19	7

LGV Freight	2023	4	183	2	4	190	3
LGV Freight	2037	5	131	46	5	136	48
OGV1	2023	0	141	0	0	148	0
OGV1	2037	0	126	0	0	132	0
OGV2	2023	0	168	0	0	176	0
OGV2	2037	0	130	0	0	136	0
All	2023	428	878	57	443	913	59
All	2037	308	568	596	319	591	617
Car	Total	15835	9066	38962	16386	9382	40335
LGV Personal	Total	47	986	583	49	1023	605
LGV Freight	Total	348	7228	4274	361	7498	4433
OGV1	Total	0	7381	0	0	7734	0
OGV2	Total	0	7843	0	0	8204	0
All	Total	16230	32504	43818	16796	33840	45373

#### CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1749	1810	61	35	36	1	71	73	2	106	110	4
Car	2037	1019	1055	35	23	24	1	47	48	2	70	72	2
LGV Personal	2023	62	64	2	1	1	0	2	3	0	4	4	0
LGV Personal	2037	45	47	2	1	1	0	2	2	0	3	3	0
LGV Freight	2023	451	468	17	9	9	0	18	19	1	27	28	1
LGV Freight	2037	329	341	12	8	8	0	15	16	1	23	23	1
OGV1	2023	342	358	16	7	7	0	14	15	1	21	22	1

OGV1	2037	305	320	15	7	7	0	14	15	1	21	22	1
OGV2	2023	407	426	19	8	9	0	17	17	1	25	26	1
OGV2	2037	314	328	14	7	8	0	14	15	1	22	23	1
All	2023	3011	3126	115	60	63	2	122	127	5	182	189	7
All	2024	2959	3072	113	59	61	2	118	122	4	176	183	7
All	2025	2885	2996	110	57	59	2	112	117	4	169	176	6
All	2026	2812	2920	108	54	56	2	107	111	4	161	167	6
All	2027	2740	2845	105	52	54	2	102	106	4	154	160	6
All	2028	2671	2774	103	49	51	2	99	103	4	147	153	6
All	2029	2605	2705	100	47	49	2	94	98	4	141	147	5
All	2030	2507	2604	97	44	45	2	89	92	3	132	138	5
All	2031	2415	2509	93	45	47	2	90	93	3	135	140	5
All	2032	2331	2421	90	46	47	2	91	95	4	137	142	5
All	2033	2253	2341	87	46	48	2	91	95	4	138	143	5
All	2034	2183	2268	85	46	47	2	92	96	4	138	143	5
All	2035	2120	2202	82	46	48	2	92	96	4	139	144	5
All	2036	2063	2143	80	46	48	2	92	96	4	139	144	5
All	2037	2011	2090	78	46	48	2	92	95	4	138	143	5
All	2038	1961	2038	77	46	47	2	92	95	4	137	143	5
All	2039	1918	1993	75	45	47	2	91	95	4	137	142	5
All	2040	1876	1949	74	45	47	2	91	94	4	136	141	5
All	2041	1833	1905	72	45	47	2	89	93	4	134	140	5
All	2042	1800	1871	71	44	46	2	89	92	3	133	138	5
All	2043	1770	1840	70	44	46	2	88	91	3	132	138	5
All	2044	1743	1811	69	44	45	2	87	91	3	131	136	5

All	2045	1718	1786	68	43	45	2	86	90	3	130	135	5
All	2046	1694	1761	67	43	44	2	86	89	3	128	133	5
All	2047	1673	1740	66	42	44	2	85	88	3	127	133	5
All	2048	1654	1720	66	42	44	2	84	87	3	126	131	5
All	2049	1636	1701	65	42	43	2	83	86	3	125	129	5
All	2050	1619	1683	64	41	42	2	82	85	3	123	128	5
All	2051	1619	1683	64	41	42	2	82	86	3	124	129	5
All	2052	1619	1683	64	41	42	2	83	86	3	125	130	5
All	2053	1619	1683	64	40	42	2	83	86	3	126	131	5
All	2054	1619	1683	64	40	41	2	83	86	3	126	131	5
All	2055	1619	1683	64	40	41	2	83	86	3	127	132	5
All	2056	1619	1683	64	39	41	2	83	86	3	127	132	5
All	2057	1619	1683	64	38	40	2	83	86	3	127	132	5
All	2058	1619	1683	64	38	39	2	82	85	3	127	132	5
All	2059	1619	1683	64	37	39	1	82	85	3	126	131	5
All	2060	1619	1683	64	36	38	1	81	84	3	126	131	5
All	2061	1619	1683	64	36	37	1	80	84	3	125	130	5
All	2062	1619	1683	64	35	36	1	79	82	3	124	129	5
All	2063	1619	1683	64	34	35	1	78	81	3	122	127	5
All	2064	1619	1683	64	33	34	1	77	80	3	121	126	5
All	2065	1619	1683	64	32	33	1	76	79	3	119	124	5
All	2066	1619	1683	64	31	32	1	74	77	3	118	122	5
All	2067	1619	1683	64	30	32	1	73	76	3	116	120	5
All	2068	1619	1683	64	29	30	1	72	74	3	114	118	5
All	2069	1619	1683	64	28	30	1	70	73	3	112	116	4

All	2070	1619	1683	64	27	28	1	68	71	3	109	114	4
All	2071	1619	1683	64	26	27	1	67	70	3	107	111	4
All	2072	1619	1683	64	25	26	1	65	68	3	105	109	4
All	2073	1619	1683	64	24	25	1	64	66	3	103	107	4
All	2074	1619	1683	64	24	25	1	62	64	2	100	104	4
All	2075	1619	1683	64	23	23	1	60	63	2	98	102	4
All	2076	1619	1683	64	22	22	1	59	61	2	95	99	4
All	2077	1619	1683	64	21	22	1	57	59	2	93	97	4
All	2078	1619	1683	64	20	21	1	55	57	2	90	94	4
All	2079	1619	1683	64	19	20	1	53	56	2	88	91	3
All	2080	1619	1683	64	18	19	1	52	54	2	85	89	3
All	2081	1619	1683	64	17	18	1	50	52	2	83	86	3
All	2082	1619	1683	64	17	17	1	49	51	2	81	84	3
Car	Total	54733	56639	1906	1106	1145	39	2366	2449	82	3627	3753	126
LGV Personal	Total	2484	2577	93	50	52	2	108	112	4	166	172	6
LGV Freight	Total	18213	18893	679	369	382	14	793	823	30	1219	1264	45
OGV1	Total	17865	18719	854	361	379	17	783	821	37	1206	1263	58
OGV2	Total	18981	19856	875	383	401	18	830	868	38	1277	1336	59
All	Total	112277	116683	4407	2270	2359	89	4881	5073	192	7495	7789	294

#### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	14	14	0	0	0	0	0	0	0	0	0	0
Car	2037	31	32	1	1	1	0	1	1	0	2	2	0

LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	3	3	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	15	15	1	0	0	0	0	0	0	0	0	0
All	2024	19	20	1	0	0	0	0	0	0	1	1	0
All	2025	25	26	1	0	0	0	1	1	0	1	1	0
All	2026	31	33	1	0	0	0	1	1	0	1	1	0
All	2027	36	38	1	1	1	0	1	1	0	2	2	0
All	2028	40	41	1	1	1	0	1	1	0	2	2	0
All	2029	42	43	1	1	1	0	1	1	0	2	2	0
All	2030	42	43	1	1	1	0	1	2	0	2	2	0
All	2031	42	44	1	1	1	0	2	2	0	2	2	0
All	2032	42	43	1	1	1	0	2	2	0	2	3	0
All	2033	41	42	1	1	1	0	2	2	0	3	3	0
All	2034	40	41	1	1	1	0	2	2	0	3	3	0
All	2035	38	40	1	1	1	0	2	2	0	2	3	0
All	2036	36	38	1	1	1	0	2	2	0	2	3	0
All	2037	34	36	1	1	1	0	2	2	0	2	2	0
All	2038	32	33	1	1	1	0	2	2	0	2	2	0
All	2039	30	31	1	1	1	0	1	1	0	2	2	0



All	2040	28	29	1	1	1	0	1	1	0	2	2	0
All	2041	28	29	1	1	1	0	1	1	0	2	2	0
All	2042	28	29	1	1	1	0	1	1	0	2	2	0
All	2043	28	29	1	1	1	0	1	1	0	2	2	0
All	2044	28	29	1	1	1	0	1	1	0	2	2	0
All	2045	28	29	1	1	1	0	1	1	0	2	2	0
All	2046	27	28	1	1	1	0	1	1	0	2	2	0
All	2047	27	28	1	1	1	0	1	1	0	2	2	0
All	2048	26	27	1	1	1	0	1	1	0	2	2	0
All	2049	26	27	1	1	1	0	1	1	0	2	2	0
All	2050	25	26	1	1	1	0	1	1	0	2	2	0
All	2051	25	26	1	1	1	0	1	1	0	2	2	0
All	2052	25	26	1	1	1	0	1	1	0	2	2	0
All	2053	25	26	1	1	1	0	1	1	0	2	2	0
All	2054	25	26	1	1	1	0	1	1	0	2	2	0
All	2055	25	26	1	1	1	0	1	1	0	2	2	0
All	2056	25	26	1	1	1	0	1	1	0	2	2	0
All	2057	25	26	1	1	1	0	1	1	0	2	2	0
All	2058	25	26	1	1	1	0	1	1	0	2	2	0
All	2059	25	26	1	1	1	0	1	1	0	2	2	0
All	2060	25	26	1	1	1	0	1	1	0	2	2	0
All	2061	25	26	1	1	1	0	1	1	0	2	2	0
All	2062	25	26	1	1	1	0	1	1	0	2	2	0
All	2063	25	26	1	1	1	0	1	1	0	2	2	0
All	2064	25	26	1	1	1	0	1	1	0	2	2	0

All	2065	25	26	1	1	1	0	1	1	0	2	2	0
All	2066	25	26	1	1	1	0	1	1	0	2	2	0
All	2067	25	26	1	0	1	0	1	1	0	2	2	0
All	2068	25	26	1	0	0	0	1	1	0	2	2	0
All	2069	25	26	1	0	0	0	1	1	0	2	2	0
All	2070	25	26	1	0	0	0	1	1	0	2	2	0
All	2071	25	26	1	0	0	0	1	1	0	2	2	0
All	2072	25	26	1	0	0	0	1	1	0	2	2	0
All	2073	25	26	1	0	0	0	1	1	0	2	2	0
All	2074	25	26	1	0	0	0	1	1	0	2	2	0
All	2075	25	26	1	0	0	0	1	1	0	2	2	0
All	2076	25	26	1	0	0	0	1	1	0	1	2	0
All	2077	25	26	1	0	0	0	1	1	0	1	1	0
All	2078	25	26	1	0	0	0	1	1	0	1	1	0
All	2079	25	26	1	0	0	0	1	1	0	1	1	0
All	2080	25	26	1	0	0	0	1	1	0	1	1	0
All	2081	25	26	1	0	0	0	1	1	0	1	1	0
All	2082	25	26	1	0	0	0	1	1	0	1	1	0
Car	Total	1514	1567	53	31	32	1	64	66	2	99	102	3
LGV Personal	Total	20	21	1	0	0	0	1	1	0	1	1	0
LGV Freight	Total	147	153	5	3	3	0	6	7	0	10	10	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1682	1741	60	34	35	1	71	74	3	110	114	4

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	533	532	-1	11	11	-0	22	22	-0	32	32	-0
AM peak	2037	349	349	-0	8	8	-0	16	16	-0	24	24	-0
PM peak	2023	521	521	0	10	10	0	21	21	0	32	32	0
PM peak	2037	329	329	0	8	8	0	15	15	0	23	23	0
Inter-peak	2023	1810	1810	0	36	36	0	73	73	0	110	110	0
Inter-peak	2037	1234	1234	0	28	28	0	56	56	0	85	85	0
Off-peak	2023	147	263	116	3	5	2	6	11	5	9	16	7
Off-peak	2037	100	178	79	2	4	2	5	8	4	7	12	5
AM peak	Total	19320	19298	-22	391	390	-0	839	838	-1	1288	1287	-1
PM peak	Total	18102	18102	0	366	366	0	785	785	0	1205	1205	0
Inter-peak	Total	69261	69261	0	1400	1400	0	3014	3014	0	4628	4628	0
Off-peak	Total	5594	10023	4429	113	203	90	243	436	193	374	670	296

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Emissions (tonnes)	cost (€000s, low)	cost (€000s, central)	cost (€000s, high)
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Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
AM peak	2037	7	7	0	0	0	0	0	0	0	0	0	0
PM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
PM peak	2037	7	7	0	0	0	0	0	0	0	0	0	0
Inter-peak	2023	8	8	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	19	19	0	0	0	1	1	0	1	1	0	0
Off-peak	2023	1	1	1	0	0	0	0	0	0	0	0	0
Off-peak	2037	2	3	1	0	0	0	0	0	0	0	0	0
AM peak	Total	328	328	0	7	7	0	14	14	0	21	21	0
PM peak	Total	346	346	0	7	7	0	15	15	0	23	23	0
Inter-peak	Total	932	932	0	19	19	0	40	40	0	61	61	0
Off-peak	Total	75	135	60	2	3	1	3	6	3	5	9	4

#### MODE

User benefits and changes in revenues by mode, all years. E000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	-164	0	-35	-8	0	20
Road	2024	-162	0	-34	-8	0	19
Road	2025	-159	0	-33	-8	0	18
Road	2026	-156	0	-31	-8	0	17
Road	2027	-153	0	-30	-7	0	16
Road	2028	-150	0	-28	-7	0	15
Road	2029	-148	0	-27	-7	0	15

Road	2030	-145	0	-26	-7	0	14
Road	2031	-142	0	-24	-7	0	13
Road	2032	-140	0	-23	-6	0	12
Road	2033	-137	0	-22	-6	0	11
Road	2034	-135	0	-21	-6	0	11
Road	2035	-132	0	-19	-6	0	10
Road	2036	-130	0	-19	-6	0	9
Road	2037	-127	0	-18	-5	0	9
Road	2038	-125	0	-17	-5	0	8
Road	2039	-122	0	-16	-5	0	8
Road	2040	-120	0	-15	-5	0	8
Road	2041	-117	0	-15	-5	0	7
Road	2042	-115	0	-14	-5	0	7
Road	2043	-113	0	-13	-4	0	7
Road	2044	-110	0	-13	-4	0	6
Road	2045	-108	0	-12	-4	0	6
Road	2046	-106	0	-12	-4	0	6
Road	2047	-103	0	-11	-4	0	6
Road	2048	-101	0	-11	-4	0	5
Road	2049	-99	0	-11	-4	0	5
Road	2050	-97	0	-10	-3	0	5
Road	2051	-95	0	-10	-3	0	5
Road	2052	-94	0	-10	-3	0	5
Road	2053	-92	0	-9	-3	0	5
Road	2054	-91	0	-9	-3	0	5

Road	2055	-89	0	-9	-3	0	4
Road	2056	-88	0	-9	-3	0	4
Road	2057	-87	0	-8	-3	0	4
Road	2058	-85	0	-8	-3	0	4
Road	2059	-84	0	-8	-3	0	4
Road	2060	-83	0	-8	-3	0	4
Road	2061	-81	0	-8	-2	0	4
Road	2062	-80	0	-7	-2	0	4
Road	2063	-79	0	-7	-2	0	4
Road	2064	-78	0	-7	-2	0	4
Road	2065	-77	0	-7	-2	0	3
Road	2066	-75	0	-7	-2	0	3
Road	2067	-74	0	-6	-2	0	3
Road	2068	-73	0	-6	-2	0	3
Road	2069	-72	0	-6	-2	0	3
Road	2070	-71	0	-6	-2	0	3
Road	2071	-70	0	-6	-2	0	3
Road	2072	-69	0	-6	-2	0	3
Road	2073	-68	0	-6	-2	0	3
Road	2074	-67	0	-5	-2	0	3
Road	2075	-66	0	-5	-2	0	3
Road	2076	-65	0	-5	-2	0	3
Road	2077	-64	0	-5	-2	0	3
Road	2078	-63	0	-5	-2	0	3
Road	2079	-62	0	-5	-1	0	3

Road	2080	-62	0	-5	-1	0	2
Road	2081	-61	0	-4	-1	0	2
Road	2082	-60	0	-4	-1	0	2
Road	Total	-6045	0	-777	-228	0	403

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Fuel	Non_fuel	Vehicle_Operating_Cost	PT_fares_(pri	Operator_Rev	Indirect	Taxes
Car	2023	-109	0	-19	-1	0	0	11		
Car	2037	-84	0	-9	-1	0	0	4		
LGV Personal	2023	-2	0	-1	0	0	0	0		
LGV Personal	2037	-1	0	-0	0	0	0	0		
LGV Freight	2023	-31	0	-5	-1	0	0	3		
LGV Freight	2037	-24	0	-3	-1	0	0	1		
OGV1	2023	-13	0	-5	-3	0	0	3		
OGV1	2037	-10	0	-3	-2	0	0	2		
OGV2	2023	-10	0	-6	-4	0	0	3		
OGV2	2037	-8	0	-3	-2	0	0	2		
All	2023	-164	0	-35	-8	0	0	20		
All	2037	-127	0	-18	-5	0	0	9		
Car	Total	-4000	0	-392	-31	0	0	189		
LGV Personal	Total	-68	0	-15	0	0	0	8		
LGV Freight	Total	-1128	0	-113	-28	0	0	60		
OGV1	Total	-492	0	-126	-71	0	0	71		

OGV2	Total	-357	0	-131	-99	0	74
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All	Total	-6045	0	-777	-228	0	403
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PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	Fuel	Non_fuel	Taxes		
		PT_fares_(pri		PT_fares_(pri			
All	2023	-164	0	-35	-8	0	20
All	2037	-127	0	-18	-5	0	9
All	Total	-6045	0	-777	-228	0	403

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	Fuel	Non_fuel	Taxes		
		PT_fares_(pri		PT_fares_(pri			
Business	2023	-61	0	-16	-8	0	9
Business	2037	-47	0	-9	-5	0	5
Commuting	2023	-30	0	-6	0	0	3
Commuting	2037	-23	0	-3	0	0	1
Other	2023	-73	0	-14	0	0	8
Other	2037	-57	0	-6	0	0	3
Business	Total	-2250	0	-387	-228	0	213
Commuting	Total	-1101	0	-112	0	0	54
Other	Total	-2694	0	-278	0	0	135



PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
AM peak	2023	-27	0	0	-1	0	-0
AM peak	2037	-21	0	0	-1	0	-0
PM peak	2023	-29	0	0	-1	0	0
PM peak	2037	-22	0	0	-1	0	0
Inter-peak	2023	-92	0	0	-6	0	0
Inter-peak	2037	-72	0	0	-4	0	0
Off-peak	2023	-16	0	-36	-1	0	20
Off-peak	2037	-12	0	-18	-1	0	9
AM peak	Total	-1002	0	4	-29	0	-2
PM peak	Total	-1059	0	0	-21	0	0
Inter-peak	Total	-3396	0	0	-153	0	0
Off-peak	Total	-587	0	-781	-24	0	405

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-80	2	0	0
Car	Commuting	2023	0	0	-4	0	0	0
Car	Commuting	2037	0	0	-5	0	0	0

Car	Commuting	Total	0	0	-270	10	0	0
Car	Other	2023	0	0	-23	0	0	0
Car	Other	2037	0	0	-23	0	0	0
Car	Other	Total	0	0	-1390	29	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-36	1	0	0
LGV Freight	Business	2023	0	0	-4	0	0	0
LGV Freight	Business	2037	0	0	-4	0	0	0
LGV Freight	Business	Total	0	0	-217	5	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-1	0	0	0
OGV1	Business	Total	0	0	-81	1	0	0

OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-59	1	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-8	0	0	0
Car	Business	2037	0	0	-6	0	0	0
Car	Business	Total	0	0	-278	5	0	0
Car	Commuting	2023	0	0	-31	1	0	0
Car	Commuting	2037	0	0	-24	1	0	0
Car	Commuting	Total	0	0	-1142	41	0	0

Car	Other	2023	0	0	-73	1	0	0
Car	Other	2037	0	0	-56	1	0	0
Car	Other	Total	0	0	-2681	55	0	0
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	-2	0	0	0
LGV Personal Other		2037	0	0	-1	0	0	0
LGV Personal Other		Total	0	0	-69	1	0	0
LGV Freight Business		2023	0	0	-31	1	0	0
LGV Freight Business		2037	0	0	-24	1	0	0
LGV Freight Business		Total	0	0	-1152	24	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	-13	0	0	0
OGV1 Business		2037	0	0	-10	0	0	0
OGV1 Business		Total	0	0	-496	4	0	0
OGV1 Commuting		2023	0	0	0	0	0	0

OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-10	0	0	0
OGV2	Business	2037	0	0	-8	0	0	0
OGV2	Business	Total	0	0	-361	4	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-10	0	0	0
Car	Business	2037	0	0	-7	0	0	0
Car	Business	Total	0	0	-327	6	0	0
Car	Commuting	2023	0	0	-37	1	0	0
Car	Commuting	2037	0	0	-27	1	0	0
Car	Commuting	Total	0	0	-1254	41	0	0
Car	Other	2023	0	0	-86	1	0	0

Car	Other	2037	0	0	-62	1	0	0
Car	Other	Total	0	0	-2944	55	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-3	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-85	1	0	0
LGV Freight	Business	2023	0	0	-37	1	0	0
LGV Freight	Business	2037	0	0	-28	1	0	0
LGV Freight	Business	Total	0	0	-1293	25	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-21	0	0	0
OGV1	Business	2037	0	0	-15	0	0	0
OGV1	Business	Total	0	0	-694	5	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0

OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-19	0	0	0
OGV2	Business	2037	0	0	-13	0	0	0
OGV2	Business	Total	0	0	-591	5	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-1	0	0	0	0	0	0
Car	Business	2037	0	-1	0	0	0	0	0	0
Car	Business	Total	0	-79	0	0	0	0	0	0
Car	Commuting	2023	0	-4	0	0	0	0	0	0
Car	Commuting	2037	0	-4	0	0	0	0	0	0
Car	Commuting	Total	0	-260	0	0	0	0	0	0
Car	Other	2023	0	-22	0	0	0	0	0	0
Car	Other	2037	0	-23	0	0	0	0	0	0

Car	Other	Total	0	-1361	0	0	0	0	0	0
LGV Personal Business		2023	0	0	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0	0	0
LGV Personal Other		2023	0	-1	0	0	0	0	0	0
LGV Personal Other		2037	0	-1	0	0	0	0	0	0
LGV Personal Other		Total	0	-35	0	0	0	0	0	0
LGV Freight Business		2023	0	-3	0	0	0	0	0	0
LGV Freight Business		2037	0	-4	0	0	0	0	0	0
LGV Freight Business		Total	0	-212	0	0	0	0	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0	0	0
OGV1 Business		2023	0	-1	0	0	0	0	0	0
OGV1 Business		2037	0	-1	0	0	0	0	0	0
OGV1 Business		Total	0	-80	0	0	0	0	0	0
OGV1 Commuting		2023	0	0	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0	0	0
OGV1 Commuting		Total	0	0	0	0	0	0	0	0



OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-1	0	0	0	0	0	0
OGV2	Business	2037	0	-1	0	0	0	0	0	0
OGV2	Business	Total	0	-58	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-7	0	0	0	0	0	0
Car	Business	2037	0	-6	0	0	0	0	0	0
Car	Business	Total	0	-273	0	0	0	0	0	0
Car	Commuting	2023	0	-30	0	0	0	0	0	0
Car	Commuting	2037	0	-23	0	0	0	0	0	0
Car	Commuting	Total	0	-1101	0	0	0	0	0	0
Car	Other	2023	0	-71	0	0	0	0	0	0
Car	Other	2037	0	-55	0	0	0	0	0	0
Car	Other	Total	0	-2626	0	0	0	0	0	0







OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-19	0	0	0	0	0	0
OGV2	Business	2037	0	-13	0	0	0	0	0	0
OGV2	Business	Total	0	-587	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road -12.54% -15.96%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-1101	-1101
Vehicle operating costs	-112	-112
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-1213</b>	<b>-1213</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-2694	-2694
Vehicle operating costs	-278	-278
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	-2972	-2972

Business	All Modes	Road Personal	Road Freight
Travel Time	-2250	-273	-1977
Vehicle operating costs	-615	-48	-567
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	-2865	-321	-2544

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-2944	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)            -7129

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0
NET IMPACT	857	857

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

Central Government Funding: Non-Transport

Indirect Tax Revenues	-403	-403
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TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-403	-403

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-192
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Economic Efficiency: Consumer Users (Commuting)	-1213
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Economic Efficiency: Consumer Users (Other)	-2972
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Economic Efficiency: Business Users and Providers	-2944
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Wider Public Finances (Indirect Taxation Revenues)	403
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Present Value of Benefits (PVB)	-6918
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Broad Transport Budget	4611
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Present Value of Costs (PVC)	4611
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OVERALL IMPACTS



Net Present Value (NPV)	-11529
Benefit to Cost Ratio (BCR)	-1.500

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-3\_Mickledale\_V4.1\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\MasterFile - 3\_Mickledale\_V4.1\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_Core\_Sens\_15OB\3-Mickledale\_V4.1\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_Core\_Sens\_15OB\3-Mickledale\_V4.1\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs



SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-3\_Mickleale\_V4.1\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1045.68	F	119.37	1
P	1	CEN	33.33	F	119.37	1
C	1	CEN	5278.09	F	119.37	1
L	1	CEN	49.54	F	119.37	1
S	1	CEN	170.96	F	119.37	1

P	1	LOC	47.17	F	119.37	1
C	1	LOC	848.6845	F	119.37	1
L	1	LOC	7.96	F	119.37	1
S	1	LOC	63.9735	F	119.37	1
D	1	LOC	115	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00		23.50	36.90	0.00	0.00	0.00	0.00
2021	1	83.20		23.50	63.10	50.00	0.00	0.00	100.00
2022	1	16.80		35.40	0.00	50.00	0.00	0.00	0.00
2023	1	0.00		17.60	0.00	0.00	0.00	0.00	0.00
2024	1	0.00		0.00	0.00	0.00	0.421	0.00	0.00
2025	1	0.00		0.00	0.00	0.00	0.411	0.00	0.00
2026	1	0.0		0.0	0.0	0.0	0.402	0.0	0.0
2027	1	0.0		0.0	0.0	0.0	0.393	0.0	0.0
2028	1	0.0		0.0	0.0	0.0	1.636	0.0	0.0
2029	1	0.0		0.0	0.0	0.0	0.376	0.0	0.0
2030	1	0.0		0.0	0.0	0.0	0.367	0.0	0.0
2031	1	0.0		0.0	0.0	0.0	0.359	0.0	0.0
2032	1	0.0		0.0	0.0	0.0	0.351	0.0	0.0
2033	1	0.0		0.0	0.0	0.0	8.154	0.0	0.0
2034	1	0.0		0.0	0.0	0.0	0.335	0.0	0.0
2035	1	0.0		0.0	0.0	0.0	0.328	0.0	0.0

2036	1	0.0	0.0	0.0	0.0	0.320	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.303	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.286	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.280	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	28.105	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.267	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.261	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.255	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.249	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	1.634	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.238	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.233	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.228	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.223	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.174	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.213	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.208	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.203	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.199	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.827	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.190	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.186	0.0	0.0	0.0

2061	1	0.0	0.0	0.0	0.0	0.181	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.177	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	36.868	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.170	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.166	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.162	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.158	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.659	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.151	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.148	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.145	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.141	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.842	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.135	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.132	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.129	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.126	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.525	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.120	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.118	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.115	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.113	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30304	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43315	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01720	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.12610	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03580	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt
7	7	1	V	1	0	2023	0.02970	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DM.txt



8	1	2	V	1	0	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
31	3	1	V	1	1	2023	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt

33	5	1	V	1	1	2023	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
56	7	4	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2023 DS.txt
57	1	1	T	1	0	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2023 DM.txt









158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
170	2	1	V	1	0	2037	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
173	5	1	V	1	0	2037	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
175	7	1	V	1	0	2037	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
177	2	2	V	1	0	2037	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
178	3	2	V	1	0	2037	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
180	5	2	V	1	0	2037	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
181	6	2	V	1	0	2037	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt
182	7	2	V	1	0	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DM.txt

183	1	3	V	1	0	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
206	3	2	V	1	1	2037	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
207	4	2	V	1	1	2037	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt



208	5	2	V	1	1	2037	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\V_3_Mickledale_H_4.1 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 AM 2037 DM.txt
232	1	2	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\T_3_Mickledale_H_4.1 PM 2037 DM.txt









333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_High\D_3_Mickledale_H_4.1 AM 2023 DM.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:32:21

ERRORS AND WARNINGS

880 Warnings found in total (including any above)

Warning (112 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.120	0.462	0.462
3	2	4	LGV Freight	Business	All	2037	0.001	0.012	0.120	1.159	1.159
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.120	1.888	1.888
3	2	4	Car	Other	All	2037	0.001	0.012	0.120	4.394	4.394
3	2	4	LGV Personal	Other	All	2037	0.001	0.012	0.120	0.158	0.158
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.120	0.657	0.657
3	2	4	Car	Business	All	2037	0.001	0.012	0.120	0.283	0.283
3	2	4	LGV Personal	Other	All	2023	0.001	0.012	0.123	0.158	0.158
3	2	4	Car	Other	All	2023	0.001	0.012	0.123	4.394	4.394
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.123	0.462	0.462
3	2	4	Car	Business	All	2023	0.001	0.012	0.123	0.283	0.283
3	2	4	LGV Freight	Business	All	2023	0.001	0.012	0.123	1.159	1.159
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.123	0.657	0.657
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.123	1.888	1.888
2	3	4	Car	Business	All	2037	0.001	0.010	0.131	0.314	0.314

2	3	4	Car	Other	All	2037	0.001	0.010	0.131	4.882	4.882
2	3	4	LGV Personal	Other	All	2037	0.001	0.010	0.131	0.176	0.176
2	3	4	LGV Freight	Business	All	2037	0.001	0.010	0.131	1.288	1.288
2	3	4	OGV1	Business	All	2037	0.001	0.010	0.131	0.730	0.730
2	3	4	OGV2	Business	All	2037	0.001	0.010	0.131	0.513	0.513

Displayed 20 warnings of a total of 210 of this type.

Warning (21 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	1	2	OGV2	Business	All	2037	0.072	0.015	4.926	0.666	0.666
2	1	2	LGV Personal	Other	All	2037	0.072	0.015	4.926	0.608	0.608
2	1	2	Car	Business	All	2037	0.072	0.015	4.926	1.560	1.560
2	1	2	Car	Other	All	2037	0.072	0.015	4.926	18.999	18.999
2	1	2	Car	Commuting	All	2037	0.072	0.015	4.926	9.933	9.933
2	1	2	LGV Freight	Business	All	2037	0.072	0.015	4.926	4.454	4.454
2	1	2	OGV1	Business	All	2037	0.072	0.015	4.926	0.781	0.781
2	1	1	Car	Commuting	All	2037	0.058	0.014	4.008	13.031	13.031
2	1	1	LGV Freight	Business	All	2037	0.058	0.014	4.008	5.422	5.422
2	1	1	LGV Personal	Other	All	2037	0.058	0.014	4.008	0.740	0.740
2	1	1	OGV2	Business	All	2037	0.058	0.014	4.008	1.277	1.277
2	1	1	Car	Business	All	2037	0.058	0.014	4.008	2.365	2.365
2	1	1	OGV1	Business	All	2037	0.058	0.014	4.008	1.539	1.539
2	1	1	Car	Other	All	2037	0.058	0.014	4.008	18.625	18.625
2	3	2	LGV Freight	Business	All	2037	0.048	0.015	3.257	19.622	19.622
2	3	2	OGV1	Business	All	2037	0.048	0.015	3.257	3.439	3.439



2	3	2	Car	Business	All	2037	0.048	0.015	3.257	6.870	6.870	
2	3	2	LGV	Personal	Other	All	2037	0.048	0.015	3.257	2.676	2.676
2	3	2	Car	Commuting	All	2037	0.048	0.015	3.257	43.761	43.761	
2	3	2	Car	Other	All	2037	0.048	0.015	3.257	83.697	83.697	

Displayed 20 warnings of a total of 35 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed	
2	3	4	Car	Business	All	2037	2.000	0.001	1503.759	0.314	130.000	
2	3	4	LGV	Freight	Business	All	2037	2.000	0.001	1503.759	1.288	110.000
2	3	4	OGV1	Business	All	2037	2.000	0.001	1503.759	0.730	85.000	
2	3	4	Car	Commuting	All	2023	2.000	0.001	1503.759	2.097	130.000	
2	3	4	OGV2	Business	All	2037	2.000	0.001	1503.759	0.513	85.000	
2	3	4	Car	Commuting	All	2037	2.000	0.001	1503.759	2.097	130.000	
2	3	4	OGV2	Business	All	2023	2.000	0.001	1503.759	0.513	85.000	
2	3	4	Car	Other	All	2037	2.000	0.001	1503.759	4.882	130.000	
2	3	4	LGV	Personal	Other	All	2037	2.000	0.001	1503.759	0.176	110.000
2	3	4	LGV	Freight	Business	All	2023	2.000	0.001	1503.759	1.288	110.000
2	3	4	LGV	Personal	Other	All	2023	2.000	0.001	1503.759	0.176	110.000
2	3	4	Car	Other	All	2023	2.000	0.001	1503.759	4.882	130.000	
2	3	4	OGV1	Business	All	2023	2.000	0.001	1503.759	0.730	85.000	
2	3	4	Car	Business	All	2023	2.000	0.001	1503.759	0.314	130.000	
3	2	4	Car	Other	All	2023	2.000	0.001	1388.889	4.394	130.000	
3	2	4	Car	Commuting	All	2023	2.000	0.001	1388.889	1.888	130.000	
3	1	4	Car	Other	All	2023	2.000	0.001	1388.889	30.270	130.000	

3	1	4	OGV1	Business	All	2023	2.000	0.001	1388.889	4.526	85.000
3	2	4	OGV2	Business	All	2023	2.000	0.001	1388.889	0.462	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.001	1388.889	1.089	110.000

Displayed 20 warnings of a total of 280 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Cal_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal	Other	All	2037	2.000	0.002	1142.857	1.300	110.000
3	1	4	Car	Other	All	2037	2.000	0.002	1142.857	36.129	130.000
3	1	4	OGV2	Business	All	2037	2.000	0.002	1142.857	3.796	85.000
3	1	4	Car	Business	All	2037	2.000	0.002	1142.857	2.326	130.000
3	1	4	Car	Commuting	All	2037	2.000	0.002	1142.857	15.521	130.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.002	1142.857	9.533	110.000
3	1	4	OGV1	Business	All	2037	2.000	0.002	1142.857	5.402	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.002	1030.928	1.089	110.000
3	1	4	Car	Other	All	2023	2.000	0.002	1030.928	30.270	130.000
3	1	4	OGV1	Business	All	2023	2.000	0.002	1030.928	4.526	85.000
3	1	4	Car	Commuting	All	2023	2.000	0.002	1030.928	13.004	130.000
3	1	4	Car	Business	All	2023	2.000	0.002	1030.928	1.949	130.000
3	1	4	LGV Freight	Business	All	2023	2.000	0.002	1030.928	7.987	110.000
3	1	4	OGV2	Business	All	2023	2.000	0.002	1030.928	3.181	85.000
3	1	3	LGV Freight	Business	All	2037	2.000	0.002	865.801	97.782	110.000
3	1	3	OGV1	Business	All	2037	2.000	0.002	865.801	55.407	85.000
3	1	3	Car	Other	All	2037	2.000	0.002	865.801	451.355	130.000
3	1	3	LGV Personal	Other	All	2037	2.000	0.002	865.801	13.336	110.000

3	1	3	Car	Commuting	All	2037	2.000	0.002	865.801	62.458	130.000
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3	1	3	OGV2	Business	All	2037	2.000	0.002	865.801	38.937	85.000
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Displayed 20 warnings of a total of 327 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
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1	2	4	Car	Business	All	2023	0.000	0.004
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1	3	4	Car	Business	All	2023	0.000	0.004
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1	2	4	Car	Business	All	2037	0.000	0.004
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1	3	4	Car	Business	All	2037	0.000	0.004
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1	2	4	Car	Commuting	All	2023	0.000	0.004
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1	3	4	Car	Commuting	All	2023	0.000	0.004
---	---	---	-----	-----------	-----	------	-------	-------

1	2	4	Car	Commuting	All	2037	0.000	0.004
---	---	---	-----	-----------	-----	------	-------	-------

1	3	4	Car	Commuting	All	2037	0.000	0.004
---	---	---	-----	-----------	-----	------	-------	-------

1	2	4	Car	Other	All	2023	0.000	0.004
---	---	---	-----	-------	-----	------	-------	-------

1	3	4	Car	Other	All	2023	0.000	0.004
---	---	---	-----	-------	-----	------	-------	-------

1	2	4	Car	Other	All	2037	0.000	0.004
---	---	---	-----	-------	-----	------	-------	-------

1	3	4	Car	Other	All	2037	0.000	0.004
---	---	---	-----	-------	-----	------	-------	-------

1	2	4	LGV Personal	Other	All	2023	0.000	0.004
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1	3	4	LGV Personal	Other	All	2023	0.000	0.004
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1	2	4	LGV Personal	Other	All	2037	0.000	0.004
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1	3	4	LGV Personal	Other	All	2037	0.000	0.004
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1	2	4	LGV Freight	Business	All	2023	0.000	0.004
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1	3	4	LGV Freight	Business	All	2023	0.000	0.004
---	---	---	-------------	----------	-----	------	-------	-------

1	2	4	LGV Freight	Business	All	2037	0.000	0.004
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1 3 4 LGV Freight Business All 2037 0.000 0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-3\_Mickledale\_V4.1\_150B

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\MasterFile - 3\_Mickledale\_V4.1\_High\_150B.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750



Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0

Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	30	0	0	13	0	0	0	0

Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0
Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0



Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0

Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	9	9

Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12

Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	66	66
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1

Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1187	1187
Car	2023	PM peak	1287	1287
Car	2023	Inter-peak	3356	3356
Car	2023	Off-peak	489	489
Car	2023	All	6319	6319
Car	2037	AM peak	1418	1418
Car	2037	PM peak	1561	1561
Car	2037	Inter-peak	3974	3974
Car	2037	Off-peak	573	573
Car	2037	All	7525	7525
LGV Personal	2023	AM peak	26	26
LGV Personal	2023	PM peak	26	26
LGV Personal	2023	Inter-peak	81	81
LGV Personal	2023	Off-peak	12	12
LGV Personal	2023	All	144	144
LGV Personal	2037	AM peak	31	31

LGV Personal	2037	PM peak	31	31
LGV Personal	2037	Inter-peak	96	96
LGV Personal	2037	Off-peak	14	14
LGV Personal	2037	All	171	171
LGV Freight	2023	AM peak	189	189
LGV Freight	2023	PM peak	188	188
LGV Freight	2023	Inter-peak	593	593
LGV Freight	2023	Off-peak	86	86
LGV Freight	2023	All	1056	1056
LGV Freight	2037	AM peak	226	226
LGV Freight	2037	PM peak	228	228
LGV Freight	2037	Inter-peak	702	702
LGV Freight	2037	Off-peak	101	101
LGV Freight	2037	All	1257	1257
OGV1	2023	AM peak	54	54
OGV1	2023	PM peak	33	33
OGV1	2023	Inter-peak	336	336
OGV1	2023	Off-peak	49	49
OGV1	2023	All	471	471
OGV1	2037	AM peak	64	64
OGV1	2037	PM peak	40	40
OGV1	2037	Inter-peak	398	398
OGV1	2037	Off-peak	57	57
OGV1	2037	All	559	559
OGV2	2023	AM peak	45	45

OGV2	2023 PM peak	28	28
OGV2	2023 Inter-peak	236	236
OGV2	2023 Off-peak	34	34
OGV2	2023 All	343	343
OGV2	2037 AM peak	53	53
OGV2	2037 PM peak	34	34
OGV2	2037 Inter-peak	280	280
OGV2	2037 Off-peak	40	40
OGV2	2037 All	407	407
All	2023 AM peak	1501	1501
All	2023 PM peak	1562	1562
All	2023 Inter-peak	4601	4601
All	2023 Off-peak	670	670
All	2023 All	8334	8334
All	2037 AM peak	1792	1792
All	2037 PM peak	1894	1894
All	2037 Inter-peak	5449	5449
All	2037 Off-peak	786	786
All	2037 All	9920	9920

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	145	0	965	635	326	0	1001	644
Road	2037	222	0	643	469	309	0	669	473

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	400	379	56	414	393	58
Car	2037	358	253	514	371	263	532
LGV Personal	2023	0	27	1	0	27	1
LGV Personal	2037	0	26	12	0	27	13
LGV Freight	2023	2	194	4	2	202	4
LGV Freight	2037	1	188	91	1	196	94
OGV1	2023	0	152	0	0	159	0
OGV1	2037	0	180	0	0	188	0
OGV2	2023	0	183	0	0	192	0
OGV2	2037	0	218	0	0	227	0
All	2023	403	935	61	417	972	63
All	2037	360	865	617	373	902	639
Car	Total	18416	13315	39315	19094	13836	40715
LGV Personal	Total	10	1403	1093	11	1464	1134
LGV Freight	Total	77	10284	8015	80	10735	8318
OGV1	Total	0	10581	0	0	11084	0
OGV2	Total	0	12825	0	0	13368	0
All	Total	18504	48408	48423	19185	50486	50167

CO2\_EMISSIONS\_UNTRADED



Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1747	1807	60	35	36	1	71	73	2	106	109	4
Car	2037	1354	1406	52	31	32	1	62	64	2	93	97	4
LGV Personal	2023	65	67	2	1	1	0	3	3	0	4	4	0
LGV Personal	2037	62	65	3	1	2	0	3	3	0	4	4	0
LGV Freight	2023	475	493	18	10	10	0	19	20	1	29	30	1
LGV Freight	2037	458	478	21	11	11	0	21	22	1	31	33	1
OGV1	2023	367	384	17	7	8	0	15	16	1	22	23	1
OGV1	2037	435	456	21	10	10	0	20	21	1	30	31	1
OGV2	2023	443	464	20	9	9	0	18	19	1	27	28	1
OGV2	2037	528	550	22	12	13	1	24	25	1	36	38	2
All	2023	3097	3215	118	62	64	2	126	130	5	188	195	7
All	2024	3081	3200	118	61	64	2	122	127	5	184	191	7
All	2025	3056	3174	118	60	63	2	119	123	5	179	186	7
All	2026	3035	3154	119	58	60	2	116	120	5	173	180	7
All	2027	3014	3132	119	57	59	2	112	117	4	169	176	7
All	2028	2987	3105	118	54	57	2	110	115	4	165	171	7
All	2029	2966	3085	118	54	56	2	107	112	4	161	167	6
All	2030	2944	3062	118	51	53	2	104	108	4	156	162	6
All	2031	2919	3037	118	54	56	2	108	113	4	163	169	7
All	2032	2902	3020	118	57	59	2	114	118	5	170	177	7
All	2033	2888	3006	118	59	62	2	117	122	5	176	184	7
All	2034	2870	2988	118	60	63	2	121	126	5	181	189	7
All	2035	2859	2978	118	62	65	3	124	129	5	187	195	8

All	2036	2851	2969	118	64	66	3	128	133	5	191	199	8
All	2037	2837	2956	118	65	68	3	130	135	5	195	203	8
All	2038	2800	2917	117	65	68	3	131	136	5	196	204	8
All	2039	2764	2880	115	66	68	3	131	137	5	198	206	8
All	2040	2725	2839	114	66	69	3	132	137	5	197	206	8
All	2041	2690	2803	112	66	69	3	131	137	5	197	205	8
All	2042	2657	2768	111	65	68	3	131	137	5	197	205	8
All	2043	2620	2730	110	65	68	3	130	136	5	196	204	8
All	2044	2590	2698	108	65	68	3	130	135	5	195	203	8
All	2045	2561	2669	107	65	67	3	129	134	5	194	202	8
All	2046	2529	2635	106	64	66	3	128	133	5	192	200	8
All	2047	2502	2607	105	63	66	3	127	132	5	191	199	8
All	2048	2475	2579	104	63	65	3	126	131	5	189	196	8
All	2049	2445	2548	103	62	65	3	124	129	5	186	194	8
All	2050	2419	2520	102	61	64	3	123	128	5	184	191	8
All	2051	2419	2520	102	61	63	3	123	128	5	186	193	8
All	2052	2419	2520	102	61	63	3	124	129	5	187	194	8
All	2053	2419	2520	102	60	63	3	124	129	5	188	195	8
All	2054	2419	2520	102	59	62	2	124	129	5	189	197	8
All	2055	2419	2520	102	59	62	2	124	129	5	189	197	8
All	2056	2419	2520	102	58	61	2	124	129	5	189	197	8
All	2057	2419	2520	102	57	60	2	123	129	5	189	197	8
All	2058	2419	2520	102	57	59	2	123	128	5	189	197	8
All	2059	2419	2520	102	56	58	2	122	127	5	189	197	8
All	2060	2419	2520	102	55	57	2	121	126	5	188	196	8

All	2061	2419	2520	102	53	56	2	120	125	5	186	194	8
All	2062	2419	2520	102	52	54	2	118	123	5	185	193	8
All	2063	2419	2520	102	51	53	2	117	122	5	183	191	8
All	2064	2419	2520	102	49	52	2	115	120	5	181	188	8
All	2065	2419	2520	102	48	50	2	113	118	5	178	186	7
All	2066	2419	2520	102	47	49	2	111	116	5	176	183	7
All	2067	2419	2520	102	45	47	2	109	114	5	173	180	7
All	2068	2419	2520	102	44	45	2	107	111	4	170	177	7
All	2069	2419	2520	102	42	44	2	104	109	4	167	174	7
All	2070	2419	2520	102	41	43	2	102	107	4	163	170	7
All	2071	2419	2520	102	39	41	2	100	104	4	160	167	7
All	2072	2419	2520	102	38	40	2	98	102	4	157	163	7
All	2073	2419	2520	102	37	38	2	95	99	4	153	160	6
All	2074	2419	2520	102	35	37	1	92	96	4	150	156	6
All	2075	2419	2520	102	34	35	1	90	94	4	146	152	6
All	2076	2419	2520	102	32	34	1	87	91	4	143	149	6
All	2077	2419	2520	102	31	32	1	85	88	4	139	145	6
All	2078	2419	2520	102	30	31	1	82	86	3	135	141	6
All	2079	2419	2520	102	28	30	1	80	83	3	131	137	6
All	2080	2419	2520	102	27	28	1	77	80	3	127	133	5
All	2081	2419	2520	102	26	27	1	75	78	3	124	129	5
All	2082	2419	2520	102	25	26	1	73	76	3	120	125	5
Car	Total	70361	73027	2666	1427	1481	54	3067	3183	116	4708	4886	179
LGV Personal	Total	3416	3566	150	69	72	3	150	156	7	231	241	10
LGV Freight	Total	25048	26146	1098	508	530	22	1099	1147	48	1690	1765	74

OGV1	Total	25609	26825	1216	519	543	25	1129	1183	54	1740	1823	83
OGV2	Total	31040	32354	1314	629	655	27	1369	1427	58	2109	2198	89
All	Total	155476	161918	6443	3152	3283	131	6813	7096	283	10478	10913	435

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	14	15	0	0	0	0	0	0	0	0	0	0
Car	2037	30	31	1	1	1	0	1	1	0	2	2	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	5	5	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	15	16	1	0	0	0	0	0	0	0	0	0
All	2024	19	20	1	0	0	0	0	0	1	1	1	0
All	2025	24	25	1	0	0	1	1	0	1	1	1	0
All	2026	29	30	1	0	0	1	1	0	1	1	1	0
All	2027	33	34	1	0	0	1	1	0	1	2	2	0
All	2028	37	38	1	1	1	0	1	1	0	2	2	0
All	2029	39	40	1	1	1	0	1	1	0	2	2	0
All	2030	39	40	1	1	1	0	1	1	0	2	2	0

All	2031	40	41	1	1	1	0	1	2	0	2	2	0
All	2032	40	42	1	1	1	0	2	2	0	2	2	0
All	2033	40	41	1	1	1	0	2	2	0	2	3	0
All	2034	39	41	1	1	1	0	2	2	0	2	3	0
All	2035	38	40	1	1	1	0	2	2	0	3	3	0
All	2036	37	38	1	1	1	0	2	2	0	2	3	0
All	2037	36	37	1	1	1	0	2	2	0	2	3	0
All	2038	34	35	1	1	1	0	2	2	0	2	2	0
All	2039	32	33	1	1	1	0	1	2	0	2	2	0
All	2040	29	31	1	1	1	0	1	1	0	2	2	0
All	2041	30	31	1	1	1	0	1	2	0	2	2	0
All	2042	30	31	1	1	1	0	1	2	0	2	2	0
All	2043	30	31	1	1	1	0	2	2	0	2	2	0
All	2044	30	31	1	1	1	0	2	2	0	2	2	0
All	2045	30	31	1	1	1	0	2	2	0	2	2	0
All	2046	30	31	1	1	1	0	2	2	0	2	2	0
All	2047	30	31	1	1	1	0	2	2	0	2	2	0
All	2048	29	30	1	1	1	0	1	2	0	2	2	0
All	2049	29	30	1	1	1	0	1	2	0	2	2	0
All	2050	28	29	1	1	1	0	1	1	0	2	2	0
All	2051	28	29	1	1	1	0	1	1	0	2	2	0
All	2052	28	29	1	1	1	0	1	1	0	2	2	0
All	2053	28	29	1	1	1	0	1	1	0	2	2	0
All	2054	28	29	1	1	1	0	1	1	0	2	2	0
All	2055	28	29	1	1	1	0	1	1	0	2	2	0

All	2056	28	29	1	1	1	0	1	1	0	2	2	0
All	2057	28	29	1	1	1	0	1	1	0	2	2	0
All	2058	28	29	1	1	1	0	1	1	0	2	2	0
All	2059	28	29	1	1	1	0	1	1	0	2	2	0
All	2060	28	29	1	1	1	0	1	1	0	2	2	0
All	2061	28	29	1	1	1	0	1	1	0	2	2	0
All	2062	28	29	1	1	1	0	1	1	0	2	2	0
All	2063	28	29	1	1	1	0	1	1	0	2	2	0
All	2064	28	29	1	1	1	0	1	1	0	2	2	0
All	2065	28	29	1	1	1	0	1	1	0	2	2	0
All	2066	28	29	1	1	1	0	1	1	0	2	2	0
All	2067	28	29	1	1	1	0	1	1	0	2	2	0
All	2068	28	29	1	1	1	0	1	1	0	2	2	0
All	2069	28	29	1	1	1	0	1	1	0	2	2	0
All	2070	28	29	1	0	1	0	1	1	0	2	2	0
All	2071	28	29	1	0	0	0	1	1	0	2	2	0
All	2072	28	29	1	0	0	0	1	1	0	2	2	0
All	2073	28	29	1	0	0	0	1	1	0	2	2	0
All	2074	28	29	1	0	0	0	1	1	0	2	2	0
All	2075	28	29	1	0	0	0	1	1	0	2	2	0
All	2076	28	29	1	0	0	0	1	1	0	2	2	0
All	2077	28	29	1	0	0	0	1	1	0	2	2	0
All	2078	28	29	1	0	0	0	1	1	0	2	2	0
All	2079	28	29	1	0	0	0	1	1	0	2	2	0
All	2080	28	29	1	0	0	0	1	1	0	1	2	0

All	2081	28	29	1	0	0	0	1	1	0	1	1	0
All	2082	28	29	1	0	0	0	1	1	0	1	1	0
Car	Total	1480	1533	53	30	31	1	63	65	2	97	101	3
LGV Personal	Total	38	40	1	1	1	0	2	2	0	3	3	0
LGV Freight	Total	281	291	11	6	6	0	12	13	0	19	20	1
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1799	1864	65	37	38	1	77	80	3	119	123	4

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	544	543	-1	11	11	-0	22	22	-0	33	33	-0
AM peak	2037	483	486	3	11	11	0	22	22	0	33	33	0
PM peak	2023	533	533	0	11	11	0	22	22	0	32	32	0
PM peak	2037	467	468	1	11	11	0	21	21	0	32	32	0
Inter-peak	2023	1867	1867	0	37	37	0	76	76	0	113	113	0
Inter-peak	2037	1749	1749	0	40	40	0	80	80	0	120	120	0
Off-peak	2023	153	272	119	3	5	2	6	11	5	9	16	7
Off-peak	2037	138	252	114	3	6	3	6	12	5	9	17	8
AM peak	Total	26225	26367	142	532	535	3	1148	1155	6	1765	1775	10
PM peak	Total	25037	25066	29	508	508	1	1096	1097	1	1684	1686	2
Inter-peak	Total	96546	96546	0	1957	1957	0	4234	4234	0	6512	6512	0
Off-peak	Total	7667	13939	6272	155	283	127	336	611	275	517	940	423

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
AM peak	2037	7	7	0	0	0	0	0	0	0	0	0	0
PM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
PM peak	2037	7	7	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	9	9	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	20	20	0	0	0	1	1	0	1	1	0	0
Off-peak	2023	1	1	1	0	0	0	0	0	0	0	0	0
Off-peak	2037	2	3	1	0	0	0	0	0	0	0	0	0
AM peak	Total	348	348	0	7	7	0	15	15	0	23	23	0
PM peak	Total	377	377	0	8	8	0	16	16	0	25	25	0
Inter-peak	Total	995	995	0	20	20	0	43	43	0	66	66	0
Off-peak	Total	79	144	65	2	3	1	3	6	3	5	9	4

#### MODE

User benefits and changes in revenues by mode, all years. E000s.



Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	-181	0	-37	-9	0	20
Road	2024	-172	0	-36	-9	0	20
Road	2025	-164	0	-35	-8	0	19
Road	2026	-156	0	-35	-8	0	19
Road	2027	-148	0	-34	-7	0	18
Road	2028	-141	0	-33	-7	0	18
Road	2029	-135	0	-32	-7	0	17
Road	2030	-128	0	-32	-6	0	17
Road	2031	-122	0	-31	-6	0	17
Road	2032	-116	0	-30	-6	0	16
Road	2033	-110	0	-29	-5	0	16
Road	2034	-104	0	-29	-5	0	15
Road	2035	-98	0	-28	-5	0	15
Road	2036	-93	0	-27	-5	0	14
Road	2037	-88	0	-26	-4	0	14
Road	2038	-86	0	-25	-4	0	14
Road	2039	-85	0	-24	-4	0	13
Road	2040	-84	0	-24	-4	0	12
Road	2041	-83	0	-23	-4	0	12
Road	2042	-81	0	-22	-4	0	11
Road	2043	-80	0	-21	-4	0	11
Road	2044	-79	0	-20	-3	0	11
Road	2045	-78	0	-19	-3	0	10

Road	2046	-76	0	-19	-3	0	10
Road	2047	-75	0	-18	-3	0	9
Road	2048	-74	0	-17	-3	0	9
Road	2049	-73	0	-17	-3	0	9
Road	2050	-72	0	-16	-3	0	8
Road	2051	-71	0	-16	-3	0	8
Road	2052	-70	0	-15	-3	0	8
Road	2053	-70	0	-15	-3	0	8
Road	2054	-69	0	-14	-2	0	8
Road	2055	-68	0	-14	-2	0	7
Road	2056	-68	0	-14	-2	0	7
Road	2057	-67	0	-13	-2	0	7
Road	2058	-66	0	-13	-2	0	7
Road	2059	-66	0	-13	-2	0	7
Road	2060	-65	0	-12	-2	0	7
Road	2061	-64	0	-12	-2	0	7
Road	2062	-64	0	-12	-2	0	6
Road	2063	-63	0	-11	-2	0	6
Road	2064	-62	0	-11	-2	0	6
Road	2065	-62	0	-11	-2	0	6
Road	2066	-61	0	-11	-2	0	6
Road	2067	-61	0	-10	-2	0	6
Road	2068	-60	0	-10	-2	0	6
Road	2069	-60	0	-10	-2	0	5
Road	2070	-59	0	-10	-2	0	5

Road	2071	-59	0	-9	-1	0	5
Road	2072	-58	0	-9	-1	0	5
Road	2073	-58	0	-9	-1	0	5
Road	2074	-57	0	-9	-1	0	5
Road	2075	-57	0	-8	-1	0	5
Road	2076	-56	0	-8	-1	0	5
Road	2077	-56	0	-8	-1	0	5
Road	2078	-55	0	-8	-1	0	4
Road	2079	-55	0	-8	-1	0	4
Road	2080	-54	0	-7	-1	0	4
Road	2081	-54	0	-7	-1	0	4
Road	2082	-53	0	-7	-1	0	4
Road	Total	-4951	0	-1082	-198	0	584

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	-120	0	-19	-1	0	11
Car	2037	-53	0	-13	-0	0	6
LGV Personal	2023	-2	0	-1	0	0	0
LGV Personal	2037	-1	0	-1	0	0	0
LGV Freight	2023	-34	0	-5	-1	0	3
LGV Freight	2037	-17	0	-4	-0	0	2
OGV1	2023	-15	0	-5	-3	0	3

OGV1	2037	-10	0	-4	-1	0	2
OGV2	2023	-11	0	-6	-4	0	3
OGV2	2037	-7	0	-5	-2	0	3
All	2023	-181	0	-37	-9	0	20
All	2037	-88	0	-26	-4	0	14
Car	Total	-3066	0	-509	-23	0	262
LGV Personal	Total	-56	0	-24	0	0	13
LGV Freight	Total	-937	0	-177	-21	0	95
OGV1	Total	-524	0	-178	-65	0	102
OGV2	Total	-367	0	-193	-89	0	111
All	Total	-4951	0	-1082	-198	0	584

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri		PT_fares_(pri		Taxes	
All	2023	-181	0	-37	-9	0	20	
All	2037	-88	0	-26	-4	0	14	
All	Total	-4951	0	-1082	-198	0	584	

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri		PT_fares_(pri		Taxes	
Business	2023	-67	0	-17	-9	0	10	

Business	2037	-38	0	-14	-4	0	8
Commuting	2023	-33	0	-6	0	0	3
Commuting	2037	-7	0	-4	0	0	2
Other	2023	-80	0	-14	0	0	8
Other	2037	-43	0	-9	0	0	5
Business	Total	-2057	0	-571	-198	0	321
Commuting	Total	-525	0	-148	0	0	76
Other	Total	-2370	0	-362	0	0	187

PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-30	0	0	-1	0	-0
AM peak	2037	3	0	-1	0	0	0
PM peak	2023	-32	0	0	-1	0	0
PM peak	2037	11	0	-0	0	0	0
Inter-peak	2023	-101	0	0	-6	0	0
Inter-peak	2037	-87	0	0	-4	0	0
Off-peak	2023	-18	0	-37	-1	0	21
Off-peak	2037	-15	0	-26	-1	0	14
AM peak	Total	-72	0	-20	-4	0	12
PM peak	Total	253	0	-4	2	0	3
Inter-peak	Total	-4374	0	0	-168	0	0
Off-peak	Total	-758	0	-1057	-27	0	570

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-87	24	8	0
Car	Commuting	2023	0	0	-5	0	0	0
Car	Commuting	2037	0	0	-5	3	1	0
Car	Commuting	Total	0	0	-279	138	45	0
Car	Other	2023	0	0	-24	1	0	0
Car	Other	2037	0	0	-25	7	2	0
Car	Other	Total	0	0	-1512	389	116	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-39	11	3	0
LGV Freight	Business	2023	0	0	-4	0	0	0
LGV Freight	Business	2037	0	0	-4	1	0	0
LGV Freight	Business	Total	0	0	-234	66	20	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-2	0	0	0
OGV1	Business	Total	0	0	-90	13	4	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-65	11	3	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-8	0	0	0
Car	Business	2037	0	0	-7	2	1	0
Car	Business	Total	0	0	-350	93	29	0
Car	Commuting	2023	0	0	-34	1	0	0
Car	Commuting	2037	0	0	-27	15	5	0
Car	Commuting	Total	0	0	-1378	645	208	0
Car	Other	2023	0	0	-80	2	0	0
Car	Other	2037	0	0	-67	19	6	0
Car	Other	Total	0	0	-3392	833	246	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-2	0	0	0
LGV Personal	Other	2037	0	0	-2	1	0	0
LGV Personal	Other	Total	0	0	-87	24	7	0
LGV Freight	Business	2023	0	0	-35	1	0	0
LGV Freight	Business	2037	0	0	-29	9	3	0
LGV Freight	Business	Total	0	0	-1447	390	120	0
LGV Freight	Commuting	2023	0	0	0	0	0	0



LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-15	0	0	0
OGV1	Business	2037	0	0	-13	2	1	0
OGV1	Business	Total	0	0	-639	89	26	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-11	0	0	0
OGV2	Business	2037	0	0	-9	2	1	0
OGV2	Business	Total	0	0	-463	73	22	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-10	0	0	0
Car	Business	2037	0	0	-8	2	1	0
Car	Business	Total	0	0	-404	99	32	0
Car	Commuting	2023	0	0	-40	1	0	0
Car	Commuting	2037	0	0	-30	15	5	0
Car	Commuting	Total	0	0	-1513	632	208	0
Car	Other	2023	0	0	-93	2	0	0
Car	Other	2037	0	0	-75	19	6	0
Car	Other	Total	0	0	-3711	813	246	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-3	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-109	21	7	0
LGV Freight	Business	2023	0	0	-41	1	0	0
LGV Freight	Business	2037	0	0	-33	9	3	0
LGV Freight	Business	Total	0	0	-1635	380	120	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0

LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-23	0	0	0
OGV1	Business	2037	0	0	-19	2	1	0
OGV1	Business	Total	0	0	-898	101	31	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-21	0	0	0
OGV2	Business	2037	0	0	-17	3	1	0
OGV2	Business	Total	0	0	-782	100	33	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-1	0	0	0	0	0	0
OGV1	Business	2037	0	-1	0	0	0	0	0	0
OGV1	Business	Total	0	-73	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-1	0	0	0	0	0	0
OGV2	Business	2037	0	-1	0	0	0	0	0	0
OGV2	Business	Total	0	-51	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-15	0	0	0	0	0	0
OGV1	Business	2037	0	-10	0	0	0	0	0	0
OGV1	Business	Total	0	-524	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-11	0	0	0	0	0	0
OGV2	Business	2037	0	-7	0	0	0	0	0	0
OGV2	Business	Total	0	-367	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-10	0	0	0	0	0	0





LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-23	0	0	0	0	0	0
OGV1	Business	2037	0	-16	0	0	0	0	0	0
OGV1	Business	Total	0	-767	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-21	0	0	0	0	0	0
OGV2	Business	2037	0	-13	0	0	0	0	0	0
OGV2	Business	Total	0	-649	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road -12.97% -8.88%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-525	-525
Vehicle operating costs	-148	-148
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-673</b>	<b>-673</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-2370	-2370
Vehicle operating costs	-362	-362
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-2732</b>	<b>-2732</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	-2057	-228	-1829
Vehicle operating costs	-769	-46	-723
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>-2825</b>	<b>-274</b>	<b>-2552</b>

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-2904	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	-6309
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0
NET IMPACT	857	857

Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

Central Government Funding: Non-Transport

Indirect Tax Revenues	-584	-584
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TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-584	-584

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-283
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Economic Efficiency: Consumer Users (Commuting)	-673
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Economic Efficiency: Consumer Users (Other)	-2732
Economic Efficiency: Business Users and Providers	-2904
Wider Public Finances (Indirect Taxation Revenues)	584
Present Value of Benefits (PVB)	-6008
Broad Transport Budget	4611
Present Value of Costs (PVC)	4611
OVERALL IMPACTS	
Net Present Value (NPV)	-10619
Benefit to Cost Ratio (BCR)	-1.303

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-3\_Mickledale\_V4.1\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\MasterFile - 3\_Mickledale\_V4.1\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_High\_15OB\3-Mickeldale\_V4.1\_High\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_High\_15OB\3-Mickeldale\_V4.1\_High\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

ERRORS AND WARNINGS

880 Warnings found in total (including any above)

Warning (112 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.120	0.462	0.462
3	2	4	LGV Freight	Business	All	2037	0.001	0.012	0.120	1.159	1.159
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.120	1.888	1.888
3	2	4	Car	Other	All	2037	0.001	0.012	0.120	4.394	4.394
3	2	4	LGV Personal	Other	All	2037	0.001	0.012	0.120	0.158	0.158
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.120	0.657	0.657
3	2	4	Car	Business	All	2037	0.001	0.012	0.120	0.283	0.283
3	2	4	LGV Personal	Other	All	2023	0.001	0.012	0.123	0.158	0.158
3	2	4	Car	Other	All	2023	0.001	0.012	0.123	4.394	4.394
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.123	0.462	0.462
3	2	4	Car	Business	All	2023	0.001	0.012	0.123	0.283	0.283
3	2	4	LGV Freight	Business	All	2023	0.001	0.012	0.123	1.159	1.159
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.123	0.657	0.657
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.123	1.888	1.888
2	3	4	Car	Business	All	2037	0.001	0.010	0.131	0.314	0.314
2	3	4	Car	Other	All	2037	0.001	0.010	0.131	4.882	4.882
2	3	4	LGV Personal	Other	All	2037	0.001	0.010	0.131	0.176	0.176
2	3	4	LGV Freight	Business	All	2037	0.001	0.010	0.131	1.288	1.288
2	3	4	OGV1	Business	All	2037	0.001	0.010	0.131	0.730	0.730
2	3	4	OGV2	Business	All	2037	0.001	0.010	0.131	0.513	0.513

Displayed 20 warnings of a total of 210 of this type.

Warning (21 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	1	2	OGV2	Business	All	2037	0.072	0.015	4.926	0.666	0.666
2	1	2	LGV Personal	Other	All	2037	0.072	0.015	4.926	0.608	0.608
2	1	2	Car	Business	All	2037	0.072	0.015	4.926	1.560	1.560
2	1	2	Car	Other	All	2037	0.072	0.015	4.926	18.999	18.999
2	1	2	Car	Commuting	All	2037	0.072	0.015	4.926	9.933	9.933
2	1	2	LGV Freight	Business	All	2037	0.072	0.015	4.926	4.454	4.454
2	1	2	OGV1	Business	All	2037	0.072	0.015	4.926	0.781	0.781
2	1	1	Car	Commuting	All	2037	0.058	0.014	4.008	13.031	13.031
2	1	1	LGV Freight	Business	All	2037	0.058	0.014	4.008	5.422	5.422
2	1	1	LGV Personal	Other	All	2037	0.058	0.014	4.008	0.740	0.740

2	1	1	OGV2	Business	All	2037	0.058	0.014	4.008	1.277	1.277
2	1	1	Car	Business	All	2037	0.058	0.014	4.008	2.365	2.365
2	1	1	OGV1	Business	All	2037	0.058	0.014	4.008	1.539	1.539
2	1	1	Car	Other	All	2037	0.058	0.014	4.008	18.625	18.625
2	3	2	LGV Freight	Business	All	2037	0.048	0.015	3.257	19.622	19.622
2	3	2	OGV1	Business	All	2037	0.048	0.015	3.257	3.439	3.439
2	3	2	Car	Business	All	2037	0.048	0.015	3.257	6.870	6.870
2	3	2	LGV Personal	Other	All	2037	0.048	0.015	3.257	2.676	2.676
2	3	2	Car	Commuting	All	2037	0.048	0.015	3.257	43.761	43.761
2	3	2	Car	Other	All	2037	0.048	0.015	3.257	83.697	83.697

Displayed 20 warnings of a total of 35 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Ca_Speed	DM_trips	VOC_Speed
2	3	4	Car	Business	All	2037	2.000	0.001	1503.759	0.314	130.000
2	3	4	LGV Freight	Business	All	2037	2.000	0.001	1503.759	1.288	110.000
2	3	4	OGV1	Business	All	2037	2.000	0.001	1503.759	0.730	85.000
2	3	4	Car	Commuting	All	2023	2.000	0.001	1503.759	2.097	130.000
2	3	4	OGV2	Business	All	2037	2.000	0.001	1503.759	0.513	85.000
2	3	4	Car	Commuting	All	2037	2.000	0.001	1503.759	2.097	130.000
2	3	4	OGV2	Business	All	2023	2.000	0.001	1503.759	0.513	85.000
2	3	4	Car	Other	All	2037	2.000	0.001	1503.759	4.882	130.000
2	3	4	LGV Personal	Other	All	2037	2.000	0.001	1503.759	0.176	110.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.001	1503.759	1.288	110.000
2	3	4	LGV Personal	Other	All	2023	2.000	0.001	1503.759	0.176	110.000
2	3	4	Car	Other	All	2023	2.000	0.001	1503.759	4.882	130.000
2	3	4	OGV1	Business	All	2023	2.000	0.001	1503.759	0.730	85.000
2	3	4	Car	Business	All	2023	2.000	0.001	1503.759	0.314	130.000
3	2	4	Car	Other	All	2023	2.000	0.001	1388.889	4.394	130.000
3	2	4	Car	Commuting	All	2023	2.000	0.001	1388.889	1.888	130.000
3	1	4	Car	Other	All	2023	2.000	0.001	1388.889	30.270	130.000
3	1	4	OGV1	Business	All	2023	2.000	0.001	1388.889	4.526	85.000
3	2	4	OGV2	Business	All	2023	2.000	0.001	1388.889	0.462	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.001	1388.889	1.089	110.000

Displayed 20 warnings of a total of 280 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal	Other	All	2037	2.000	0.002	1142.857	1.300	110.000
3	1	4	Car	Other	All	2037	2.000	0.002	1142.857	36.129	130.000
3	1	4	OGV2	Business	All	2037	2.000	0.002	1142.857	3.796	85.000
3	1	4	Car	Business	All	2037	2.000	0.002	1142.857	2.326	130.000
3	1	4	Car	Commuting	All	2037	2.000	0.002	1142.857	15.521	130.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.002	1142.857	9.533	110.000



3	1	4	OGV1	Business	All	2037	2.000	0.002	1142.857	5.402	85.000
3	1	4	LGV Personal	Other	All	2023	2.000	0.002	1030.928	1.089	110.000
3	1	4	Car	Other	All	2023	2.000	0.002	1030.928	30.270	130.000
3	1	4	OGV1	Business	All	2023	2.000	0.002	1030.928	4.526	85.000
3	1	4	Car	Commuting	All	2023	2.000	0.002	1030.928	13.004	130.000
3	1	4	Car	Business	All	2023	2.000	0.002	1030.928	1.949	130.000
3	1	4	LGV Freight	Business	All	2023	2.000	0.002	1030.928	7.987	110.000
3	1	4	OGV2	Business	All	2023	2.000	0.002	1030.928	3.181	85.000
3	1	3	LGV Freight	Business	All	2037	2.000	0.002	865.801	97.782	110.000
3	1	3	OGV1	Business	All	2037	2.000	0.002	865.801	55.407	85.000
3	1	3	Car	Other	All	2037	2.000	0.002	865.801	451.355	130.000
3	1	3	LGV Personal	Other	All	2037	2.000	0.002	865.801	13.336	110.000
3	1	3	Car	Commuting	All	2037	2.000	0.002	865.801	62.458	130.000
3	1	3	OGV2	Business	All	2037	2.000	0.002	865.801	38.937	85.000

Displayed 20 warnings of a total of 327 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin Destination Time\_slice Veh\_type Purpose Person\_type Year DM\_time DS\_time

1	2	4	Car	Business	All	2023	0.000	0.004
1	3	4	Car	Business	All	2023	0.000	0.004
1	2	4	Car	Business	All	2037	0.000	0.004
1	3	4	Car	Business	All	2037	0.000	0.004
1	2	4	Car	Commuting	All	2023	0.000	0.004
1	3	4	Car	Commuting	All	2023	0.000	0.004
1	2	4	Car	Commuting	All	2037	0.000	0.004
1	3	4	Car	Commuting	All	2037	0.000	0.004
1	2	4	Car	Other	All	2023	0.000	0.004
1	3	4	Car	Other	All	2023	0.000	0.004
1	2	4	Car	Other	All	2037	0.000	0.004
1	3	4	Car	Other	All	2037	0.000	0.004
1	2	4	LGV Personal	Other	All	2023	0.000	0.004
1	3	4	LGV Personal	Other	All	2023	0.000	0.004
1	2	4	LGV Personal	Other	All	2037	0.000	0.004
1	3	4	LGV Personal	Other	All	2037	0.000	0.004
1	2	4	LGV Freight	Business	All	2023	0.000	0.004
1	3	4	LGV Freight	Business	All	2023	0.000	0.004
1	2	4	LGV Freight	Business	All	2037	0.000	0.004
1	3	4	LGV Freight	Business	All	2037	0.000	0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*\*\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332

2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500

2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881

2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105

2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000

2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000

2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000



2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000

2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898

2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000

2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_ylr	End_ylr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000

2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000

2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000

2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000

2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593



2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000

2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049

2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172

2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635

2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000

2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850

2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
		max	min			
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10



2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000

2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340

2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324

2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389

2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019

2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170

2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192

2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329



2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581

2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717

2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*\*\* p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876

2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005

2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206

2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988

2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932

2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000



2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032

2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014

2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079



Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0

Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	30	0	0	13	0	0	0	0
Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0
Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0

Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	9	9
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	66	66



Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1187	1187
Car	2023	PM peak	1287	1287
Car	2023	Inter-peak	3356	3356
Car	2023	Off-peak	489	489
Car	2023	All	6319	6319
Car	2037	AM peak	1418	1418
Car	2037	PM peak	1561	1561
Car	2037	Inter-peak	3974	3974
Car	2037	Off-peak	573	573
Car	2037	All	7525	7525
LGV Personal	2023	AM peak	26	26
LGV Personal	2023	PM peak	26	26
LGV Personal	2023	Inter-peak	81	81
LGV Personal	2023	Off-peak	12	12
LGV Personal	2023	All	144	144
LGV Personal	2037	AM peak	31	31
LGV Personal	2037	PM peak	31	31
LGV Personal	2037	Inter-peak	96	96
LGV Personal	2037	Off-peak	14	14
LGV Personal	2037	All	171	171

LGV Freight	2023	AM peak	189	189
LGV Freight	2023	PM peak	188	188
LGV Freight	2023	Inter-peak	593	593
LGV Freight	2023	Off-peak	86	86
LGV Freight	2023	All	1056	1056
LGV Freight	2037	AM peak	226	226
LGV Freight	2037	PM peak	228	228
LGV Freight	2037	Inter-peak	702	702
LGV Freight	2037	Off-peak	101	101
LGV Freight	2037	All	1257	1257
OGV1	2023	AM peak	54	54
OGV1	2023	PM peak	33	33
OGV1	2023	Inter-peak	336	336
OGV1	2023	Off-peak	49	49
OGV1	2023	All	471	471
OGV1	2037	AM peak	64	64
OGV1	2037	PM peak	40	40
OGV1	2037	Inter-peak	398	398
OGV1	2037	Off-peak	57	57
OGV1	2037	All	559	559
OGV2	2023	AM peak	45	45
OGV2	2023	PM peak	28	28
OGV2	2023	Inter-peak	236	236
OGV2	2023	Off-peak	34	34
OGV2	2023	All	343	343
OGV2	2037	AM peak	53	53
OGV2	2037	PM peak	34	34
OGV2	2037	Inter-peak	280	280
OGV2	2037	Off-peak	40	40
OGV2	2037	All	407	407
All	2023	AM peak	1501	1501
All	2023	PM peak	1562	1562
All	2023	Inter-peak	4601	4601
All	2023	Off-peak	670	670
All	2023	All	8334	8334
All	2037	AM peak	1792	1792
All	2037	PM peak	1894	1894
All	2037	Inter-peak	5449	5449
All	2037	Off-peak	786	786
All	2037	All	9920	9920

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	139	0	979	635	313	0	1016	644
Road	2037	204	0	555	469	284	0	577	473

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	446	379	57	461	392	59
Car	2037	366	197	661	380	205	685
LGV Personal	2023	1	26	0	1	27	0
LGV Personal	2037	1	22	8	1	23	8
LGV Freight	2023	4	193	3	4	200	3
LGV Freight	2037	6	159	56	7	166	59
OGV1	2023	0	149	0	0	156	0
OGV1	2037	0	153	0	0	160	0
OGV2	2023	0	177	0	0	185	0
OGV2	2037	0	158	0	0	164	0
All	2023	451	924	60	466	960	62
All	2037	374	688	726	388	718	752
Car	Total	18750	10639	47191	19440	11054	48872
LGV Personal	Total	57	1164	707	59	1215	734
LGV Freight	Total	417	8536	5184	433	8909	5379
OGV1	Total	0	8782	0	0	9198	0
OGV2	Total	0	9350	0	0	9747	0
All	Total	19224	38472	53082	19932	40123	54985

#### CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1841	1905	64	37	38	1	75	77	3	112	115	4
Car	2037	1236	1283	47	28	30	1	56	59	2	85	88	3
LGV Personal	2023	65	67	2	1	1	0	3	3	0	4	4	0
LGV Personal	2037	54	57	2	1	1	0	2	3	0	4	4	0
LGV Freight	2023	475	493	18	10	10	0	19	20	1	29	30	1
LGV Freight	2037	397	415	18	9	10	0	18	19	1	27	28	1
OGV1	2023	360	377	17	7	8	0	15	15	1	22	23	1
OGV1	2037	370	387	18	8	9	0	17	18	1	25	27	1
OGV2	2023	428	448	20	9	9	0	17	18	1	26	27	1
OGV2	2037	382	398	16	9	9	0	17	18	1	26	27	1
All	2023	3170	3290	120	63	66	2	129	133	5	192	199	7
All	2024	3149	3270	121	63	65	2	125	130	5	188	195	7
All	2025	3105	3224	120	61	64	2	121	125	5	182	189	7
All	2026	3058	3177	119	58	61	2	116	121	5	175	182	7
All	2027	3012	3130	118	57	59	2	112	117	4	169	176	7

All	2028	2967	3084	117	54	56	2	110	114	4	164	170	6
All	2029	2923	3039	116	53	55	2	106	110	4	159	165	6
All	2030	2842	2956	113	50	52	2	101	105	4	150	156	6
All	2031	2766	2877	111	51	53	2	103	107	4	154	160	6
All	2032	2696	2804	109	53	55	2	106	110	4	158	165	6
All	2033	2631	2738	107	54	56	2	107	111	4	161	167	7
All	2034	2574	2679	105	54	56	2	109	113	4	163	169	7
All	2035	2523	2626	104	55	57	2	109	114	4	165	172	7
All	2036	2478	2580	102	55	58	2	111	116	5	166	173	7
All	2037	2438	2540	101	56	58	2	111	116	5	167	174	7
All	2038	2378	2476	99	55	57	2	111	116	5	166	173	7
All	2039	2326	2422	97	55	57	2	110	115	5	166	173	7
All	2040	2274	2369	95	55	57	2	110	114	5	165	172	7
All	2041	2223	2315	92	55	57	2	108	113	5	163	170	7
All	2042	2183	2273	91	54	56	2	108	112	4	161	168	7
All	2043	2146	2236	89	53	56	2	107	111	4	161	167	7
All	2044	2113	2201	88	53	55	2	106	110	4	159	166	7
All	2045	2083	2170	87	53	55	2	105	109	4	157	164	7
All	2046	2054	2139	86	52	54	2	104	108	4	156	162	6
All	2047	2029	2114	85	51	53	2	103	107	4	155	161	6
All	2048	2006	2090	84	51	53	2	102	106	4	153	159	6
All	2049	1984	2067	83	50	53	2	101	105	4	151	157	6
All	2050	1963	2045	82	50	52	2	100	104	4	149	155	6
All	2051	1963	2045	82	49	51	2	100	104	4	151	157	6
All	2052	1963	2045	82	49	51	2	100	105	4	152	158	6
All	2053	1963	2045	82	49	51	2	101	105	4	152	159	6
All	2054	1963	2045	82	48	50	2	101	105	4	153	160	6
All	2055	1963	2045	82	48	50	2	101	105	4	154	160	6
All	2056	1963	2045	82	47	49	2	100	105	4	154	160	6
All	2057	1963	2045	82	47	49	2	100	104	4	154	160	6
All	2058	1963	2045	82	46	48	2	100	104	4	153	160	6
All	2059	1963	2045	82	45	47	2	99	103	4	153	160	6
All	2060	1963	2045	82	44	46	2	98	103	4	153	159	6
All	2061	1963	2045	82	43	45	2	97	102	4	151	158	6
All	2062	1963	2045	82	42	44	2	96	100	4	150	156	6
All	2063	1963	2045	82	41	43	2	95	99	4	148	155	6
All	2064	1963	2045	82	40	42	2	93	97	4	147	153	6
All	2065	1963	2045	82	39	41	2	92	96	4	145	151	6
All	2066	1963	2045	82	38	39	2	90	94	4	143	149	6
All	2067	1963	2045	82	37	38	2	89	92	4	140	146	6
All	2068	1963	2045	82	35	37	1	87	90	4	138	144	6
All	2069	1963	2045	82	34	36	1	85	88	4	135	141	6
All	2070	1963	2045	82	33	35	1	83	86	3	133	138	6
All	2071	1963	2045	82	32	33	1	81	84	3	130	135	5

All	2072	1963	2045	82	31	32	1	79	82	3	127	133	5
All	2073	1963	2045	82	30	31	1	77	80	3	124	130	5
All	2074	1963	2045	82	29	30	1	75	78	3	122	127	5
All	2075	1963	2045	82	27	29	1	73	76	3	119	124	5
All	2076	1963	2045	82	26	27	1	71	74	3	116	121	5
All	2077	1963	2045	82	25	26	1	69	72	3	113	117	5
All	2078	1963	2045	82	24	25	1	67	70	3	110	114	5
All	2079	1963	2045	82	23	24	1	65	67	3	107	111	4
All	2080	1963	2045	82	22	23	1	63	65	3	103	108	4
All	2081	1963	2045	82	21	22	1	61	63	3	101	105	4
All	2082	1963	2045	82	20	21	1	59	61	2	98	102	4
Car	Total	64577	67008	2431	1307	1356	49	2800	2906	106	4294	4456	162
LGV Personal	Total	2935	3063	128	59	62	3	128	134	6	197	206	9
LGV Freight	Total	21523	22460	937	436	455	19	940	981	41	1444	1508	63
OGV1	Total	21253	22262	1009	430	451	20	934	978	44	1438	1506	68
OGV2	Total	22630	23590	960	458	477	19	992	1034	42	1527	1592	65
All	Total	132919	138384	5465	2690	2801	111	5795	6033	239	8901	9268	367

#### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	15	15	1	0	0	0	0	0	0	0	0	0
Car	2037	38	40	1	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	3	3	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	15	16	1	0	0	0	0	0	0	0	0	0
All	2024	20	21	1	0	0	0	0	0	1	1	1	0
All	2025	27	28	1	0	0	0	1	1	0	1	1	0
All	2026	34	36	1	0	0	0	1	1	0	1	1	0
All	2027	40	42	1	1	1	0	1	1	0	2	2	0
All	2028	45	46	2	1	1	0	1	1	0	2	2	0
All	2029	47	49	2	1	1	0	2	2	0	2	2	0
All	2030	47	49	2	1	1	0	2	2	0	3	3	0
All	2031	48	50	2	1	1	0	2	2	0	3	3	0
All	2032	48	50	2	1	1	0	2	2	0	3	3	0
All	2033	48	50	2	1	1	0	2	2	0	3	3	0
All	2034	47	49	2	1	1	0	2	2	0	3	3	0
All	2035	46	47	2	1	1	0	2	2	0	3	3	0

All	2036	44	45	2	1	1	0	2	2	0	3	3	0
All	2037	42	43	2	1	1	0	2	2	0	3	3	0
All	2038	39	41	1	1	1	0	2	2	0	3	3	0
All	2039	37	38	1	1	1	0	2	2	0	3	3	0
All	2040	34	35	1	1	1	0	2	2	0	2	3	0
All	2041	34	36	1	1	1	0	2	2	0	3	3	0
All	2042	34	36	1	1	1	0	2	2	0	3	3	0
All	2043	34	36	1	1	1	0	2	2	0	3	3	0
All	2044	34	35	1	1	1	0	2	2	0	3	3	0
All	2045	34	35	1	1	1	0	2	2	0	3	3	0
All	2046	33	34	1	1	1	0	2	2	0	3	3	0
All	2047	33	34	1	1	1	0	2	2	0	2	3	0
All	2048	32	33	1	1	1	0	2	2	0	2	3	0
All	2049	31	32	1	1	1	0	2	2	0	2	2	0
All	2050	30	31	1	1	1	0	2	2	0	2	2	0
All	2051	30	31	1	1	1	0	2	2	0	2	2	0
All	2052	30	31	1	1	1	0	2	2	0	2	2	0
All	2053	30	31	1	1	1	0	2	2	0	2	2	0
All	2054	30	31	1	1	1	0	2	2	0	2	2	0
All	2055	30	31	1	1	1	0	2	2	0	2	2	0
All	2056	30	31	1	1	1	0	2	2	0	2	2	0
All	2057	30	31	1	1	1	0	2	2	0	2	2	0
All	2058	30	31	1	1	1	0	2	2	0	2	2	0
All	2059	30	31	1	1	1	0	2	2	0	2	2	0
All	2060	30	31	1	1	1	0	2	2	0	2	2	0
All	2061	30	31	1	1	1	0	2	2	0	2	2	0
All	2062	30	31	1	1	1	0	1	2	0	2	2	0
All	2063	30	31	1	1	1	0	1	2	0	2	2	0
All	2064	30	31	1	1	1	0	1	1	0	2	2	0
All	2065	30	31	1	1	1	0	1	1	0	2	2	0
All	2066	30	31	1	1	1	0	1	1	0	2	2	0
All	2067	30	31	1	1	1	0	1	1	0	2	2	0
All	2068	30	31	1	1	1	0	1	1	0	2	2	0
All	2069	30	31	1	1	1	0	1	1	0	2	2	0
All	2070	30	31	1	1	1	0	1	1	0	2	2	0
All	2071	30	31	1	1	1	0	1	1	0	2	2	0
All	2072	30	31	1	0	1	0	1	1	0	2	2	0
All	2073	30	31	1	0	0	0	1	1	0	2	2	0
All	2074	30	31	1	0	0	0	1	1	0	2	2	0
All	2075	30	31	1	0	0	0	1	1	0	2	2	0
All	2076	30	31	1	0	0	0	1	1	0	2	2	0
All	2077	30	31	1	0	0	0	1	1	0	2	2	0
All	2078	30	31	1	0	0	0	1	1	0	2	2	0
All	2079	30	31	1	0	0	0	1	1	0	2	2	0



AM peak	Total	390	390	-0	8	8	-0	17	17	-0	26	26	-0
PM peak	Total	425	425	0	9	9	0	18	18	0	28	28	0
Inter-peak	Total	1106	1106	0	23	23	0	47	47	0	73	73	0
Off-peak	Total	88	160	72	2	3	1	4	7	3	6	11	5

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost		Operator_Rev		Indirect
		User_Charges	Time_PT_fares_(pri)	Fuel	Non_fuel_PT_fares_(pri)	Operator_Rev	Taxes	
Road	2023	-173	0	-37	-9	0	21	
Road	2024	-165	0	-36	-9	0	20	
Road	2025	-158	0	-35	-8	0	19	
Road	2026	-150	0	-34	-8	0	19	
Road	2027	-143	0	-33	-7	0	18	
Road	2028	-136	0	-32	-7	0	17	
Road	2029	-129	0	-32	-7	0	17	
Road	2030	-122	0	-30	-6	0	16	
Road	2031	-115	0	-29	-6	0	15	
Road	2032	-109	0	-28	-6	0	14	
Road	2033	-103	0	-26	-5	0	14	
Road	2034	-97	0	-25	-5	0	13	
Road	2035	-91	0	-24	-5	0	13	
Road	2036	-86	0	-23	-5	0	12	
Road	2037	-80	0	-23	-4	0	12	
Road	2038	-79	0	-22	-4	0	11	
Road	2039	-77	0	-21	-4	0	10	
Road	2040	-76	0	-20	-4	0	10	
Road	2041	-74	0	-19	-4	0	9	
Road	2042	-73	0	-18	-4	0	9	
Road	2043	-71	0	-17	-4	0	9	
Road	2044	-70	0	-16	-3	0	8	
Road	2045	-68	0	-16	-3	0	8	
Road	2046	-67	0	-15	-3	0	7	
Road	2047	-65	0	-15	-3	0	7	
Road	2048	-64	0	-14	-3	0	7	
Road	2049	-63	0	-13	-3	0	7	
Road	2050	-61	0	-13	-3	0	6	
Road	2051	-60	0	-13	-3	0	6	
Road	2052	-59	0	-12	-3	0	6	
Road	2053	-58	0	-12	-3	0	6	
Road	2054	-57	0	-12	-2	0	6	
Road	2055	-56	0	-11	-2	0	6	
Road	2056	-56	0	-11	-2	0	6	
Road	2057	-55	0	-11	-2	0	5	



Road	2058	-54	0	-10	-2	0	5
Road	2059	-53	0	-10	-2	0	5
Road	2060	-52	0	-10	-2	0	5
Road	2061	-51	0	-10	-2	0	5
Road	2062	-51	0	-9	-2	0	5
Road	2063	-50	0	-9	-2	0	5
Road	2064	-49	0	-9	-2	0	5
Road	2065	-48	0	-9	-2	0	4
Road	2066	-48	0	-8	-2	0	4
Road	2067	-47	0	-8	-2	0	4
Road	2068	-46	0	-8	-2	0	4
Road	2069	-46	0	-8	-2	0	4
Road	2070	-45	0	-8	-2	0	4
Road	2071	-44	0	-7	-1	0	4
Road	2072	-44	0	-7	-1	0	4
Road	2073	-43	0	-7	-1	0	4
Road	2074	-42	0	-7	-1	0	4
Road	2075	-42	0	-7	-1	0	4
Road	2076	-41	0	-7	-1	0	3
Road	2077	-41	0	-6	-1	0	3
Road	2078	-40	0	-6	-1	0	3
Road	2079	-39	0	-6	-1	0	3
Road	2080	-39	0	-6	-1	0	3
Road	2081	-38	0	-6	-1	0	3
Road	2082	-38	0	-6	-1	0	3
Road	Total	-4299	0	-943	-198	0	489

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Car	2023	-115	0	-20	-1	0	11
Car	2037	-49	0	-12	-0	0	6
LGV Personal	2023	-2	0	-1	0	0	0
LGV Personal	2037	-1	0	-1	0	0	0
LGV Freight	2023	-32	0	-5	-1	0	3
LGV Freight	2037	-15	0	-4	-0	0	2
OGV1	2023	-14	0	-5	-3	0	3
OGV1	2037	-9	0	-3	-1	0	2
OGV2	2023	-10	0	-6	-4	0	3
OGV2	2037	-6	0	-3	-2	0	2
All	2023	-173	0	-37	-9	0	21
All	2037	-80	0	-23	-4	0	12
Car	Total	-2669	0	-483	-23	0	235

LGV Personal	Total	-49	0	-20	0	0	11
LGV Freight	Total	-814	0	-149	-21	0	80
OGV1	Total	-451	0	-147	-65	0	83
OGV2	Total	-317	0	-143	-89	0	81
All	Total	-4299	0	-943	-198	0	489

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri)			PT_fares_(pri)	Taxes	
All	2023	-173	0	-37	-9	0	21	
All	2037	-80	0	-23	-4	0	12	
All	Total	-4299	0	-943	-198	0	489	

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri)			PT_fares_(pri)	Taxes	
Business	2023	-64	0	-17	-9	0	9	
Business	2037	-35	0	-11	-4	0	6	
Commuting	2023	-32	0	-6	0	0	3	
Commuting	2037	-6	0	-3	0	0	2	
Other	2023	-77	0	-14	0	0	8	
Other	2037	-39	0	-8	0	0	4	
Business	Total	-1779	0	-461	-198	0	254	
Commuting	Total	-467	0	-140	0	0	68	
Other	Total	-2053	0	-342	0	0	167	

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri)			PT_fares_(pri)	Taxes	
AM peak	2023	-29	0	0	-1	0	-0	
AM peak	2037	3	0	-1	0	0	0	
PM peak	2023	-30	0	0	-1	0	0	
PM peak	2037	10	0	-0	0	0	0	
Inter-peak	2023	-97	0	0	-6	0	0	
Inter-peak	2037	-80	0	0	-4	0	0	
Off-peak	2023	-17	0	-37	-1	0	21	
Off-peak	2037	-14	0	-22	-1	0	11	
AM peak	Total	-85	0	-18	-4	0	10	
PM peak	Total	186	0	-4	2	0	2	
Inter-peak	Total	-3750	0	0	-168	0	0	
Off-peak	Total	-650	0	-921	-27	0	476	

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-87	24	8	0
Car	Commuting	2023	0	0	-5	0	0	0
Car	Commuting	2037	0	0	-5	3	1	0
Car	Commuting	Total	0	0	-279	138	45	0
Car	Other	2023	0	0	-24	1	0	0
Car	Other	2037	0	0	-25	7	2	0
Car	Other	Total	0	0	-1512	389	116	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-39	11	3	0
LGV Freight	Business	2023	0	0	-4	0	0	0
LGV Freight	Business	2037	0	0	-4	1	0	0
LGV Freight	Business	Total	0	0	-234	66	20	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-2	0	0	0
OGV1	Business	Total	0	0	-90	13	4	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-65	11	3	0
OGV2	Commuting	2023	0	0	0	0	0	0

OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-8	0	0	0
Car	Business	2037	0	0	-6	2	1	0
Car	Business	Total	0	0	-300	78	24	0
Car	Commuting	2023	0	0	-33	1	0	0
Car	Commuting	2037	0	0	-25	14	5	0
Car	Commuting	Total	0	0	-1183	542	175	0
Car	Other	2023	0	0	-77	2	0	0
Car	Other	2037	0	0	-62	18	5	0
Car	Other	Total	0	0	-2910	700	207	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-2	0	0	0
LGV Personal	Other	2037	0	0	-2	1	0	0
LGV Personal	Other	Total	0	0	-75	20	6	0
LGV Freight	Business	2023	0	0	-33	1	0	0
LGV Freight	Business	2037	0	0	-26	8	3	0
LGV Freight	Business	Total	0	0	-1242	328	100	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-14	0	0	0
OGV1	Business	2037	0	0	-12	2	1	0
OGV1	Business	Total	0	0	-548	75	22	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0

OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-10	0	0	0
OGV2	Business	2037	0	0	-8	2	0	0
OGV2	Business	Total	0	0	-397	62	18	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-10	0	0	0
Car	Business	2037	0	0	-8	2	1	0
Car	Business	Total	0	0	-354	85	27	0
Car	Commuting	2023	0	0	-39	1	0	0
Car	Commuting	2037	0	0	-28	13	5	0
Car	Commuting	Total	0	0	-1313	531	175	0
Car	Other	2023	0	0	-91	2	0	0
Car	Other	2037	0	0	-69	17	5	0
Car	Other	Total	0	0	-3215	682	207	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-3	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-93	18	6	0
LGV Freight	Business	2023	0	0	-39	1	0	0
LGV Freight	Business	2037	0	0	-30	8	3	0
LGV Freight	Business	Total	0	0	-1405	321	101	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-22	0	0	0
OGV1	Business	2037	0	0	-17	2	1	0
OGV1	Business	Total	0	0	-776	86	26	0



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-1	0	0	0	0	0	0
OGV1	Business	2037	0	-1	0	0	0	0	0	0
OGV1	Business	Total	0	-73	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-1	0	0	0	0	0	0
OGV2	Business	2037	0	-1	0	0	0	0	0	0
OGV2	Business	Total	0	-51	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-8	0	0	0	0	0	0
Car	Business	2037	0	-4	0	0	0	0	0	0
Car	Business	Total	0	-198	0	0	0	0	0	0
Car	Commuting	2023	0	-32	0	0	0	0	0	0
Car	Commuting	2037	0	-6	0	0	0	0	0	0
Car	Commuting	Total	0	-467	0	0	0	0	0	0
Car	Other	2023	0	-75	0	0	0	0	0	0
Car	Other	2037	0	-38	0	0	0	0	0	0
Car	Other	Total	0	-2004	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	-2	0	0	0	0	0	0
LGV Personal	Other	2037	0	-1	0	0	0	0	0	0
LGV Personal	Other	Total	0	-49	0	0	0	0	0	0
LGV Freight	Business	2023	0	-32	0	0	0	0	0	0
LGV Freight	Business	2037	0	-15	0	0	0	0	0	0





LGV Personal Other	2023	0	-3	0	0	0	0	0	0
LGV Personal Other	2037	0	-1	0	0	0	0	0	0
LGV Personal Other	Total	0	-69	0	0	0	0	0	0
LGV Freight Business	2023	0	-39	0	0	0	0	0	0
LGV Freight Business	2037	0	-19	0	0	0	0	0	0
LGV Freight Business	Total	0	-984	0	0	0	0	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0	0	0
OGV1 Business	2023	0	-22	0	0	0	0	0	0
OGV1 Business	2037	0	-14	0	0	0	0	0	0
OGV1 Business	Total	0	-664	0	0	0	0	0	0
OGV1 Commuting	2023	0	0	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0	0	0
OGV2 Business	2023	0	-20	0	0	0	0	0	0
OGV2 Business	2037	0	-12	0	0	0	0	0	0
OGV2 Business	Total	0	-548	0	0	0	0	0	0
OGV2 Commuting	2023	0	0	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	-12.51%	-8.75%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-467	-467
Vehicle operating costs	-140	-140
User charges	0	0
During Construction & Maintenance	0	0

NET CONSUMER - COMMUTING BENEFITS        -607        -607

Consumer - Other user benefits	All Modes	Road
Travel Time	-2053	-2053
Vehicle operating costs	-342	-342
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	-2395	-2395

Business	All Modes	Road Personal	Road Freight
Travel Time	-1779	-198	-1582
Vehicle operating costs	-658	-44	-614
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	-2438	-242	-2195

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-2517	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)        -5519

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0
NET IMPACT	857	857

Central Government Funding: Transport    ALL MODES    Road

Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	-489	-489
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#### TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-489	-489

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	-239
Economic Efficiency: Consumer Users (Commuting)	-607
Economic Efficiency: Consumer Users (Other)	-2395
Economic Efficiency: Business Users and Providers	-2517
Wider Public Finances (Indirect Taxation Revenues)	489
Present Value of Benefits (PVB)	-5269
Broad Transport Budget	4611
Present Value of Costs (PVC)	4611
OVERALL IMPACTS	
Net Present Value (NPV)	-9880
Benefit to Cost Ratio (BCR)	-1.143

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-3\_Mickledale\_V4.1\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\MasterFile - 3\_Mickledale\_V4.1\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_High\_Sens\_15OB\3-Mickledale\_V4.1\_High\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_High\_Sens\_15OB\3-Mickledale\_V4.1\_High\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-3\_Mickleale-LowV4.1\_150B

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	1045.68	F	119.37	1
P	1	CEN	33.33	F	119.37	1
C	1	CEN	5278.09	F	119.37	1
L	1	CEN	49.54	F	119.37	1
S	1	CEN	170.96	F	119.37	1

P	1	LOC	47.17	F	119.37	1
C	1	LOC	848.6845	F	119.37	1
L	1	LOC	7.96	F	119.37	1
S	1	LOC	63.9735	F	119.37	1
D	1	LOC	115	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	23.50	36.90	0.00	0.00	0.00	0.00	0.00
2021	1	83.20	23.50	63.10	50.00	0.00	0.00	0.00	100.00
2022	1	16.80	35.40	0.00	50.00	0.00	0.00	0.00	0.00
2023	1	0.00	17.60	0.00	0.00	0.00	0.00	0.00	0.00
2024	1	0.00	0.00	0.00	0.00	0.421	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.411	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.402	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.393	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	1.636	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.376	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.367	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.359	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.351	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	8.154	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.335	0.0	0.0	0.0

2035	1	0.0	0.0	0.0	0.0	0.328	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.320	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.303	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.286	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.280	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	28.105	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.267	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.261	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.255	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.249	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	1.634	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.238	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.233	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.228	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.223	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.174	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.213	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.208	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.203	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.199	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.827	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.190	0.0	0.0	0.0



2060	1	0.0	0.0	0.0	0.0	0.186	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.181	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.177	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	36.868	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.170	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.166	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.162	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.158	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.659	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.151	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.148	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.145	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.141	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.842	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.135	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.132	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.129	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.126	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.525	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.120	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.118	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.115	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.113	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

\*no. Veh/submode purpose person\_type

1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

\*no. userclasses timeslice type format scenario year factor filename

1	1	1	V	1	0	2023	0.05500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30304	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43315	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01720	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.12610	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03580	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\3-Mickledale\Outputs_V4.1_Low\V_3_Mickledale_I_V4.1 AM 2023 DM.txt

7	7	1	V	1	0	2023	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
31	3	1	V	1	1	2023	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt

32	4	1	V	1	1	2023	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
33	5	1	V	1	1	2023	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt
56	7	4	V	1	1	2023	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2023 DS.txt













182	7	2	V	1	0	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.30304	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.43315	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01720	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.12610	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03580	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.02970	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04215	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.26847	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
206	3	2	V	1	1	2037	0.51348	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt

207	4	2	V	1	1	2037	0.01642	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
208	5	2	V	1	1	2037	0.12038	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.02110	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01800	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05244	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08229	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.59467	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03143	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.20975	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.48823	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.12883	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.07300	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.05130	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\V_3_Mickledale_L_V4.1 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\T_3_Mickledale_L_V4.1 AM 2037 DM.txt









332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\3-Mickeldale\Outputs_V4.1_Low\D_3_Mickledale_L_V4.1 AM 2023 DM.txt

SECTORS

\*mode Sector\_file\_name



Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 09:35:35

ERRORS AND WARNINGS

918 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.123	0.410	0.410	
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.123	1.678	1.678	
3	2	4	LGV	Personal	Other	All	2037	0.001	0.012	0.123	0.141	0.141
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.123	0.584	0.584	
3	2	4	Car	Business	All	2037	0.001	0.012	0.123	0.251	0.251	
3	2	4	Car	Other	All	2037	0.001	0.012	0.123	3.906	3.906	
3	2	4	LGV	Freight	Business	All	2037	0.001	0.012	0.123	1.031	1.031
3	2	4	Car	Business	All	2023	0.001	0.012	0.123	0.251	0.251	
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.123	0.584	0.584	
3	2	4	LGV	Personal	Other	All	2023	0.001	0.012	0.123	0.141	0.141
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.123	0.410	0.410	
3	2	4	LGV	Freight	Business	All	2023	0.001	0.012	0.123	1.031	1.031
3	2	4	Car	Other	All	2023	0.001	0.012	0.123	3.906	3.906	
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.123	1.678	1.678	
2	3	4	Car	Other	All	2023	0.001	0.010	0.134	4.394	4.394	

2	3	4	OGV2	Business	All	2023	0.001	0.010	0.134	0.462	0.462
2	3	4	LGV Freight	Business	All	2023	0.001	0.010	0.134	1.159	1.159
2	3	4	Car	Business	All	2023	0.001	0.010	0.134	0.283	0.283
2	3	4	LGV Personal	Other	All	2023	0.001	0.010	0.134	0.158	0.158
2	3	4	Car	Commuting	All	2023	0.001	0.010	0.134	1.888	1.888

Displayed 20 warnings of a total of 252 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	3	4	Car	Business	All	2037	2.000	0.001	1526.718	0.283	130.000
2	3	4	Car	Other	All	2037	2.000	0.001	1526.718	4.394	130.000
2	3	4	LGV Personal	Other	All	2037	2.000	0.001	1526.718	0.158	110.000
2	3	4	LGV Freight	Business	All	2037	2.000	0.001	1526.718	1.159	110.000
2	3	4	Car	Commuting	All	2037	2.000	0.001	1526.718	1.888	130.000
2	3	4	OGV1	Business	All	2037	2.000	0.001	1526.718	0.657	85.000
2	3	4	OGV2	Business	All	2037	2.000	0.001	1526.718	0.462	85.000
2	3	4	Car	Commuting	All	2023	2.000	0.001	1515.151	1.888	130.000
2	3	4	OGV2	Business	All	2023	2.000	0.001	1515.151	0.462	85.000
2	3	4	Car	Other	All	2023	2.000	0.001	1515.151	4.394	130.000
2	3	4	LGV Personal	Other	All	2023	2.000	0.001	1515.151	0.158	110.000
2	3	4	Car	Business	All	2023	2.000	0.001	1515.151	0.283	130.000
2	3	4	OGV1	Business	All	2023	2.000	0.001	1515.151	0.657	85.000
2	3	4	LGV Freight	Business	All	2023	2.000	0.001	1515.151	1.159	110.000
3	1	4	OGV1	Business	All	2037	2.000	0.001	1398.601	4.015	85.000
3	2	4	LGV Freight	Business	All	2037	2.000	0.001	1398.601	1.031	110.000

3	2	4	OGV1	Business	All	2037	2.000	0.001	1398.601	0.584	85.000
3	2	4	OGV2	Business	All	2037	2.000	0.001	1398.601	0.410	85.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.001	1398.601	7.086	110.000
3	1	4	OGV2	Business	All	2037	2.000	0.001	1398.601	2.822	85.000

Displayed 20 warnings of a total of 308 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal	Other	All	2023	2.000	0.002	1092.896	0.984	110.000
3	1	4	Car	Commuting	All	2023	2.000	0.002	1092.896	11.746	130.000
3	1	4	Car	Business	All	2023	2.000	0.002	1092.896	1.760	130.000
3	1	4	Car	Other	All	2023	2.000	0.002	1092.896	27.341	130.000
3	1	4	LGV Freight	Business	All	2023	2.000	0.002	1092.896	7.214	110.000
3	1	4	OGV2	Business	All	2023	2.000	0.002	1092.896	2.873	85.000
3	1	4	OGV1	Business	All	2023	2.000	0.002	1092.896	4.088	85.000
3	1	4	LGV Freight	Business	All	2037	2.000	0.002	1030.928	7.086	110.000
3	1	4	Car	Commuting	All	2037	2.000	0.002	1030.928	11.536	130.000
3	1	4	Car	Other	All	2037	2.000	0.002	1030.928	26.853	130.000
3	1	4	Car	Business	All	2037	2.000	0.002	1030.928	1.729	130.000
3	1	4	OGV2	Business	All	2037	2.000	0.002	1030.928	2.822	85.000
3	1	4	OGV1	Business	All	2037	2.000	0.002	1030.928	4.015	85.000
3	1	4	LGV Personal	Other	All	2037	2.000	0.002	1030.928	0.966	110.000
3	1	2	Car	Commuting	All	2023	2.000	0.002	877.193	237.327	130.000
3	1	3	Car	Business	All	2023	2.000	0.002	877.193	29.943	130.000
3	1	3	LGV Personal	Other	All	2023	2.000	0.002	877.193	10.032	110.000

3	1	3	Car	Commuting	All	2023	2.000	0.002	877.193	46.988	130.000
3	1	2	LGV Freight	Business	All	2023	2.000	0.002	877.193	106.416	110.000
3	1	2	OGV2	Business	All	2023	2.000	0.002	877.193	15.912	85.000

Displayed 20 warnings of a total of 330 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
1	2	4	Car	Business	All	2023	0.000	0.004
1	3	4	Car	Business	All	2023	0.000	0.004
1	2	4	Car	Business	All	2037	0.000	0.004
1	3	4	Car	Business	All	2037	0.000	0.004
1	2	4	Car	Commuting	All	2023	0.000	0.004
1	3	4	Car	Commuting	All	2023	0.000	0.004
1	2	4	Car	Commuting	All	2037	0.000	0.004
1	3	4	Car	Commuting	All	2037	0.000	0.004
1	2	4	Car	Other	All	2023	0.000	0.004
1	3	4	Car	Other	All	2023	0.000	0.004
1	2	4	Car	Other	All	2037	0.000	0.004
1	3	4	Car	Other	All	2037	0.000	0.004
1	2	4	LGV Personal	Other	All	2023	0.000	0.004
1	3	4	LGV Personal	Other	All	2023	0.000	0.004
1	2	4	LGV Personal	Other	All	2037	0.000	0.004
1	3	4	LGV Personal	Other	All	2037	0.000	0.004
1	2	4	LGV Freight	Business	All	2023	0.000	0.004
1	3	4	LGV Freight	Business	All	2023	0.000	0.004

1 2 4 LGV Freight Business All 2037 0.000 0.004

1 3 4 LGV Freight Business All 2037 0.000 0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-3\_Mickleale-LowV4.1\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\MasterFile - 3\_Mickleale\_V4.1\_Low\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438



Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0

Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted E000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
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Road	2020	30	0	0	13	0	0	0	0
Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0
Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0

Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0

Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2

Road	2028	0	9	9
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1

Road	2053	0	12	12
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	66	66
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0

Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1074	1074
Car	2023	PM peak	1150	1150
Car	2023	Inter-peak	3028	3028
Car	2023	Off-peak	440	440
Car	2023	All	5692	5692
Car	2037	AM peak	1058	1058
Car	2037	PM peak	1123	1123
Car	2037	Inter-peak	2977	2977
Car	2037	Off-peak	434	434
Car	2037	All	5592	5592
LGV Personal	2023	AM peak	23	23
LGV Personal	2023	PM peak	23	23
LGV Personal	2023	Inter-peak	73	73
LGV Personal	2023	Off-peak	11	11
LGV Personal	2023	All	130	130

LGV Personal	2037 AM peak	23	23
LGV Personal	2037 PM peak	22	22
LGV Personal	2037 Inter-peak	72	72
LGV Personal	2037 Off-peak	10	10
LGV Personal	2037 All	128	128
LGV Freight	2023 AM peak	171	171
LGV Freight	2023 PM peak	168	168
LGV Freight	2023 Inter-peak	535	535
LGV Freight	2023 Off-peak	78	78
LGV Freight	2023 All	952	952
LGV Freight	2037 AM peak	169	169
LGV Freight	2037 PM peak	164	164
LGV Freight	2037 Inter-peak	526	526
LGV Freight	2037 Off-peak	77	77
LGV Freight	2037 All	935	935
OGV1	2023 AM peak	49	49
OGV1	2023 PM peak	29	29
OGV1	2023 Inter-peak	303	303
OGV1	2023 Off-peak	44	44
OGV1	2023 All	425	425
OGV1	2037 AM peak	48	48
OGV1	2037 PM peak	29	29
OGV1	2037 Inter-peak	298	298
OGV1	2037 Off-peak	43	43
OGV1	2037 All	418	418

OGV2	2023 AM peak	40	40
OGV2	2023 PM peak	25	25
OGV2	2023 Inter-peak	213	213
OGV2	2023 Off-peak	31	31
OGV2	2023 All	309	309
OGV2	2037 AM peak	40	40
OGV2	2037 PM peak	25	25
OGV2	2037 Inter-peak	209	209
OGV2	2037 Off-peak	31	31
OGV2	2037 All	304	304
All	2023 AM peak	1358	1358
All	2023 PM peak	1395	1395
All	2023 Inter-peak	4151	4151
All	2023 Off-peak	604	604
All	2023 All	7508	7508
All	2037 AM peak	1337	1337
All	2037 PM peak	1363	1363
All	2037 Inter-peak	4082	4082
All	2037 Off-peak	595	595
All	2037 All	7377	7377

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	122	0	869	572	284	0	902	580



Road	2037	94	0	480	347	220	0	498	352
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FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	360	342	50	373	354	52
Car	2037	267	189	382	276	196	395
LGV Personal	2023	0	24	0	0	25	1
LGV Personal	2037	0	19	9	0	20	10
LGV Freight	2023	2	175	4	2	182	4
LGV Freight	2037	1	141	67	1	146	70
OGV1	2023	0	137	0	0	143	0
OGV1	2037	0	134	0	0	141	0
OGV2	2023	0	165	0	0	173	0
OGV2	2037	0	162	0	0	170	0
All	2023	363	842	55	375	876	56
All	2037	268	646	458	278	672	475
Car	Total	14158	10316	29416	14655	10678	30456
LGV Personal	Total	8	1079	817	8	1120	848
LGV Freight	Total	59	7913	5991	62	8209	6215
OGV1	Total	0	8082	0	0	8469	0
OGV2	Total	0	9759	0	0	10210	0
All	Total	14225	37149	36224	14724	38685	37519

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1573	1628	55	31	33	1	64	66	2	95	99	3
Car	2037	1010	1046	35	23	24	1	46	48	2	69	72	2
LGV Personal	2023	58	61	2	1	1	0	2	2	0	4	4	0
LGV Personal	2037	47	49	2	1	1	0	2	2	0	3	3	0
LGV Freight	2023	428	444	16	9	9	0	17	18	1	26	27	1
LGV Freight	2037	343	356	13	8	8	0	16	16	1	24	24	1
OGV1	2023	331	347	16	7	7	0	13	14	1	20	21	1
OGV1	2037	325	341	16	7	8	0	15	16	1	22	23	1
OGV2	2023	399	418	18	8	8	0	16	17	1	24	25	1
OGV2	2037	393	411	18	9	9	0	18	19	1	27	28	1
All	2023	2790	2897	108	56	58	2	113	118	4	169	175	7
All	2024	2736	2841	106	54	56	2	109	113	4	163	169	6
All	2025	2675	2778	104	53	55	2	104	108	4	157	163	6
All	2026	2620	2721	102	50	52	2	100	104	4	150	155	6
All	2027	2565	2665	100	48	50	2	96	99	4	144	150	6
All	2028	2508	2605	98	46	48	2	93	96	4	138	144	5
All	2029	2457	2552	96	44	46	2	89	92	3	133	138	5
All	2030	2406	2500	94	42	44	2	85	88	3	127	132	5
All	2031	2354	2446	92	44	45	2	87	91	3	131	136	5
All	2032	2310	2400	91	45	47	2	90	94	4	136	141	5
All	2033	2269	2358	89	46	48	2	92	96	4	139	144	5
All	2034	2225	2313	88	47	48	2	94	98	4	141	146	6

All	2035	2189	2275	86	47	49	2	95	99	4	143	149	6
All	2036	2155	2240	85	48	50	2	96	100	4	145	150	6
All	2037	2118	2202	84	49	51	2	97	101	4	145	151	6
All	2038	2090	2173	83	49	50	2	98	102	4	146	152	6
All	2039	2064	2146	82	49	51	2	98	102	4	147	153	6
All	2040	2034	2115	81	49	51	2	98	102	4	147	153	6
All	2041	2008	2088	80	49	51	2	98	102	4	147	153	6
All	2042	1984	2063	79	49	51	2	98	102	4	147	153	6
All	2043	1956	2034	78	49	51	2	97	101	4	146	152	6
All	2044	1933	2011	77	49	50	2	97	101	4	146	151	6
All	2045	1912	1989	76	48	50	2	96	100	4	145	150	6
All	2046	1888	1963	76	48	49	2	96	99	4	143	149	6
All	2047	1868	1943	75	47	49	2	95	98	4	142	148	6
All	2048	1848	1922	74	47	49	2	94	98	4	141	146	6
All	2049	1826	1899	73	46	48	2	92	96	4	139	145	6
All	2050	1806	1878	73	46	47	2	92	95	4	137	143	6
All	2051	1806	1878	73	45	47	2	92	96	4	139	144	6
All	2052	1806	1878	73	45	47	2	92	96	4	139	145	6
All	2053	1806	1878	73	45	47	2	92	96	4	140	146	6
All	2054	1806	1878	73	44	46	2	93	96	4	141	147	6
All	2055	1806	1878	73	44	46	2	93	96	4	141	147	6
All	2056	1806	1878	73	43	45	2	92	96	4	141	147	6
All	2057	1806	1878	73	43	45	2	92	96	4	141	147	6
All	2058	1806	1878	73	42	44	2	92	95	4	141	147	6
All	2059	1806	1878	73	42	43	2	91	95	4	141	147	6

All	2060	1806	1878	73	41	42	2	91	94	4	140	146	6
All	2061	1806	1878	73	40	41	2	90	93	4	139	145	6
All	2062	1806	1878	73	39	40	2	88	92	4	138	144	6
All	2063	1806	1878	73	38	40	2	87	91	4	137	142	5
All	2064	1806	1878	73	37	38	1	86	89	3	135	140	5
All	2065	1806	1878	73	36	37	1	84	88	3	133	138	5
All	2066	1806	1878	73	35	36	1	83	86	3	131	136	5
All	2067	1806	1878	73	34	35	1	82	85	3	129	134	5
All	2068	1806	1878	73	33	34	1	80	83	3	127	132	5
All	2069	1806	1878	73	32	33	1	78	81	3	125	130	5
All	2070	1806	1878	73	30	32	1	76	79	3	122	127	5
All	2071	1806	1878	73	29	31	1	75	78	3	120	124	5
All	2072	1806	1878	73	28	29	1	73	76	3	117	122	5
All	2073	1806	1878	73	27	28	1	71	74	3	114	119	5
All	2074	1806	1878	73	26	27	1	69	72	3	112	116	5
All	2075	1806	1878	73	25	26	1	67	70	3	109	114	4
All	2076	1806	1878	73	24	25	1	65	68	3	106	111	4
All	2077	1806	1878	73	23	24	1	63	66	3	104	108	4
All	2078	1806	1878	73	22	23	1	61	64	2	101	105	4
All	2079	1806	1878	73	21	22	1	60	62	2	98	102	4
All	2080	1806	1878	73	20	21	1	58	60	2	95	99	4
All	2081	1806	1878	73	19	20	1	56	58	2	93	96	4
All	2082	1806	1878	73	18	19	1	54	56	2	90	93	4
Car	Total	54286	56190	1904	1099	1138	39	2357	2440	83	3616	3743	127
LGV Personal	Total	2629	2727	98	53	55	2	115	119	4	177	183	7

LGV Freight	Total	19273	19995	721	390	405	15	843	874	32	1296	1344	48
OGV1	Total	19561	20498	937	396	415	19	860	901	41	1325	1388	63
OGV2	Total	23619	24710	1091	478	500	22	1039	1087	48	1600	1674	74
All	Total	119368	124120	4752	2417	2513	96	5214	5422	208	8013	8332	319

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	13	13	0	0	0	0	0	0	0	0	0	0
Car	2037	22	23	1	1	1	0	1	1	0	2	2	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	14	14	0	0	0	0	0	0	0	0	0	0
All	2024	17	18	1	0	0	0	0	0	1	1	1	0
All	2025	21	22	1	0	0	0	1	1	0	1	1	0
All	2026	25	26	1	0	0	0	1	1	0	1	1	0
All	2027	28	29	1	0	0	0	1	1	0	1	1	0
All	2028	31	32	1	0	0	0	1	1	0	1	2	0
All	2029	32	33	1	1	1	0	1	1	0	2	2	0

All	2030	32	33	1	1	1	0	1	1	0	2	2	0
All	2031	32	33	1	1	1	0	1	1	0	2	2	0
All	2032	32	33	1	1	1	0	1	1	0	2	2	0
All	2033	31	32	1	1	1	0	1	1	0	2	2	0
All	2034	30	32	1	1	1	0	1	1	0	2	2	0
All	2035	29	30	1	1	1	0	1	1	0	2	2	0
All	2036	28	29	1	1	1	0	1	1	0	2	2	0
All	2037	26	27	1	1	1	0	1	1	0	2	2	0
All	2038	25	26	1	1	1	0	1	1	0	2	2	0
All	2039	23	24	1	1	1	0	1	1	0	2	2	0
All	2040	22	23	1	1	1	0	1	1	0	2	2	0
All	2041	22	23	1	1	1	0	1	1	0	2	2	0
All	2042	22	23	1	1	1	0	1	1	0	2	2	0
All	2043	23	23	1	1	1	0	1	1	0	2	2	0
All	2044	23	23	1	1	1	0	1	1	0	2	2	0
All	2045	22	23	1	1	1	0	1	1	0	2	2	0
All	2046	22	23	1	1	1	0	1	1	0	2	2	0
All	2047	22	23	1	1	1	0	1	1	0	2	2	0
All	2048	22	23	1	1	1	0	1	1	0	2	2	0
All	2049	21	22	1	1	1	0	1	1	0	2	2	0
All	2050	21	22	1	1	1	0	1	1	0	2	2	0
All	2051	21	22	1	1	1	0	1	1	0	2	2	0
All	2052	21	22	1	1	1	0	1	1	0	2	2	0
All	2053	21	22	1	1	1	0	1	1	0	2	2	0
All	2054	21	22	1	1	1	0	1	1	0	2	2	0

All	2055	21	22	1	1	1	0	1	1	0	2	2	0
All	2056	21	22	1	1	1	0	1	1	0	2	2	0
All	2057	21	22	1	1	1	0	1	1	0	2	2	0
All	2058	21	22	1	1	1	0	1	1	0	2	2	0
All	2059	21	22	1	1	1	0	1	1	0	2	2	0
All	2060	21	22	1	0	1	0	1	1	0	2	2	0
All	2061	21	22	1	0	0	0	1	1	0	2	2	0
All	2062	21	22	1	0	0	0	1	1	0	2	2	0
All	2063	21	22	1	0	0	0	1	1	0	2	2	0
All	2064	21	22	1	0	0	0	1	1	0	2	2	0
All	2065	21	22	1	0	0	0	1	1	0	2	2	0
All	2066	21	22	1	0	0	0	1	1	0	2	2	0
All	2067	21	22	1	0	0	0	1	1	0	1	2	0
All	2068	21	22	1	0	0	0	1	1	0	1	2	0
All	2069	21	22	1	0	0	0	1	1	0	1	1	0
All	2070	21	22	1	0	0	0	1	1	0	1	1	0
All	2071	21	22	1	0	0	0	1	1	0	1	1	0
All	2072	21	22	1	0	0	0	1	1	0	1	1	0
All	2073	21	22	1	0	0	0	1	1	0	1	1	0
All	2074	21	22	1	0	0	0	1	1	0	1	1	0
All	2075	21	22	1	0	0	0	1	1	0	1	1	0
All	2076	21	22	1	0	0	0	1	1	0	1	1	0
All	2077	21	22	1	0	0	0	1	1	0	1	1	0
All	2078	21	22	1	0	0	0	1	1	0	1	1	0
All	2079	21	22	1	0	0	0	1	1	0	1	1	0

All	2080	21	22	1	0	0	0	1	1	0	1	1	0
All	2081	21	22	1	0	0	0	1	1	0	1	1	0
All	2082	21	22	1	0	0	0	1	1	0	1	1	0
Car	Total	1129	1169	40	23	24	1	48	50	2	74	76	3
LGV Personal	Total	29	30	1	1	1	0	1	1	0	2	2	0
LGV Freight	Total	212	220	8	4	5	0	9	10	0	14	15	1
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1370	1419	49	28	29	1	58	60	2	90	93	3

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	492	492	-0	10	10	-0	20	20	-0	30	30	-0
AM peak	2037	364	363	-0	8	8	-0	17	17	-0	25	25	-0
PM peak	2023	476	476	0	10	10	0	19	19	0	29	29	0
PM peak	2037	338	338	0	8	8	0	15	15	0	23	23	0
Inter-peak	2023	1685	1685	0	34	34	0	68	68	0	102	102	0
Inter-peak	2037	1310	1310	0	30	30	0	60	60	0	90	90	0
Off-peak	2023	137	245	108	3	5	2	6	10	4	8	15	7
Off-peak	2037	107	191	84	2	4	2	5	9	4	7	13	6
AM peak	Total	20300	20284	-15	411	411	-0	886	885	-1	1361	1360	-1
PM peak	Total	18695	18695	0	379	379	0	815	815	0	1251	1251	0
Inter-peak	Total	74317	74317	0	1504	1504	0	3248	3248	0	4994	4994	0
Off-peak	Total	6057	10824	4767	123	219	97	265	473	208	407	727	320



NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
AM peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
PM peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
Inter-peak	2023	8	8	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	15	15	0	0	0	1	1	0	1	1	0	0
Off-peak	2023	1	1	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	1	2	1	0	0	0	0	0	0	0	0	0
AM peak	Total	266	266	0	5	5	0	11	11	0	17	17	0
PM peak	Total	279	279	0	6	6	0	12	12	0	18	18	0
Inter-peak	Total	763	763	0	15	15	0	32	32	0	50	50	0
Off-peak	Total	62	111	49	1	2	1	3	5	2	4	7	3

MODE

User benefits and changes in revenues by mode, all years. E000s.

Mode	Year	User		Vehicle_Operating_Cost			Operator_Rev	Indirect
		User_Charges	Time_PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes	
Road	2023	-162	0	-33	-8	0	19	
Road	2024	-159	0	-32	-8	0	18	
Road	2025	-155	0	-31	-7	0	17	
Road	2026	-152	0	-30	-7	0	16	
Road	2027	-149	0	-28	-7	0	16	
Road	2028	-147	0	-27	-7	0	15	
Road	2029	-144	0	-26	-6	0	14	
Road	2030	-142	0	-25	-6	0	14	
Road	2031	-139	0	-24	-6	0	13	
Road	2032	-137	0	-23	-6	0	12	
Road	2033	-135	0	-22	-6	0	12	
Road	2034	-133	0	-21	-5	0	11	
Road	2035	-130	0	-20	-5	0	11	
Road	2036	-128	0	-20	-5	0	10	
Road	2037	-126	0	-19	-5	0	10	
Road	2038	-124	0	-18	-5	0	10	
Road	2039	-123	0	-17	-5	0	9	
Road	2040	-121	0	-17	-4	0	9	
Road	2041	-119	0	-16	-4	0	8	
Road	2042	-117	0	-15	-4	0	8	
Road	2043	-115	0	-15	-4	0	8	
Road	2044	-114	0	-14	-4	0	8	

Road	2045	-112	0	-14	-4	0	7
Road	2046	-110	0	-13	-4	0	7
Road	2047	-108	0	-13	-3	0	7
Road	2048	-107	0	-12	-3	0	6
Road	2049	-105	0	-12	-3	0	6
Road	2050	-103	0	-11	-3	0	6
Road	2051	-102	0	-11	-3	0	6
Road	2052	-101	0	-11	-3	0	6
Road	2053	-100	0	-11	-3	0	6
Road	2054	-99	0	-10	-3	0	5
Road	2055	-98	0	-10	-3	0	5
Road	2056	-97	0	-10	-3	0	5
Road	2057	-96	0	-10	-3	0	5
Road	2058	-95	0	-9	-2	0	5
Road	2059	-94	0	-9	-2	0	5
Road	2060	-94	0	-9	-2	0	5
Road	2061	-93	0	-9	-2	0	5
Road	2062	-92	0	-8	-2	0	5
Road	2063	-91	0	-8	-2	0	4
Road	2064	-90	0	-8	-2	0	4
Road	2065	-89	0	-8	-2	0	4
Road	2066	-89	0	-8	-2	0	4
Road	2067	-88	0	-7	-2	0	4
Road	2068	-87	0	-7	-2	0	4
Road	2069	-86	0	-7	-2	0	4

Road	2070	-86	0	-7	-2	0	4
Road	2071	-85	0	-7	-2	0	4
Road	2072	-84	0	-6	-2	0	4
Road	2073	-83	0	-6	-2	0	4
Road	2074	-83	0	-6	-2	0	3
Road	2075	-82	0	-6	-1	0	3
Road	2076	-81	0	-6	-1	0	3
Road	2077	-81	0	-6	-1	0	3
Road	2078	-80	0	-6	-1	0	3
Road	2079	-79	0	-5	-1	0	3
Road	2080	-78	0	-5	-1	0	3
Road	2081	-78	0	-5	-1	0	3
Road	2082	-77	0	-5	-1	0	3
Road	Total	-6457	0	-817	-209	0	441

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	-107	0	-18	-1	0	10
Car	2037	-84	0	-9	-1	0	4
LGV Personal	2023	-2	0	-1	0	0	0
LGV Personal	2037	-1	0	-0	0	0	0
LGV Freight	2023	-30	0	-5	-1	0	3
LGV Freight	2037	-24	0	-3	-1	0	1

OGV1	2023	-13	0	-5	-2	0	3
OGV1	2037	-10	0	-3	-2	0	2
OGV2	2023	-10	0	-5	-3	0	3
OGV2	2037	-7	0	-4	-2	0	2
All	2023	-162	0	-33	-8	0	19
All	2037	-126	0	-19	-5	0	10
Car	Total	-4274	0	-377	-28	0	193
LGV Personal	Total	-73	0	-17	0	0	9
LGV Freight	Total	-1204	0	-122	-26	0	65
OGV1	Total	-525	0	-139	-65	0	80
OGV2	Total	-381	0	-162	-91	0	93
All	Total	-6457	0	-817	-209	0	441

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	-162	0	-33	-8	0	19
All	2037	-126	0	-19	-5	0	10
All	Total	-6457	0	-817	-209	0	441

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes

Business	2023	-60	0	-16	-8	0	9
Business	2037	-47	0	-10	-5	0	6
Commuting	2023	-30	0	-5	0	0	3
Commuting	2037	-23	0	-2	0	0	1
Other	2023	-72	0	-13	0	0	7
Other	2037	-56	0	-6	0	0	3
Business	Total	-2402	0	-440	-209	0	247
Commuting	Total	-1179	0	-108	0	0	55
Other	Total	-2876	0	-269	0	0	138

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-27	0	0	-1	0	-0
AM peak	2037	-21	0	0	-1	0	-0
PM peak	2023	-29	0	0	-1	0	0
PM peak	2037	-22	0	0	-0	0	0
Inter-peak	2023	-91	0	0	-5	0	0
Inter-peak	2037	-70	0	0	-3	0	0
Off-peak	2023	-16	0	-34	-1	0	19
Off-peak	2037	-13	0	-19	-1	0	10
AM peak	Total	-1069	0	3	-27	0	-2
PM peak	Total	-1138	0	0	-20	0	0
Inter-peak	Total	-3606	0	0	-140	0	0

Off-peak Total -644 0 -820 -23 0 442

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-73	1	0	0
Car	Commuting	2023	0	0	-4	0	0	0
Car	Commuting	2037	0	0	-4	0	0	0
Car	Commuting	Total	0	0	-245	6	0	0
Car	Other	2023	0	0	-21	0	0	0
Car	Other	2037	0	0	-21	0	0	0
Car	Other	Total	0	0	-1263	18	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-33	0	0	0
LGV Freight	Business	2023	0	0	-3	0	0	0
LGV Freight	Business	2037	0	0	-3	0	0	0

LGV Freight	Business	Total	0	0	-197	3	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-1	0	0	0
OGV1	Business	Total	0	0	-74	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-54	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0



MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-7	0	0	0
Car	Business	2037	0	0	-6	0	0	0
Car	Business	Total	0	0	-295	4	0	0
Car	Commuting	2023	0	0	-30	1	0	0
Car	Commuting	2037	0	0	-24	1	0	0
Car	Commuting	Total	0	0	-1209	30	0	0
Car	Other	2023	0	0	-72	1	0	0
Car	Other	2037	0	0	-56	1	0	0
Car	Other	Total	0	0	-2844	41	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-2	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-74	1	0	0
LGV Freight	Business	2023	0	0	-31	0	0	0
LGV Freight	Business	2037	0	0	-24	0	0	0
LGV Freight	Business	Total	0	0	-1222	18	0	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-13	0	0	0
OGV1	Business	2037	0	0	-10	0	0	0
OGV1	Business	Total	0	0	-528	3	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-10	0	0	0
OGV2	Business	2037	0	0	-8	0	0	0
OGV2	Business	Total	0	0	-384	3	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-9	0	0	0
Car	Business	2037	0	0	-7	0	0	0
Car	Business	Total	0	0	-340	4	0	0
Car	Commuting	2023	0	0	-36	1	0	0
Car	Commuting	2037	0	0	-26	1	0	0
Car	Commuting	Total	0	0	-1317	30	0	0
Car	Other	2023	0	0	-83	1	0	0
Car	Other	2037	0	0	-61	1	0	0
Car	Other	Total	0	0	-3097	41	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-3	0	0	0
LGV Personal	Other	2037	0	0	-2	0	0	0
LGV Personal	Other	Total	0	0	-90	1	0	0
LGV Freight	Business	2023	0	0	-37	1	0	0
LGV Freight	Business	2037	0	0	-27	0	0	0
LGV Freight	Business	Total	0	0	-1370	18	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0

LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-20	0	0	0
OGV1	Business	2037	0	0	-15	0	0	0
OGV1	Business	Total	0	0	-733	3	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-19	0	0	0
OGV2	Business	2037	0	0	-13	0	0	0
OGV2	Business	Total	0	0	-637	3	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-1	0	0	0	0	0	0
OGV1	Business	2037	0	-1	0	0	0	0	0	0
OGV1	Business	Total	0	-73	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-1	0	0	0	0	0	0
OGV2	Business	2037	0	-1	0	0	0	0	0	0
OGV2	Business	Total	0	-53	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-13	0	0	0	0	0	0
OGV1	Business	2037	0	-10	0	0	0	0	0	0
OGV1	Business	Total	0	-525	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-10	0	0	0	0	0	0
OGV2	Business	2037	0	-7	0	0	0	0	0	0
OGV2	Business	Total	0	-381	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms





LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-20	0	0	0	0	0	0
OGV1	Business	2037	0	-15	0	0	0	0	0	0
OGV1	Business	Total	0	-730	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-19	0	0	0	0	0	0
OGV2	Business	2037	0	-13	0	0	0	0	0	0
OGV2	Business	Total	0	-634	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road -13.03% -16.29%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-1179	-1179
Vehicle operating costs	-108	-108
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	-1287	-1287

Consumer - Other user benefits	All Modes	Road
Travel Time	-2876	-2876
Vehicle operating costs	-269	-269
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	-3145	-3145

Business	All Modes	Road Personal	Road Freight
Travel Time	-2402	-291	-2111
Vehicle operating costs	-649	-45	-604
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	-3051	-336	-2715

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-3130	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	-7562
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0

NET IMPACT	857	857
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Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

Central Government Funding: Non-Transport

Indirect Tax Revenues	-441	-441
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TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-441	-441

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-208
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Economic Efficiency: Consumer Users (Commuting)	-1287
Economic Efficiency: Consumer Users (Other)	-3145
Economic Efficiency: Business Users and Providers	-3130
Wider Public Finances (Indirect Taxation Revenues)	441
Present Value of Benefits (PVB)	-7329
Broad Transport Budget	4611
Present Value of Costs (PVC)	4611
OVERALL IMPACTS	
Net Present Value (NPV)	-11940
Benefit to Cost Ratio (BCR)	-1.589

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-3\_Mickledale-LowV4.1\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\MasterFile - 3\_Mickledale\_V4.1\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_Low\_15OB\3-Mickeldale\_V4.1\_Low\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickeldale\TUBA\_V4.1\_Low\_15OB\3-Mickeldale\_V4.1\_Low\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

ERRORS AND WARNINGS

918 Warnings found in total (including any above)

Warning (126 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
3	2	4	OGV2	Business	All	2037	0.001	0.012	0.123	0.410	0.410	
3	2	4	Car	Commuting	All	2037	0.001	0.012	0.123	1.678	1.678	
3	2	4	LGV	Personal	Other	All	2037	0.001	0.012	0.123	0.141	0.141
3	2	4	OGV1	Business	All	2037	0.001	0.012	0.123	0.584	0.584	
3	2	4	Car	Business	All	2037	0.001	0.012	0.123	0.251	0.251	
3	2	4	Car	Other	All	2037	0.001	0.012	0.123	3.906	3.906	
3	2	4	LGV	Freight	Business	All	2037	0.001	0.012	0.123	1.031	1.031
3	2	4	Car	Business	All	2023	0.001	0.012	0.123	0.251	0.251	
3	2	4	OGV1	Business	All	2023	0.001	0.012	0.123	0.584	0.584	
3	2	4	LGV	Personal	Other	All	2023	0.001	0.012	0.123	0.141	0.141
3	2	4	OGV2	Business	All	2023	0.001	0.012	0.123	0.410	0.410	
3	2	4	LGV	Freight	Business	All	2023	0.001	0.012	0.123	1.031	1.031
3	2	4	Car	Other	All	2023	0.001	0.012	0.123	3.906	3.906	
3	2	4	Car	Commuting	All	2023	0.001	0.012	0.123	1.678	1.678	
2	3	4	Car	Other	All	2023	0.001	0.010	0.134	4.394	4.394	
2	3	4	OGV2	Business	All	2023	0.001	0.010	0.134	0.462	0.462	
2	3	4	LGV	Freight	Business	All	2023	0.001	0.010	0.134	1.159	1.159
2	3	4	Car	Business	All	2023	0.001	0.010	0.134	0.283	0.283	
2	3	4	LGV	Personal	Other	All	2023	0.001	0.010	0.134	0.158	0.158
2	3	4	Car	Commuting	All	2023	0.001	0.010	0.134	1.888	1.888	

Displayed 20 warnings of a total of 252 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed	
2	3	4	Car	Business	All	2037	2.000	0.001	1526.718	0.283	130.000	
2	3	4	Car	Other	All	2037	2.000	0.001	1526.718	4.394	130.000	
2	3	4	LGV	Personal	Other	All	2037	2.000	0.001	1526.718	0.158	110.000
2	3	4	LGV	Freight	Business	All	2037	2.000	0.001	1526.718	1.159	110.000
2	3	4	Car	Commuting	All	2037	2.000	0.001	1526.718	1.888	130.000	
2	3	4	OGV1	Business	All	2037	2.000	0.001	1526.718	0.657	85.000	
2	3	4	OGV2	Business	All	2037	2.000	0.001	1526.718	0.462	85.000	
2	3	4	Car	Commuting	All	2023	2.000	0.001	1515.151	1.888	130.000	
2	3	4	OGV2	Business	All	2023	2.000	0.001	1515.151	0.462	85.000	
2	3	4	Car	Other	All	2023	2.000	0.001	1515.151	4.394	130.000	



2	3	4	LGV Personal Other	All	2023	2.000	0.001	1515.151	0.158	110.000
2	3	4	Car	Business All	2023	2.000	0.001	1515.151	0.283	130.000
2	3	4	OGV1	Business All	2023	2.000	0.001	1515.151	0.657	85.000
2	3	4	LGV Freight	Business All	2023	2.000	0.001	1515.151	1.159	110.000
3	1	4	OGV1	Business All	2037	2.000	0.001	1398.601	4.015	85.000
3	2	4	LGV Freight	Business All	2037	2.000	0.001	1398.601	1.031	110.000
3	2	4	OGV1	Business All	2037	2.000	0.001	1398.601	0.584	85.000
3	2	4	OGV2	Business All	2037	2.000	0.001	1398.601	0.410	85.000
3	1	4	LGV Freight	Business All	2037	2.000	0.001	1398.601	7.086	110.000
3	1	4	OGV2	Business All	2037	2.000	0.001	1398.601	2.822	85.000

Displayed 20 warnings of a total of 308 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
3	1	4	LGV Personal Other	All	2023	2.000	0.002	1092.896	0.984	110.000	
3	1	4	Car	Commuting All	2023	2.000	0.002	1092.896	11.746	130.000	
3	1	4	Car	Business All	2023	2.000	0.002	1092.896	1.760	130.000	
3	1	4	Car	Other All	2023	2.000	0.002	1092.896	27.341	130.000	
3	1	4	LGV Freight	Business All	2023	2.000	0.002	1092.896	7.214	110.000	
3	1	4	OGV2	Business All	2023	2.000	0.002	1092.896	2.873	85.000	
3	1	4	OGV1	Business All	2023	2.000	0.002	1092.896	4.088	85.000	
3	1	4	LGV Freight	Business All	2037	2.000	0.002	1030.928	7.086	110.000	
3	1	4	Car	Commuting All	2037	2.000	0.002	1030.928	11.536	130.000	
3	1	4	Car	Other All	2037	2.000	0.002	1030.928	26.853	130.000	
3	1	4	Car	Business All	2037	2.000	0.002	1030.928	1.729	130.000	
3	1	4	OGV2	Business All	2037	2.000	0.002	1030.928	2.822	85.000	
3	1	4	OGV1	Business All	2037	2.000	0.002	1030.928	4.015	85.000	
3	1	4	LGV Personal Other	All	2037	2.000	0.002	1030.928	0.966	110.000	
3	1	2	Car	Commuting All	2023	2.000	0.002	877.193	237.327	130.000	
3	1	3	Car	Business All	2023	2.000	0.002	877.193	29.943	130.000	
3	1	3	LGV Personal Other	All	2023	2.000	0.002	877.193	10.032	110.000	
3	1	3	Car	Commuting All	2023	2.000	0.002	877.193	46.988	130.000	
3	1	2	LGV Freight	Business All	2023	2.000	0.002	877.193	106.416	110.000	
3	1	2	OGV2	Business All	2023	2.000	0.002	877.193	15.912	85.000	

Displayed 20 warnings of a total of 330 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
1	2	4	Car	Business All	2023	0.000	0.004	
1	3	4	Car	Business All	2023	0.000	0.004	
1	2	4	Car	Business All	2037	0.000	0.004	
1	3	4	Car	Business All	2037	0.000	0.004	
1	2	4	Car	Commuting All	2023	0.000	0.004	
1	3	4	Car	Commuting All	2023	0.000	0.004	

1	2	4	Car	Commuting	All	2037	0.000	0.004
1	3	4	Car	Commuting	All	2037	0.000	0.004
1	2	4	Car	Other	All	2023	0.000	0.004
1	3	4	Car	Other	All	2023	0.000	0.004
1	2	4	Car	Other	All	2037	0.000	0.004
1	3	4	Car	Other	All	2037	0.000	0.004
1	2	4	LGV Personal	Other	All	2023	0.000	0.004
1	3	4	LGV Personal	Other	All	2023	0.000	0.004
1	2	4	LGV Personal	Other	All	2037	0.000	0.004
1	3	4	LGV Personal	Other	All	2037	0.000	0.004
1	2	4	LGV Freight	Business	All	2023	0.000	0.004
1	3	4	LGV Freight	Business	All	2023	0.000	0.004
1	2	4	LGV Freight	Business	All	2037	0.000	0.004
1	3	4	LGV Freight	Business	All	2037	0.000	0.004

Displayed 20 warnings of a total of 28 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387

2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500

2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656

2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111

2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000

2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000

2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807



2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000

2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848

2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000

2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844

2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000

2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000

2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000

2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000



2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000

2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000

2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_ylr	End_ylr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636

2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116

2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742

2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_ylr	End_ylr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685

2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114

2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202



2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

		max		min			
*							
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

		max		min			
*							
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057

2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770

2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102

2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780

2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726

2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646

2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280



2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525

2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858

2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072

2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099

2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661

2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595

2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725

2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490



2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539

2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307

2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140

2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name TUBA-3\_Mickledale-LowV4.1\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\MasterFile - 3\_Mickledale\_V4.1\_Low\_15OB.txt



Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	30	0	0	13	0	0	0	0
Road	2021	51	117	5082	13	0	0	0	115
Road	2022	0	117	1026	20	0	0	0	0

Road	2023	0	0	0	10	0	0	0	0
Road	2024	0	0	0	0	4	0	0	0
Road	2025	0	0	0	0	4	0	0	0
Road	2026	0	0	0	0	4	0	0	0
Road	2027	0	0	0	0	4	0	0	0
Road	2028	0	0	0	0	17	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	85	0	0	0
Road	2034	0	0	0	0	3	0	0	0
Road	2035	0	0	0	0	3	0	0	0
Road	2036	0	0	0	0	3	0	0	0
Road	2037	0	0	0	0	3	0	0	0
Road	2038	0	0	0	0	14	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	293	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	17	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	54	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	9	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	384	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0

Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	7	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	1	0	0	0
Road	2073	0	0	0	0	40	0	0	0
Road	2074	0	0	0	0	1	0	0	0
Road	2075	0	0	0	0	1	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	5	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	31	31
Road	2021	0	3605	3605
Road	2022	0	770	770
Road	2023	0	6	6
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	2	2
Road	2027	0	2	2
Road	2028	0	9	9
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	39	39
Road	2034	0	2	2
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	5	5
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	94	94



Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	5	5
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	12	12
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	66	66
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	5	5
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4690	4690

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode Year Time period DO MIN DO SOM

Car	2023 AM peak	1074	1074
Car	2023 PM peak	1150	1150
Car	2023 Inter-peak	3028	3028
Car	2023 Off-peak	440	440
Car	2023 All	5692	5692
Car	2037 AM peak	1058	1058
Car	2037 PM peak	1123	1123
Car	2037 Inter-peak	2977	2977
Car	2037 Off-peak	434	434
Car	2037 All	5592	5592
LGV Personal	2023 AM peak	23	23
LGV Personal	2023 PM peak	23	23
LGV Personal	2023 Inter-peak	73	73
LGV Personal	2023 Off-peak	11	11
LGV Personal	2023 All	130	130
LGV Personal	2037 AM peak	23	23
LGV Personal	2037 PM peak	22	22
LGV Personal	2037 Inter-peak	72	72
LGV Personal	2037 Off-peak	10	10
LGV Personal	2037 All	128	128
LGV Freight	2023 AM peak	171	171
LGV Freight	2023 PM peak	168	168
LGV Freight	2023 Inter-peak	535	535
LGV Freight	2023 Off-peak	78	78
LGV Freight	2023 All	952	952
LGV Freight	2037 AM peak	169	169
LGV Freight	2037 PM peak	164	164
LGV Freight	2037 Inter-peak	526	526
LGV Freight	2037 Off-peak	77	77
LGV Freight	2037 All	935	935
OGV1	2023 AM peak	49	49
OGV1	2023 PM peak	29	29
OGV1	2023 Inter-peak	303	303
OGV1	2023 Off-peak	44	44
OGV1	2023 All	425	425
OGV1	2037 AM peak	48	48
OGV1	2037 PM peak	29	29
OGV1	2037 Inter-peak	298	298
OGV1	2037 Off-peak	43	43
OGV1	2037 All	418	418
OGV2	2023 AM peak	40	40
OGV2	2023 PM peak	25	25
OGV2	2023 Inter-peak	213	213
OGV2	2023 Off-peak	31	31

OGV2	2023	All	309	309
OGV2	2037	AM peak	40	40
OGV2	2037	PM peak	25	25
OGV2	2037	Inter-peak	209	209
OGV2	2037	Off-peak	31	31
OGV2	2037	All	304	304
All	2023	AM peak	1358	1358
All	2023	PM peak	1395	1395
All	2023	Inter-peak	4151	4151
All	2023	Off-peak	604	604
All	2023	All	7508	7508
All	2037	AM peak	1337	1337
All	2037	PM peak	1363	1363
All	2037	Inter-peak	4082	4082
All	2037	Off-peak	595	595
All	2037	All	7377	7377

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	117	0	882	571	273	0	916	580
Road	2037	86	0	414	347	202	0	430	352

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	402	342	52	416	354	53
Car	2037	273	147	492	283	152	509
LGV Personal	2023	1	24	0	1	25	0
LGV Personal	2037	1	16	6	1	17	6
LGV Freight	2023	4	174	2	4	180	2
LGV Freight	2037	5	119	42	5	123	44
OGV1	2023	0	134	0	0	140	0
OGV1	2037	0	114	0	0	120	0
OGV2	2023	0	159	0	0	167	0
OGV2	2037	0	117	0	0	123	0
All	2023	406	832	54	420	866	56
All	2037	279	514	539	288	535	559
Car	Total	14458	8297	35325	14965	8588	36574
LGV Personal	Total	43	900	528	45	933	548
LGV Freight	Total	316	6596	3872	328	6843	4017
OGV1	Total	0	6727	0	0	7050	0
OGV2	Total	0	7151	0	0	7482	0

All Total 14817 29671 39725 15338 30896 41138

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1658	1716	58	33	34	1	67	70	2	100	104	4
Car	2037	922	955	32	21	22	1	42	44	1	63	66	2
LGV Personal	2023	58	61	2	1	1	0	2	2	0	4	4	0
LGV Personal	2037	41	42	2	1	1	0	2	2	0	3	3	0
LGV Freight	2023	428	444	16	9	9	0	17	18	1	26	27	1
LGV Freight	2037	298	309	11	7	7	0	14	14	1	20	21	1
OGV1	2023	324	340	16	6	7	0	13	14	1	20	21	1
OGV1	2037	276	289	13	6	7	0	13	13	1	19	20	1
OGV2	2023	386	404	18	8	8	0	16	16	1	23	24	1
OGV2	2037	284	297	13	7	7	0	13	14	1	19	20	1
All	2023	2855	2965	110	57	59	2	116	120	4	173	180	7
All	2024	2796	2904	108	56	58	2	111	115	4	167	173	6
All	2025	2718	2822	105	54	56	2	106	110	4	159	165	6
All	2026	2640	2741	102	50	52	2	101	104	4	151	157	6
All	2027	2564	2663	99	48	50	2	96	99	4	144	150	6
All	2028	2491	2587	96	45	47	2	92	96	4	138	143	5
All	2029	2421	2515	94	44	45	2	88	91	3	131	136	5
All	2030	2322	2412	90	41	42	2	82	85	3	123	127	5
All	2031	2230	2317	87	41	43	2	83	86	3	124	129	5
All	2032	2145	2228	83	42	44	2	84	87	3	126	131	5
All	2033	2067	2147	81	42	44	2	84	87	3	126	131	5
All	2034	1996	2074	78	42	43	2	84	88	3	126	131	5
All	2035	1931	2007	75	42	44	2	84	87	3	126	131	5
All	2036	1873	1947	73	42	44	2	84	87	3	126	131	5
All	2037	1820	1892	71	42	44	2	83	86	3	125	130	5
All	2038	1775	1845	70	41	43	2	83	86	3	124	129	5
All	2039	1736	1805	68	41	43	2	82	86	3	124	129	5
All	2040	1698	1765	67	41	43	2	82	85	3	123	128	5
All	2041	1660	1725	65	41	42	2	81	84	3	122	126	5
All	2042	1629	1694	64	40	42	2	81	84	3	121	125	5
All	2043	1602	1666	63	40	41	2	80	83	3	120	125	5
All	2044	1577	1640	62	40	41	2	79	82	3	119	123	5
All	2045	1555	1617	62	39	41	2	78	81	3	118	122	5
All	2046	1533	1594	61	39	40	2	78	81	3	116	121	5
All	2047	1515	1575	60	38	40	2	77	80	3	115	120	5
All	2048	1497	1557	60	38	40	2	76	79	3	114	119	5
All	2049	1481	1540	59	38	39	2	75	78	3	113	117	4
All	2050	1466	1524	58	37	38	1	74	77	3	111	116	4
All	2051	1466	1524	58	37	38	1	75	78	3	112	117	4



LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0
LGV Freight	2037	2	3	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0
All	2023	14	14	0	0	0	0	0	0	0	0	0
All	2024	18	18	1	0	0	0	0	0	1	1	0
All	2025	24	25	1	0	0	0	1	1	0	1	1
All	2026	30	31	1	0	0	0	1	1	0	1	1
All	2027	34	35	1	0	0	0	1	1	0	2	2
All	2028	37	39	1	1	1	0	1	1	0	2	2
All	2029	39	40	1	1	1	0	1	1	0	2	2
All	2030	39	40	1	1	1	0	1	1	0	2	2
All	2031	39	40	1	1	1	0	1	1	0	2	2
All	2032	38	40	1	1	1	0	2	2	0	2	2
All	2033	38	39	1	1	1	0	2	2	0	2	2
All	2034	36	38	1	1	1	0	2	2	0	2	2
All	2035	35	36	1	1	1	0	2	2	0	2	2
All	2036	33	34	1	1	1	0	1	2	0	2	2
All	2037	31	32	1	1	1	0	1	1	0	2	2
All	2038	29	30	1	1	1	0	1	1	0	2	2
All	2039	27	28	1	1	1	0	1	1	0	2	2
All	2040	25	26	1	1	1	0	1	1	0	2	2
All	2041	26	27	1	1	1	0	1	1	0	2	2
All	2042	26	27	1	1	1	0	1	1	0	2	2
All	2043	26	26	1	1	1	0	1	1	0	2	2
All	2044	25	26	1	1	1	0	1	1	0	2	2
All	2045	25	26	1	1	1	0	1	1	0	2	2
All	2046	25	26	1	1	1	0	1	1	0	2	2
All	2047	24	25	1	1	1	0	1	1	0	2	2
All	2048	24	25	1	1	1	0	1	1	0	2	2
All	2049	23	24	1	1	1	0	1	1	0	2	2
All	2050	23	23	1	1	1	0	1	1	0	2	2
All	2051	23	23	1	1	1	0	1	1	0	2	2
All	2052	23	23	1	1	1	0	1	1	0	2	2
All	2053	23	23	1	1	1	0	1	1	0	2	2
All	2054	23	23	1	1	1	0	1	1	0	2	2
All	2055	23	23	1	1	1	0	1	1	0	2	2
All	2056	23	23	1	1	1	0	1	1	0	2	2
All	2057	23	23	1	1	1	0	1	1	0	2	2
All	2058	23	23	1	1	1	0	1	1	0	2	2
All	2059	23	23	1	1	1	0	1	1	0	2	2

All	2060	23	23	1	1	1	0	1	1	0	2	2	0
All	2061	23	23	1	1	1	0	1	1	0	2	2	0
All	2062	23	23	1	1	1	0	1	1	0	2	2	0
All	2063	23	23	1	0	1	0	1	1	0	2	2	0
All	2064	23	23	1	0	0	0	1	1	0	2	2	0
All	2065	23	23	1	0	0	0	1	1	0	2	2	0
All	2066	23	23	1	0	0	0	1	1	0	2	2	0
All	2067	23	23	1	0	0	0	1	1	0	2	2	0
All	2068	23	23	1	0	0	0	1	1	0	2	2	0
All	2069	23	23	1	0	0	0	1	1	0	2	2	0
All	2070	23	23	1	0	0	0	1	1	0	2	2	0
All	2071	23	23	1	0	0	0	1	1	0	1	2	0
All	2072	23	23	1	0	0	0	1	1	0	1	2	0
All	2073	23	23	1	0	0	0	1	1	0	1	1	0
All	2074	23	23	1	0	0	0	1	1	0	1	1	0
All	2075	23	23	1	0	0	0	1	1	0	1	1	0
All	2076	23	23	1	0	0	0	1	1	0	1	1	0
All	2077	23	23	1	0	0	0	1	1	0	1	1	0
All	2078	23	23	1	0	0	0	1	1	0	1	1	0
All	2079	23	23	1	0	0	0	1	1	0	1	1	0
All	2080	23	23	1	0	0	0	1	1	0	1	1	0
All	2081	23	23	1	0	0	0	1	1	0	1	1	0
All	2082	23	23	1	0	0	0	1	1	0	1	1	0
Car	Total	1380	1429	49	28	29	1	58	60	2	90	93	3
LGV Personal	Total	18	19	1	0	0	0	1	1	0	1	1	0
LGV Freight	Total	134	139	5	3	3	0	6	6	0	9	9	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1532	1586	54	31	32	1	65	67	2	100	104	4

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	506	506	-0	10	10	-0	21	21	-0	31	31	-0
AM peak	2037	316	316	-0	7	7	-0	14	14	-0	22	22	-0
PM peak	2023	492	492	0	10	10	0	20	20	0	30	30	0
PM peak	2037	297	297	0	7	7	0	14	14	0	20	20	0
Inter-peak	2023	1717	1717	0	34	34	0	70	70	0	104	104	0
Inter-peak	2037	1116	1116	0	26	26	0	51	51	0	77	77	0
Off-peak	2023	140	250	110	3	5	2	6	10	4	8	15	7
Off-peak	2037	91	163	72	2	4	2	4	7	3	6	11	5
AM peak	Total	17643	17630	-14	357	356	-0	766	765	-1	1175	1174	-1
PM peak	Total	16490	16490	0	333	333	0	715	715	0	1096	1096	0
Inter-peak	Total	63211	63211	0	1277	1277	0	2748	2748	0	4219	4219	0

Off-peak Total 5151 9206 4055 104 186 82 224 400 176 344 614 271

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
AM peak	2037	6	6	0	0	0	0	0	0	0	0	0	0
PM peak	2023	3	3	0	0	0	0	0	0	0	0	0	0
PM peak	2037	6	6	0	0	0	0	0	0	0	0	0	0
Inter-peak	2023	8	8	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	17	17	0	0	0	1	1	0	1	1	0	0
Off-peak	2023	1	1	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	1	3	1	0	0	0	0	0	0	0	0	0
AM peak	Total	299	299	0	6	6	0	13	13	0	20	20	0
PM peak	Total	315	315	0	6	6	0	13	13	0	21	21	0
Inter-peak	Total	849	849	0	17	17	0	36	36	0	56	56	0
Off-peak	Total	69	124	54	1	3	1	3	5	2	5	8	4

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost			Operator_Rev		Indirect
		User_Charges	Time	Fuel	Non_fuel	PT_fares_(pri)	Taxes		
Road	2023	-156	0	-34	-8	0	19		
Road	2024	-153	0	-32	-8	0	18		
Road	2025	-150	0	-31	-7	0	17		
Road	2026	-146	0	-29	-7	0	16		
Road	2027	-143	0	-28	-7	0	15		
Road	2028	-141	0	-27	-7	0	14		
Road	2029	-138	0	-26	-6	0	14		
Road	2030	-135	0	-24	-6	0	13		
Road	2031	-132	0	-23	-6	0	12		
Road	2032	-129	0	-21	-6	0	11		
Road	2033	-126	0	-20	-6	0	10		
Road	2034	-124	0	-19	-5	0	10		
Road	2035	-121	0	-18	-5	0	9		
Road	2036	-118	0	-17	-5	0	9		
Road	2037	-116	0	-16	-5	0	8		



Road	2038	-114	0	-15	-5	0	8
Road	2039	-111	0	-15	-5	0	7
Road	2040	-109	0	-14	-4	0	7
Road	2041	-107	0	-13	-4	0	7
Road	2042	-105	0	-13	-4	0	6
Road	2043	-103	0	-12	-4	0	6
Road	2044	-100	0	-12	-4	0	6
Road	2045	-98	0	-11	-4	0	6
Road	2046	-96	0	-11	-4	0	5
Road	2047	-94	0	-10	-3	0	5
Road	2048	-92	0	-10	-3	0	5
Road	2049	-90	0	-10	-3	0	5
Road	2050	-88	0	-9	-3	0	5
Road	2051	-87	0	-9	-3	0	4
Road	2052	-85	0	-9	-3	0	4
Road	2053	-84	0	-9	-3	0	4
Road	2054	-83	0	-8	-3	0	4
Road	2055	-81	0	-8	-3	0	4
Road	2056	-80	0	-8	-3	0	4
Road	2057	-79	0	-8	-3	0	4
Road	2058	-78	0	-7	-2	0	4
Road	2059	-76	0	-7	-2	0	4
Road	2060	-75	0	-7	-2	0	4
Road	2061	-74	0	-7	-2	0	3
Road	2062	-73	0	-7	-2	0	3
Road	2063	-72	0	-7	-2	0	3
Road	2064	-71	0	-6	-2	0	3
Road	2065	-70	0	-6	-2	0	3
Road	2066	-69	0	-6	-2	0	3
Road	2067	-68	0	-6	-2	0	3
Road	2068	-67	0	-6	-2	0	3
Road	2069	-66	0	-6	-2	0	3
Road	2070	-65	0	-5	-2	0	3
Road	2071	-64	0	-5	-2	0	3
Road	2072	-63	0	-5	-2	0	3
Road	2073	-62	0	-5	-2	0	3
Road	2074	-61	0	-5	-2	0	3
Road	2075	-60	0	-5	-1	0	3
Road	2076	-59	0	-5	-1	0	2
Road	2077	-59	0	-5	-1	0	2
Road	2078	-58	0	-4	-1	0	2
Road	2079	-57	0	-4	-1	0	2
Road	2080	-56	0	-4	-1	0	2
Road	2081	-55	0	-4	-1	0	2

Road	2082	-54	0	-4	-1	0	2
Road	Total	-5547	0	-716	-209	0	371

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	-103	0	-19	-1	0	10
Car	2037	-77	0	-8	-1	0	4
LGV Personal	2023	-2	0	-1	0	0	0
LGV Personal	2037	-1	0	-0	0	0	0
LGV Freight	2023	-29	0	-5	-1	0	3
LGV Freight	2037	-22	0	-2	-1	0	1
OGV1	2023	-13	0	-5	-2	0	3
OGV1	2037	-9	0	-3	-2	0	1
OGV2	2023	-9	0	-5	-3	0	3
OGV2	2037	-7	0	-3	-2	0	1
All	2023	-156	0	-34	-8	0	19
All	2037	-116	0	-16	-5	0	8
Car	Total	-3671	0	-362	-28	0	175
LGV Personal	Total	-62	0	-14	0	0	8
LGV Freight	Total	-1035	0	-104	-26	0	55
OGV1	Total	-451	0	-116	-65	0	65
OGV2	Total	-327	0	-121	-91	0	68
All	Total	-5547	0	-716	-209	0	371

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
All	2023	-156	0	-34	-8	0	19
All	2037	-116	0	-16	-5	0	8
All	Total	-5547	0	-716	-209	0	371

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Business	2023	-58	0	-15	-8	0	8
Business	2037	-43	0	-8	-5	0	4
Commuting	2023	-28	0	-5	0	0	3
Commuting	2037	-21	0	-2	0	0	1
Other	2023	-69	0	-13	0	0	7
Other	2037	-52	0	-6	0	0	3

Business	Total	-2064	0	-356	-209	0	196
Commuting	Total	-1013	0	-104	0	0	50
Other	Total	-2470	0	-257	0	0	125

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-26	0	0	-1	0	-0
AM peak	2037	-19	0	0	-1	0	-0
PM peak	2023	-28	0	0	-1	0	0
PM peak	2037	-20	0	0	-0	0	0
Inter-peak	2023	-87	0	0	-5	0	0
Inter-peak	2037	-65	0	0	-3	0	0
Off-peak	2023	-15	0	-34	-1	0	19
Off-peak	2037	-12	0	-16	-1	0	8
AM peak	Total	-918	0	3	-27	0	-1
PM peak	Total	-977	0	0	-20	0	0
Inter-peak	Total	-3098	0	0	-140	0	0
Off-peak	Total	-553	0	-719	-23	0	373

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	0	0	0
Car	Business	2037	0	0	-1	0	0	0
Car	Business	Total	0	0	-73	1	0	0
Car	Commuting	2023	0	0	-4	0	0	0
Car	Commuting	2037	0	0	-4	0	0	0
Car	Commuting	Total	0	0	-245	6	0	0
Car	Other	2023	0	0	-21	0	0	0
Car	Other	2037	0	0	-21	0	0	0
Car	Other	Total	0	0	-1263	18	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-1	0	0	0
LGV Personal	Other	2037	0	0	-1	0	0	0
LGV Personal	Other	Total	0	0	-33	0	0	0
LGV Freight	Business	2023	0	0	-3	0	0	0
LGV Freight	Business	2037	0	0	-3	0	0	0

LGV Freight	Business	Total	0	0	-197	3	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	2037	0	0	-1	0	0	0
OGV1	Business	Total	0	0	-74	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	2037	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-54	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-7	0	0	0
Car	Business	2037	0	0	-5	0	0	0
Car	Business	Total	0	0	-254	3	0	0
Car	Commuting	2023	0	0	-29	1	0	0
Car	Commuting	2037	0	0	-22	1	0	0
Car	Commuting	Total	0	0	-1039	26	0	0
Car	Other	2023	0	0	-69	1	0	0
Car	Other	2037	0	0	-51	1	0	0
Car	Other	Total	0	0	-2443	35	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0

LGV Personal Other	2023	0	0	-2	0	0	0
LGV Personal Other	2037	0	0	-1	0	0	0
LGV Personal Other	Total	0	0	-63	1	0	0
LGV Freight Business	2023	0	0	-30	0	0	0
LGV Freight Business	2037	0	0	-22	0	0	0
LGV Freight Business	Total	0	0	-1050	15	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	-13	0	0	0
OGV1 Business	2037	0	0	-9	0	0	0
OGV1 Business	Total	0	0	-454	3	0	0
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0
OGV2 Business	2023	0	0	-9	0	0	0
OGV2 Business	2037	0	0	-7	0	0	0
OGV2 Business	Total	0	0	-330	2	0	0
OGV2 Commuting	2023	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-9	0	0	0
Car	Business	2037	0	0	-6	0	0	0
Car	Business	Total	0	0	-298	4	0	0
Car	Commuting	2023	0	0	-35	1	0	0
Car	Commuting	2037	0	0	-24	1	0	0
Car	Commuting	Total	0	0	-1143	26	0	0
Car	Other	2023	0	0	-81	1	0	0
Car	Other	2037	0	0	-57	1	0	0
Car	Other	Total	0	0	-2686	35	0	0
LGV Personal Business	2023	0	0	0	0	0	0	0

LGV Personal Business	2037	0	0	0	0	0	0
LGV Personal Business	Total	0	0	0	0	0	0
LGV Personal Commuting	2023	0	0	0	0	0	0
LGV Personal Commuting	2037	0	0	0	0	0	0
LGV Personal Commuting	Total	0	0	0	0	0	0
LGV Personal Other	2023	0	0	-2	0	0	0
LGV Personal Other	2037	0	0	-2	0	0	0
LGV Personal Other	Total	0	0	-77	1	0	0
LGV Freight Business	2023	0	0	-35	0	0	0
LGV Freight Business	2037	0	0	-25	0	0	0
LGV Freight Business	Total	0	0	-1180	16	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	-20	0	0	0
OGV1 Business	2037	0	0	-14	0	0	0
OGV1 Business	Total	0	0	-635	3	0	0
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0
OGV2 Business	2023	0	0	-18	0	0	0
OGV2 Business	2037	0	0	-12	0	0	0
OGV2 Business	Total	0	0	-541	3	0	0
OGV2 Commuting	2023	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-1	0	0	0	0	0	0
Car	Business	2037	0	-1	0	0	0	0	0	0
Car	Business	Total	0	-72	0	0	0	0	0	0
Car	Commuting	2023	0	-4	0	0	0	0	0	0
Car	Commuting	2037	0	-4	0	0	0	0	0	0

Car	Commuting	Total	0	-239	0	0	0	0	0	0
Car	Other	2023	0	-21	0	0	0	0	0	0
Car	Other	2037	0	-21	0	0	0	0	0	0
Car	Other	Total	0	-1245	0	0	0	0	0	0
LGV Personal Business		2023	0	0	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0	0	0
LGV Personal Other		2023	0	-1	0	0	0	0	0	0
LGV Personal Other		2037	0	-1	0	0	0	0	0	0
LGV Personal Other		Total	0	-32	0	0	0	0	0	0
LGV Freight Business		2023	0	-3	0	0	0	0	0	0
LGV Freight Business		2037	0	-3	0	0	0	0	0	0
LGV Freight Business		Total	0	-194	0	0	0	0	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0	0	0
OGV1 Business		2023	0	-1	0	0	0	0	0	0
OGV1 Business		2037	0	-1	0	0	0	0	0	0
OGV1 Business		Total	0	-73	0	0	0	0	0	0
OGV1 Commuting		2023	0	0	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0	0	0
OGV1 Commuting		Total	0	0	0	0	0	0	0	0
OGV1 Other		2023	0	0	0	0	0	0	0	0
OGV1 Other		2037	0	0	0	0	0	0	0	0
OGV1 Other		Total	0	0	0	0	0	0	0	0
OGV2 Business		2023	0	-1	0	0	0	0	0	0
OGV2 Business		2037	0	-1	0	0	0	0	0	0
OGV2 Business		Total	0	-53	0	0	0	0	0	0
OGV2 Commuting		2023	0	0	0	0	0	0	0	0
OGV2 Commuting		2037	0	0	0	0	0	0	0	0
OGV2 Commuting		Total	0	0	0	0	0	0	0	0
OGV2 Other		2023	0	0	0	0	0	0	0	0
OGV2 Other		2037	0	0	0	0	0	0	0	0
OGV2 Other		Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms





OGV2	Other	Total	0	0	0	0	0	0	0	0
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TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	-9	0	0	0	0	0	0
Car	Business	2037	0	-6	0	0	0	0	0	0
Car	Business	Total	0	-294	0	0	0	0	0	0
Car	Commuting	2023	0	-34	0	0	0	0	0	0
Car	Commuting	2037	0	-24	0	0	0	0	0	0
Car	Commuting	Total	0	-1117	0	0	0	0	0	0
Car	Other	2023	0	-80	0	0	0	0	0	0
Car	Other	2037	0	-56	0	0	0	0	0	0
Car	Other	Total	0	-2650	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	-2	0	0	0	0	0	0
LGV Personal	Other	2037	0	-2	0	0	0	0	0	0
LGV Personal	Other	Total	0	-76	0	0	0	0	0	0
LGV Freight	Business	2023	0	-35	0	0	0	0	0	0
LGV Freight	Business	2037	0	-25	0	0	0	0	0	0
LGV Freight	Business	Total	0	-1164	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-20	0	0	0	0	0	0
OGV1	Business	2037	0	-14	0	0	0	0	0	0
OGV1	Business	Total	0	-632	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	-18	0	0	0	0	0	0
OGV2	Business	2037	0	-12	0	0	0	0	0	0
OGV2	Business	Total	0	-539	0	0	0	0	0	0

OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road -12.57% -16.17%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-1013	-1013
Vehicle operating costs	-104	-104
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-1117</b>	<b>-1117</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-2470	-2470
Vehicle operating costs	-257	-257
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-2727</b>	<b>-2727</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	-2064	-250	-1813
Vehicle operating costs	-565	-44	-521
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>-2629</b>	<b>-294</b>	<b>-2335</b>

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
<b>Subtotal</b>	<b>0</b>	<b>0</b>

Other business Impacts

Developer contributions	-79	-79
NET BUSINESS IMPACT	-2708	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	-6552	
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	278	278
Investment Costs	657	657
Developer Contributions	-79	-79
Grant/Subsidy Payments	0	0
NET IMPACT	857	857

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	3755	3755
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3755	3755

Central Government Funding: Non-Transport

Indirect Tax Revenues	-371	-371
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TOTALS

Broad Transport Budget	4611	4611
Wider Public Finances	-371	-371

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-176	
Economic Efficiency: Consumer Users (Commuting)		-1117
Economic Efficiency: Consumer Users (Other)		-2727

Economic Efficiency: Business Users and Providers	-2708
Wider Public Finances (Indirect Taxation Revenues)	371
Present Value of Benefits (PVB)	-6357
Broad Transport Budget	4611
Present Value of Costs (PVC)	4611
OVERALL IMPACTS	
Net Present Value (NPV)	-10968
Benefit to Cost Ratio (BCR)	-1.379

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-3\_Mickledale-LowV4.1\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\MasterFile - 3\_Mickledale\_V4.1\_Low\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_Low\_Sens\_150B\3-Mickledale\_V4.1\_Low\_Sens\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\3-Mickledale\TUBA\_V4.1\_Low\_Sens\_150B\3-Mickledale\_V4.1\_Low\_Sens\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCP2

Elapsed time : 0hrs 0mins 5secs

# Appendix AA – Lowdham TUBA Files

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-6\_Lowdham\_V4\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2024 2025 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	502.86	F	119.37	1
C	1	CEN	5273.71	F	119.37	1
L	1	CEN	68.25	F	119.37	1
S	1	CEN	20.61	F	119.37	1
P	1	LOC	76.6705	F	119.37	1

C	1	LOC	1246.721	F	119.37	1
S	1	LOC	45.7565	F	119.37	1
D	1	LOC	517.5	F	119.37	1
L	1	LOC	10.2375	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00		23.50	36.90	0.00	0.00	0.00	0.00
2021	1	83.20		23.50	63.10	50.00	0.00	0.00	11.11
2022	1	16.80		35.40	0.00	50.00	0.00	0.00	22.22
2023	1	0.00		17.60	0.00	0.00	0.00	0.00	66.67
2024	1	0.00		0.00	0.00	0.00	0.975	0.00	0.00
2025	1	0.00		0.00	0.00	0.00	0.953	0.00	0.00
2026	1	0.0		0.0	0.0	0.0	0.932	0.0	0.0
2027	1	0.0		0.0	0.0	0.0	0.911	0.0	0.0
2028	1	0.0		0.0	0.0	0.0	1.788	0.0	0.0
2029	1	0.0		0.0	0.0	0.0	0.870	0.0	0.0
2030	1	0.0		0.0	0.0	0.0	0.851	0.0	0.0
2031	1	0.0		0.0	0.0	0.0	0.831	0.0	0.0
2032	1	0.0		0.0	0.0	0.0	0.813	0.0	0.0
2033	1	0.0		0.0	0.0	0.0	5.028	0.0	0.0
2034	1	0.0		0.0	0.0	0.0	0.777	0.0	0.0
2035	1	0.0		0.0	0.0	0.0	0.759	0.0	0.0



2036	1	0.0	0.0	0.0	0.0	0.742	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.725	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.424	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.693	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.678	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.662	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.647	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	27.234	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.619	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.605	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.591	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.578	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	2.458	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.552	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.540	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.528	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.516	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	3.190	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.493	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.482	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.471	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.460	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.904	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.440	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.430	0.0	0.0	0.0

2061	1	0.0	0.0	0.0	0.0	0.420	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.411	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	27.041	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.393	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.384	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.375	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.367	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.720	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.350	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.343	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.335	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.327	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.524	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.306	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.573	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.279	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.272	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.266	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.260	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05743	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.31641	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.45226	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11000	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03010	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt

7	7	1	V	1	0	2023	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05743	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
31	3	1	V	1	1	2023	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt

32	4	1	V	1	1	2023	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt
56	7	4	V	1	1	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2023 DS.txt











157	3	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 IP 2023 DS.txt
158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 IP 2023 DS.txt
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162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2023 DS.txt
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170	2	1	V	1	0	2037	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2037 DM.txt
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178	3	2	V	1	0	2037	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DM.txt
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180	5	2	V	1	0	2037	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DM.txt
181	6	2	V	1	0	2037	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DM.txt

182	7	2	V	1	0	2037	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
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186	4	3	V	1	0	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DM.txt
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196	7	4	V	1	0	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DM.txt
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199	3	1	V	1	1	2037	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2037 DS.txt
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202	6	1	V	1	1	2037	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 AM 2037 DS.txt
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204	1	2	V	1	1	2037	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
206	3	2	V	1	1	2037	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt

207	4	2	V	1	1	2037	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
208	5	2	V	1	1	2037	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\V_6_Lowdham_V4 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\T_6_Lowdham_V4 AM 2037 DM.txt











332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4\D_6_Lowdham_V4 AM 2023 DM.txt

SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:03:42

ERRORS AND WARNINGS

2051 Warnings found in total (including any above)

Warning (147 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
4	1	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	4.248	4.248
4	2	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	4.704	4.704
4	3	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	3.837	3.837
4	1	2	Car	Business	All	2037	0.090	0.001	68.885	12.485	12.485
4	2	2	Car	Business	All	2037	0.090	0.001	68.885	13.824	13.824
4	3	2	Car	Business	All	2037	0.090	0.001	68.885	11.275	11.275
4	1	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	31.154	31.154
4	2	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	34.496	34.496
4	3	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	28.136	28.136
4	1	2	Car	Commuting	All	2037	0.090	0.001	68.885	79.518	79.518
4	2	2	Car	Commuting	All	2037	0.090	0.001	68.885	88.048	88.048
4	3	2	Car	Commuting	All	2037	0.090	0.001	68.885	71.814	71.814
4	1	2	OGV1	Business	All	2037	0.090	0.001	68.885	5.346	5.346
4	2	2	OGV1	Business	All	2037	0.090	0.001	68.885	5.920	5.920
4	3	2	OGV1	Business	All	2037	0.090	0.001	68.885	4.829	4.829

4	1	2	Car	Other	All	2037	0.090	0.001	68.885	152.089	152.089
4	2	2	Car	Other	All	2037	0.090	0.001	68.885	168.403	168.403
4	3	2	Car	Other	All	2037	0.090	0.001	68.885	137.354	137.354
4	1	2	OGV2	Business	All	2037	0.090	0.001	68.885	4.133	4.133
4	2	2	OGV2	Business	All	2037	0.090	0.001	68.885	4.576	4.576

Displayed 20 warnings of a total of 315 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.573	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.521	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.745	85.000
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.302	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.329	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.393	85.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.335	130.000
1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.472	130.000
1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.435	130.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.199	110.000
1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.277	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.559	110.000

1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.232	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	9.821	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.902	130.000

Displayed 20 warnings of a total of 840 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.039	110.000
4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.159	110.000
4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.759	110.000
4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.974	85.000
4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.031	85.000
4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.318	85.000
4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.513	85.000
4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.544	85.000
4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.695	85.000
4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.569	130.000
4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.602	130.000
4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.769	130.000
4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.794	130.000

4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.018	130.000
4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	5.134	130.000
4	4	4	Car	Commuting	All	2023	2.000	0.000	5128.205	0.000	130.000

Displayed 20 warnings of a total of 896 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-6\_Lowdham\_V4\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997



Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0

Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s



Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0
Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	137	0	0	0

Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0

Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3

Road	2027	0	3	3
Road	2028	0	5	5
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2
Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1

Road	2052	0	1	1
Road	2053	0	4	4
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	23	23
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0

Road	2077	0	0	0
Road	2078	0	0	0
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1954	1954
Car	2023	PM peak	2091	2091
Car	2023	Inter-peak	5769	5769
Car	2023	Off-peak	837	837
Car	2023	All	10652	10652
Car	2037	AM peak	2038	2038
Car	2037	PM peak	2152	2152
Car	2037	Inter-peak	6018	6018
Car	2037	Off-peak	875	875
Car	2037	All	11083	11083
LGV Personal	2023	AM peak	35	35
LGV Personal	2023	PM peak	36	36
LGV Personal	2023	Inter-peak	122	122
LGV Personal	2023	Off-peak	18	18

LGV Personal	2023 All	211	211
LGV Personal	2037 AM peak	37	37
LGV Personal	2037 PM peak	37	37
LGV Personal	2037 Inter-peak	127	127
LGV Personal	2037 Off-peak	18	18
LGV Personal	2037 All	220	220
LGV Freight	2023 AM peak	260	260
LGV Freight	2023 PM peak	267	267
LGV Freight	2023 Inter-peak	891	891
LGV Freight	2023 Off-peak	129	129
LGV Freight	2023 All	1548	1548
LGV Freight	2037 AM peak	271	271
LGV Freight	2037 PM peak	275	275
LGV Freight	2037 Inter-peak	930	930
LGV Freight	2037 Off-peak	135	135
LGV Freight	2037 All	1611	1611
OGV1	2023 AM peak	71	71
OGV1	2023 PM peak	46	46
OGV1	2023 Inter-peak	426	426
OGV1	2023 Off-peak	62	62
OGV1	2023 All	605	605
OGV1	2037 AM peak	74	74
OGV1	2037 PM peak	47	47
OGV1	2037 Inter-peak	444	444
OGV1	2037 Off-peak	65	65

OGV1	2037 All	630	630
OGV2	2023 AM peak	44	44
OGV2	2023 PM peak	35	35
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	337	337
OGV2	2037 AM peak	46	46
OGV2	2037 PM peak	36	36
OGV2	2037 Inter-peak	234	234
OGV2	2037 Off-peak	34	34
OGV2	2037 All	351	351
All	2023 AM peak	2366	2366
All	2023 PM peak	2476	2476
All	2023 Inter-peak	7433	7433
All	2023 Off-peak	1078	1078
All	2023 All	13353	13353
All	2037 AM peak	2467	2467
All	2037 PM peak	2548	2548
All	2037 Inter-peak	7753	7753
All	2037 Off-peak	1127	1127
All	2037 All	13895	13895

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	524	0	1513	977	139	0	1508	967
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Road	2037	523	0	868	630	133	0	862	622
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FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	702	661	98	698	662	98
Car	2037	553	389	783	548	388	783
LGV Personal	2023	0	40	1	0	40	1
LGV Personal	2037	0	34	16	0	34	16
LGV Freight	2023	4	295	6	4	295	6
LGV Freight	2037	2	252	120	2	252	120
OGV1	2023	0	205	0	0	204	0
OGV1	2037	0	214	0	0	212	0
OGV2	2023	0	191	0	0	188	0
OGV2	2037	0	200	0	0	196	0
All	2023	706	1392	105	702	1390	105
All	2037	555	1089	920	550	1082	920
Car	Total	29004	20956	60233	28765	20923	60233
LGV Personal	Total	14	1911	1458	14	1912	1458
LGV Freight	Total	106	14012	10693	105	14019	10693
OGV1	Total	0	12775	0	0	12677	0
OGV2	Total	0	11924	0	0	11698	0
All	Total	29124	61578	72384	28884	61229	72384

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3054	3047	-7	61	61	-0	124	124	-0	185	185	-0
Car	2037	2085	2073	-12	48	48	-0	95	95	-1	143	142	-1
LGV Personal	2023	98	99	0	2	2	0	4	4	0	6	6	0
LGV Personal	2037	84	84	0	2	2	0	4	4	0	6	6	0
LGV Freight	2023	720	722	2	14	14	0	29	29	0	44	44	0
LGV Freight	2037	613	613	0	14	14	0	28	28	0	42	42	0
OGV1	2023	496	493	-3	10	10	-0	20	20	-0	30	30	-0
OGV1	2037	518	514	-4	12	12	-0	24	23	-0	36	35	-0
OGV2	2023	463	455	-7	9	9	-0	19	18	-0	28	28	-0
OGV2	2037	484	474	-9	11	11	-0	22	22	-0	33	33	-1
All	2023	4831	4816	-15	97	96	-0	196	195	-1	293	292	-1
All	2024	4750	4734	-16	94	94	-0	189	188	-1	283	282	-1
All	2025	4654	4638	-17	92	91	-0	181	180	-1	273	272	-1
All	2026	4569	4552	-18	87	87	-0	174	173	-1	261	260	-1
All	2027	4484	4465	-19	85	84	-0	167	166	-1	252	251	-1
All	2028	4392	4372	-19	80	80	-0	162	162	-1	242	241	-1
All	2029	4312	4292	-20	78	78	-0	156	155	-1	234	233	-1
All	2030	4231	4210	-21	74	74	-0	150	149	-1	224	222	-1
All	2031	4148	4126	-22	77	77	-0	154	153	-1	231	230	-1
All	2032	4079	4057	-22	80	79	-0	160	159	-1	239	238	-1
All	2033	4016	3993	-23	82	82	-0	163	162	-1	245	244	-1

All	2034	3947	3924	-24	83	82	-0	167	166	-1	249	248	-2
All	2035	3892	3868	-24	84	84	-1	169	168	-1	255	253	-2
All	2036	3841	3816	-25	86	85	-1	172	171	-1	258	256	-2
All	2037	3784	3758	-26	87	86	-1	173	172	-1	260	258	-2
All	2038	3727	3702	-25	87	86	-1	174	173	-1	261	259	-2
All	2039	3674	3649	-25	87	87	-1	174	173	-1	263	261	-2
All	2040	3614	3589	-25	87	87	-1	175	173	-1	262	260	-2
All	2041	3562	3537	-25	87	87	-1	174	172	-1	261	259	-2
All	2042	3512	3488	-24	86	86	-1	174	172	-1	260	258	-2
All	2043	3456	3432	-24	86	85	-1	172	171	-1	259	257	-2
All	2044	3410	3387	-24	86	85	-1	171	170	-1	257	255	-2
All	2045	3368	3344	-24	85	85	-1	169	168	-1	255	253	-2
All	2046	3319	3295	-23	84	83	-1	168	167	-1	252	250	-2
All	2047	3278	3255	-23	83	82	-1	166	165	-1	250	248	-2
All	2048	3239	3216	-23	82	82	-1	164	163	-1	247	245	-2
All	2049	3194	3171	-23	81	81	-1	162	161	-1	243	241	-2
All	2050	3153	3131	-23	80	79	-1	160	159	-1	239	238	-2
All	2051	3153	3131	-23	79	79	-1	161	159	-1	242	240	-2
All	2052	3153	3131	-23	79	78	-1	161	160	-1	243	242	-2
All	2053	3153	3131	-23	79	78	-1	162	160	-1	244	243	-2
All	2054	3153	3131	-23	77	77	-1	162	161	-1	246	244	-2
All	2055	3153	3131	-23	77	76	-1	162	161	-1	247	245	-2
All	2056	3153	3131	-23	76	75	-1	161	160	-1	247	245	-2
All	2057	3153	3131	-23	75	74	-1	161	160	-1	247	245	-2
All	2058	3153	3131	-23	74	73	-1	160	159	-1	246	245	-2

All	2059	3153	3131	-23	73	72	-1	159	158	-1	246	244	-2
All	2060	3153	3131	-23	71	71	-1	158	157	-1	245	243	-2
All	2061	3153	3131	-23	70	69	-0	157	155	-1	243	241	-2
All	2062	3153	3131	-23	68	67	-0	154	153	-1	241	240	-2
All	2063	3153	3131	-23	66	66	-0	152	151	-1	238	237	-2
All	2064	3153	3131	-23	65	64	-0	150	149	-1	236	234	-2
All	2065	3153	3131	-23	63	62	-0	147	146	-1	232	231	-2
All	2066	3153	3131	-23	61	60	-0	145	144	-1	229	227	-2
All	2067	3153	3131	-23	59	59	-0	142	141	-1	225	224	-2
All	2068	3153	3131	-23	57	57	-0	139	138	-1	222	220	-2
All	2069	3153	3131	-23	55	55	-0	136	135	-1	217	216	-2
All	2070	3153	3131	-23	53	53	-0	133	132	-1	213	212	-2
All	2071	3153	3131	-23	51	51	-0	130	129	-1	209	207	-1
All	2072	3153	3131	-23	49	49	-0	127	126	-1	204	203	-1
All	2073	3153	3131	-23	48	47	-0	124	123	-1	200	198	-1
All	2074	3153	3131	-23	46	46	-0	121	120	-1	195	194	-1
All	2075	3153	3131	-23	44	44	-0	117	117	-1	191	189	-1
All	2076	3153	3131	-23	42	42	-0	114	113	-1	186	184	-1
All	2077	3153	3131	-23	41	40	-0	111	110	-1	181	180	-1
All	2078	3153	3131	-23	39	38	-0	107	107	-1	176	175	-1
All	2079	3153	3131	-23	37	37	-0	104	103	-1	171	170	-1
All	2080	3153	3131	-23	35	35	-0	101	100	-1	166	165	-1
All	2081	3153	3131	-23	34	34	-0	98	97	-1	162	161	-1
All	2082	3153	3131	-23	32	32	-0	95	94	-1	157	156	-1
Car	Total	110780	110204	-576	2244	2233	-12	4817	4791	-25	7390	7351	-39

LGV Personal	Total	4655	4657	2	94	94	0	204	204	0	313	313	0
LGV Freight	Total	34131	34147	16	692	692	0	1494	1495	1	2297	2298	1
OGV1	Total	30920	30683	-237	626	621	-5	1361	1350	-10	2096	2080	-16
OGV2	Total	28859	28312	-547	584	573	-11	1270	1246	-24	1957	1920	-37
All	Total	209346	208004	-1342	4240	4213	-27	9146	9086	-59	14054	13963	-91

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	25	25	0	0	0	0	0	0	1	1	0	
Car	2037	45	45	0	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	2	2	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	7	7	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	27	27	0	0	0	1	1	0	1	1	0	
All	2024	33	33	0	0	0	1	1	0	1	1	0	
All	2025	40	40	0	0	0	1	1	0	2	2	0	
All	2026	48	48	0	1	1	0	1	1	0	2	2	0
All	2027	55	55	0	1	1	0	2	2	0	2	2	0
All	2028	60	60	0	1	1	0	2	2	0	3	3	0

All	2029	62	62	0	1	1	0	2	2	0	3	3	0
All	2030	62	62	0	1	1	0	2	2	0	3	3	0
All	2031	63	63	0	1	1	0	2	2	0	4	4	0
All	2032	63	63	0	1	1	0	2	2	0	4	4	0
All	2033	62	62	0	1	1	0	3	3	0	4	4	0
All	2034	60	60	0	1	1	0	3	3	0	4	4	0
All	2035	58	58	0	1	1	0	3	3	0	4	4	0
All	2036	56	56	0	1	1	0	3	3	0	4	4	0
All	2037	53	53	0	1	1	0	2	2	0	4	4	0
All	2038	50	50	0	1	1	0	2	2	0	4	4	0
All	2039	47	47	0	1	1	0	2	2	0	3	3	0
All	2040	44	44	0	1	1	0	2	2	0	3	3	0
All	2041	45	45	0	1	1	0	2	2	0	3	3	0
All	2042	45	45	0	1	1	0	2	2	0	3	3	0
All	2043	45	45	0	1	1	0	2	2	0	3	3	0
All	2044	45	45	0	1	1	0	2	2	0	3	3	0
All	2045	45	45	0	1	1	0	2	2	0	3	3	0
All	2046	45	45	0	1	1	0	2	2	0	3	3	0
All	2047	44	44	0	1	1	0	2	2	0	3	3	0
All	2048	44	44	0	1	1	0	2	2	0	3	3	0
All	2049	43	43	0	1	1	0	2	2	0	3	3	0
All	2050	42	42	0	1	1	0	2	2	0	3	3	0
All	2051	42	42	0	1	1	0	2	2	0	3	3	0
All	2052	42	42	0	1	1	0	2	2	0	3	3	0
All	2053	42	42	0	1	1	0	2	2	0	3	3	0

All	2054	42	42	0	1	1	0	2	2	0	3	3	0
All	2055	42	42	0	1	1	0	2	2	0	3	3	0
All	2056	42	42	0	1	1	0	2	2	0	3	3	0
All	2057	42	42	0	1	1	0	2	2	0	3	3	0
All	2058	42	42	0	1	1	0	2	2	0	3	3	0
All	2059	42	42	0	1	1	0	2	2	0	3	3	0
All	2060	42	42	0	1	1	0	2	2	0	3	3	0
All	2061	42	42	0	1	1	0	2	2	0	3	3	0
All	2062	42	42	0	1	1	0	2	2	0	3	3	0
All	2063	42	42	0	1	1	0	2	2	0	3	3	0
All	2064	42	42	0	1	1	0	2	2	0	3	3	0
All	2065	42	42	0	1	1	0	2	2	0	3	3	0
All	2066	42	42	0	1	1	0	2	2	0	3	3	0
All	2067	42	42	0	1	1	0	2	2	0	3	3	0
All	2068	42	42	0	1	1	0	2	2	0	3	3	0
All	2069	42	42	0	1	1	0	2	2	0	3	3	0
All	2070	42	42	0	1	1	0	2	2	0	3	3	0
All	2071	42	42	0	1	1	0	2	2	0	3	3	0
All	2072	42	42	0	1	1	0	2	2	0	3	3	0
All	2073	42	42	0	1	1	0	2	2	0	3	3	0
All	2074	42	42	0	1	1	0	2	2	0	3	3	0
All	2075	42	42	0	1	1	0	2	2	0	3	3	0
All	2076	42	42	0	1	1	0	2	2	0	2	2	0
All	2077	42	42	0	1	1	0	1	1	0	2	2	0
All	2078	42	42	0	1	1	0	1	1	0	2	2	0

All	2079	42	42	0	1	1	0	1	1	0	2	2	0
All	2080	42	42	0	0	0	0	1	1	0	2	2	0
All	2081	42	42	0	0	0	0	1	1	0	2	2	0
All	2082	42	42	0	0	0	0	1	1	0	2	2	0
Car	Total	2298	2298	0	47	47	0	98	98	0	150	150	0
LGV Personal	Total	52	52	0	1	1	0	2	2	0	3	3	0
LGV Freight	Total	378	378	0	8	8	0	16	16	0	25	25	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2727	2727	0	55	55	0	116	116	0	179	179	0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	815	815	0	16	16	0	33	33	0	49	49	0
AM peak	2037	622	622	0	14	14	0	28	28	0	43	43	0
PM peak	2023	839	825	-15	17	17	-0	34	33	-1	51	50	-1
PM peak	2037	635	609	-26	15	14	-1	29	28	-1	44	42	-2
Inter-peak	2023	2774	2774	0	55	55	0	113	113	0	168	168	0
Inter-peak	2037	2207	2207	0	51	51	0	101	101	0	151	151	0
Off-peak	2023	402	402	0	8	8	0	16	16	0	24	24	0
Off-peak	2037	321	321	0	7	7	0	15	15	0	22	22	0
AM peak	Total	34146	34146	0	692	692	0	1490	1490	0	2290	2290	0
PM peak	Total	34652	33310	-1342	702	675	-27	1512	1453	-59	2323	2231	-91
Inter-peak	Total	122713	122713	0	2486	2486	0	5364	5364	0	8244	8244	0



Off-peak	Total	17836	17836	0	361	361	0	780	780	0	1198	1198	0
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NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	29	29	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	Total	495	495	0	10	10	0	21	21	0	32	32	0
PM peak	Total	520	520	0	11	11	0	22	22	0	34	34	0
Inter-peak	Total	1495	1495	0	30	30	0	64	64	0	98	98	0
Off-peak	Total	217	217	0	4	4	0	9	9	0	14	14	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	385	0	5	10	0	-3
Road	2024	385	0	5	10	0	-3
Road	2025	384	0	5	10	0	-3
Road	2026	384	0	5	9	0	-3
Road	2027	385	0	5	9	0	-3
Road	2028	385	0	5	9	0	-3
Road	2029	386	0	6	9	0	-3
Road	2030	387	0	6	9	0	-3
Road	2031	387	0	6	9	0	-3
Road	2032	388	0	6	9	0	-3
Road	2033	388	0	6	8	0	-3
Road	2034	389	0	6	8	0	-3
Road	2035	389	0	6	8	0	-3
Road	2036	389	0	6	8	0	-3
Road	2037	390	0	6	8	0	-3
Road	2038	384	0	5	8	0	-3
Road	2039	378	0	5	7	0	-3
Road	2040	373	0	5	7	0	-3
Road	2041	367	0	5	7	0	-3
Road	2042	362	0	4	7	0	-3
Road	2043	356	0	4	6	0	-3

Road	2044	351	0	4	6	0	-2
Road	2045	345	0	4	6	0	-2
Road	2046	340	0	4	6	0	-2
Road	2047	335	0	4	6	0	-2
Road	2048	329	0	4	5	0	-2
Road	2049	324	0	3	5	0	-2
Road	2050	319	0	3	5	0	-2
Road	2051	316	0	3	5	0	-2
Road	2052	313	0	3	5	0	-2
Road	2053	310	0	3	5	0	-2
Road	2054	307	0	3	4	0	-2
Road	2055	304	0	3	4	0	-2
Road	2056	301	0	3	4	0	-2
Road	2057	298	0	3	4	0	-2
Road	2058	295	0	3	4	0	-2
Road	2059	292	0	3	4	0	-2
Road	2060	289	0	3	4	0	-2
Road	2061	286	0	2	4	0	-2
Road	2062	283	0	2	4	0	-1
Road	2063	281	0	2	3	0	-1
Road	2064	278	0	2	3	0	-1
Road	2065	276	0	2	3	0	-1
Road	2066	274	0	2	3	0	-1
Road	2067	271	0	2	3	0	-1
Road	2068	269	0	2	3	0	-1

Road	2069	267	0	2	3	0	-1
Road	2070	264	0	2	3	0	-1
Road	2071	262	0	2	3	0	-1
Road	2072	260	0	2	3	0	-1
Road	2073	258	0	2	3	0	-1
Road	2074	255	0	2	2	0	-1
Road	2075	253	0	2	2	0	-1
Road	2076	251	0	2	2	0	-1
Road	2077	249	0	2	2	0	-1
Road	2078	246	0	2	2	0	-1
Road	2079	244	0	2	2	0	-1
Road	2080	242	0	2	2	0	-1
Road	2081	240	0	1	2	0	-1
Road	2082	238	0	1	2	0	-1
Road	Total	19136	0	206	317	0	-121

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	298	0	2	2	0	-1
Car	2037	301	0	3	2	0	-2
LGV Personal	2023	4	0	-0	0	0	0
LGV Personal	2037	4	0	-0	0	0	0
LGV Freight	2023	63	0	-1	2	0	0

LGV Freight	2037	64	0	-0	2	0	0
OGV1	2023	12	0	1	2	0	-0
OGV1	2037	12	0	1	2	0	-0
OGV2	2023	9	0	2	3	0	-1
OGV2	2037	9	0	2	3	0	-1
All	2023	385	0	5	10	0	-3
All	2037	390	0	6	8	0	-3
Car	Total	14789	0	97	78	0	-58
LGV Personal Total		188	0	-1	0	0	0
LGV Freight Total		3124	0	-4	65	0	2
OGV1	Total	603	0	34	73	0	-20
OGV2	Total	432	0	79	101	0	-46
All	Total	19136	0	206	317	0	-121

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri		PT_fares_(pri		Taxes	
All	2023	385	0	5	10	0	-3	
All	2037	390	0	6	8	0	-3	
All	Total	19136	0	206	317	0	-121	

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	100	0	3	10	0	-1
Business	2037	101	0	3	8	0	-2
Commuting	2023	117	0	1	0	0	-0
Commuting	2037	119	0	1	0	0	-1
Other	2023	168	0	1	0	0	-1
Other	2037	169	0	2	0	0	-1
Business	Total	4973	0	114	317	0	-66
Commuting	Total	5852	0	32	0	0	-19
Other	Total	8311	0	60	0	0	-36

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	32	0	0	1	0	0
AM peak	2037	45	0	0	1	0	0
PM peak	2023	331	0	5	8	0	-3
PM peak	2037	325	0	6	6	0	-3
Inter-peak	2023	22	0	0	1	0	0
Inter-peak	2037	20	0	0	1	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	0	0	0	0	0	0
AM peak	Total	2105	0	0	42	0	0
PM peak	Total	16016	0	206	246	0	-121

Inter-peak	Total	991	0	0	29	0	0
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Off-peak	Total	25	0	0	1	0	0
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NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	2	0
Car	Business	2037	0	0	-0	1	0	3
Car	Business	Total	0	0	-0	53	16	135
Car	Commuting	2023	0	0	-0	3	13	0
Car	Commuting	2037	0	0	-0	4	0	16
Car	Commuting	Total	0	0	-1	252	100	850
Car	Other	2023	0	0	-0	9	40	0
Car	Other	2037	0	0	-0	14	0	49
Car	Other	Total	0	0	-4	800	300	2552
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	0	0	1
LGV Personal	Other	Total	0	0	-0	20	7	58
LGV Freight	Business	2023	0	0	-0	1	5	0

LGV Freight	Business	2037	0	0	-0	2	0	7
LGV Freight	Business	Total	0	0	-1	118	41	350
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	1	0
OGV1	Business	2037	0	0	-0	1	0	1
OGV1	Business	Total	0	0	-0	29	6	50
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	1	0
OGV2	Business	2037	0	0	-0	0	0	1
OGV2	Business	Total	0	0	-0	18	5	39
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0



OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	4	13	0
Car	Business	2037	0	0	-0	4	0	12
Car	Business	Total	0	0	-1	212	88	514
Car	Commuting	2023	0	0	-0	19	98	0
Car	Commuting	2037	0	0	-0	26	0	94
Car	Commuting	Total	0	0	-6	1216	679	3964
Car	Other	2023	0	0	-0	30	134	0
Car	Other	2037	0	0	-0	37	0	129
Car	Other	Total	0	0	-9	1768	930	5433
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	3	0
LGV Personal	Other	2037	0	0	-0	1	0	3
LGV Personal	Other	Total	0	0	-0	43	21	124
LGV Freight	Business	2023	0	0	-0	12	51	0
LGV Freight	Business	2037	0	0	-0	15	0	49

LGV Freight	Business	Total	0	0	-3	720	352	2056
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	4	8	0
OGV1	Business	2037	0	0	-0	4	0	8
OGV1	Business	Total	0	0	-1	207	58	339
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	2	6	0
OGV2	Business	2037	0	0	-0	3	0	6
OGV2	Business	Total	0	0	-0	126	45	262
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	4	15	0
Car	Business	2037	0	0	-0	5	0	14
Car	Business	Total	0	0	-1	232	101	564
Car	Commuting	2023	0	0	-0	19	99	0
Car	Commuting	2037	0	0	-0	26	0	95
Car	Commuting	Total	0	0	-6	1216	683	3991
Car	Other	2023	0	0	-0	30	136	0
Car	Other	2037	0	0	-0	37	0	130
Car	Other	Total	0	0	-9	1768	939	5485
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	3	0
LGV Personal	Other	2037	0	0	-0	1	0	3
LGV Personal	Other	Total	0	0	-0	43	21	124
LGV Freight	Business	2023	0	0	-0	13	52	0
LGV Freight	Business	2037	0	0	-0	15	0	50
LGV Freight	Business	Total	0	0	-4	734	359	2096

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	4	11	0
OGV1	Business	2037	0	0	-0	5	0	10
OGV1	Business	Total	0	0	-1	232	74	405
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	3	11	0
OGV2	Business	2037	0	0	-0	3	0	10
OGV2	Business	Total	0	0	-1	155	75	383
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0



LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	1	0	0	0	0	0	0
OGV1	Business	2037	0	1	0	0	0	0	0	0
OGV1	Business	Total	0	85	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	61	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	12	0	0	0	0	0	0
OGV1	Business	2037	0	12	0	0	0	0	0	0
OGV1	Business	Total	0	603	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	9	0	0	0	0	0	0
OGV2	Business	2037	0	9	0	0	0	0	0	0
OGV2	Business	Total	0	432	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance





LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	15	0	0	0	0	0	0
OGV1	Business	2037	0	15	0	0	0	0	0	0
OGV1	Business	Total	0	710	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	14	0	0	0	0	0	0
OGV2	Business	2037	0	13	0	0	0	0	0	0
OGV2	Business	Total	0	612	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 13.26% 19.95%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	5852	5852
Vehicle operating costs	32	32
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	5884	5884

Consumer - Other user benefits	All Modes	Road
Travel Time	8311	8311
Vehicle operating costs	60	60
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	8371	8371

Business	All Modes	Road Personal	Road Freight
Travel Time	4973	813	4159
Vehicle operating costs	432	83	348
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	5404	896	4508

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-335	-335
NET BUSINESS IMPACT	5069	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	19324
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	141	141
Investment Costs	937	937
Developer Contributions	-335	-335

Grant/Subsidy Payments	0	0
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NET IMPACT	743	743
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Central Government Funding: Transport ALL MODES Road

Revenue	0	0
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Operating costs	0	0
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Investment costs	3640	3640
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Developer Contributions	0	0
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Grant/Subsidy Payments	0	0
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NET IMPACT	3640	3640
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Central Government Funding: Non-Transport

Indirect Tax Revenues	121	121
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TOTALS

Broad Transport Budget	4383	4383
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Wider Public Finances	121	121
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases

59

Economic Efficiency: Consumer Users (Commuting)	5884
Economic Efficiency: Consumer Users (Other)	8371
Economic Efficiency: Business Users and Providers	5069
Wider Public Finances (Indirect Taxation Revenues)	-121
Present Value of Benefits (PVB)	19262
Broad Transport Budget	4383
Present Value of Costs (PVC)	4383

#### OVERALL IMPACTS

Net Present Value (NPV)	14879
Benefit to Cost Ratio (BCR)	4.395

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-6\_Lowdham\_V4\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Core\_Results\_V4\_150B\6-Lowdham\_TUBA\_V4\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Core\_Results\_V4\_150B\6-Lowdham\_TUBA\_V4\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 3secs

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 11:38:43

ERRORS AND WARNINGS

2051 Warnings found in total (including any above)

Warning (147 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
4	1	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	4.248	4.248
4	2	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	4.704	4.704
4	3	2	LGV Personal	Other	All	2037	0.090	0.001	68.885	3.837	3.837
4	1	2	Car	Business	All	2037	0.090	0.001	68.885	12.485	12.485
4	2	2	Car	Business	All	2037	0.090	0.001	68.885	13.824	13.824
4	3	2	Car	Business	All	2037	0.090	0.001	68.885	11.275	11.275
4	1	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	31.154	31.154
4	2	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	34.496	34.496
4	3	2	LGV Freight	Business	All	2037	0.090	0.001	68.885	28.136	28.136
4	1	2	Car	Commuting	All	2037	0.090	0.001	68.885	79.518	79.518
4	2	2	Car	Commuting	All	2037	0.090	0.001	68.885	88.048	88.048
4	3	2	Car	Commuting	All	2037	0.090	0.001	68.885	71.814	71.814
4	1	2	OGV1	Business	All	2037	0.090	0.001	68.885	5.346	5.346
4	2	2	OGV1	Business	All	2037	0.090	0.001	68.885	5.920	5.920
4	3	2	OGV1	Business	All	2037	0.090	0.001	68.885	4.829	4.829



4	1	2	Car	Other	All	2037	0.090	0.001	68.885	152.089	152.089
4	2	2	Car	Other	All	2037	0.090	0.001	68.885	168.403	168.403
4	3	2	Car	Other	All	2037	0.090	0.001	68.885	137.354	137.354
4	1	2	OGV2	Business	All	2037	0.090	0.001	68.885	4.133	4.133
4	2	2	OGV2	Business	All	2037	0.090	0.001	68.885	4.576	4.576

Displayed 20 warnings of a total of 315 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.573	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.521	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.745	85.000
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.302	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.329	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.393	85.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.335	130.000
1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.472	130.000
1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.435	130.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.199	110.000
1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.277	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.559	110.000

1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.232	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	9.821	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.902	130.000

Displayed 20 warnings of a total of 840 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.039	110.000
4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.159	110.000
4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.759	110.000
4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.974	85.000
4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.031	85.000
4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.318	85.000
4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.513	85.000
4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.544	85.000
4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.695	85.000
4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.569	130.000
4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.602	130.000
4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.769	130.000
4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.794	130.000

4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.018	130.000
4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	5.134	130.000
4	4	4	Car	Commuting	All	2023	2.000	0.000	5128.205	0.000	130.000

Displayed 20 warnings of a total of 896 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484

2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291

2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500

2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894

2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961



2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105

2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023

2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000

2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000

2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000

2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000

2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000

2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000



2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000

2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897

2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000

2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000

2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438

2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000

2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000

2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000



2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000

2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000

2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000

2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000

2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898

2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000

2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000

2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000



6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912

2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873

2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116

2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695

2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057

2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407

2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421

2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683



2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146

2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879

2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

				max	min		
*							
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10

4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874

2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107

2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323

2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316

2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699



2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880

2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389

2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372

2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699

2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740

2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240

2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723

2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280



2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771

2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335

2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407

2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686

2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745

2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109

2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628



2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208

2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711

2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123

2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153

2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830

2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313

2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000

2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111



2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131

2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000

2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013

2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010

2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name TUBA-6\_Lowdham\_V4\_150B



Road	2021	0	0	0	0	0	0	0	0
Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0

Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0



Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0
Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0

Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	137	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0

Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0

Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. E000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3
Road	2027	0	3	3
Road	2028	0	5	5
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2

Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	4	4
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0

Road	2062	0	0	0
Road	2063	0	23	23
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	0	0
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1954	1954
Car	2023	PM peak	2091	2091
Car	2023	Inter-peak	5769	5769
Car	2023	Off-peak	837	837
Car	2023	All	10652	10652
Car	2037	AM peak	2038	2038
Car	2037	PM peak	2152	2152
Car	2037	Inter-peak	6018	6018
Car	2037	Off-peak	875	875
Car	2037	All	11083	11083
LGV Personal	2023	AM peak	35	35
LGV Personal	2023	PM peak	36	36
LGV Personal	2023	Inter-peak	122	122
LGV Personal	2023	Off-peak	18	18
LGV Personal	2023	All	211	211
LGV Personal	2037	AM peak	37	37
LGV Personal	2037	PM peak	37	37
LGV Personal	2037	Inter-peak	127	127
LGV Personal	2037	Off-peak	18	18
LGV Personal	2037	All	220	220
LGV Freight	2023	AM peak	260	260
LGV Freight	2023	PM peak	267	267
LGV Freight	2023	Inter-peak	891	891
LGV Freight	2023	Off-peak	129	129

LGV Freight	2023 All	1548	1548
LGV Freight	2037 AM peak	271	271
LGV Freight	2037 PM peak	275	275
LGV Freight	2037 Inter-peak	930	930
LGV Freight	2037 Off-peak	135	135
LGV Freight	2037 All	1611	1611
OGV1	2023 AM peak	71	71
OGV1	2023 PM peak	46	46
OGV1	2023 Inter-peak	426	426
OGV1	2023 Off-peak	62	62
OGV1	2023 All	605	605
OGV1	2037 AM peak	74	74
OGV1	2037 PM peak	47	47
OGV1	2037 Inter-peak	444	444
OGV1	2037 Off-peak	65	65
OGV1	2037 All	630	630
OGV2	2023 AM peak	44	44
OGV2	2023 PM peak	35	35
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	337	337
OGV2	2037 AM peak	46	46
OGV2	2037 PM peak	36	36
OGV2	2037 Inter-peak	234	234
OGV2	2037 Off-peak	34	34



OGV2	2037	All	351	351
All	2023	AM peak	2366	2366
All	2023	PM peak	2476	2476
All	2023	Inter-peak	7433	7433
All	2023	Off-peak	1078	1078
All	2023	All	13353	13353
All	2037	AM peak	2467	2467
All	2037	PM peak	2548	2548
All	2037	Inter-peak	7753	7753
All	2037	Off-peak	1127	1127
All	2037	All	13895	13895

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	503	0	1544	977	134	0	1539	967
Road	2037	480	0	762	630	122	0	757	622

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	782	661	100	778	662	100
Car	2037	566	303	1009	561	302	1009
LGV Personal	2023	1	40	1	1	40	1

LGV Personal	2037	1	29	10	1	29	10
LGV Freight	2023	6	292	4	6	293	4
LGV Freight	2037	9	212	75	8	212	75
OGV1	2023	0	201	0	0	200	0
OGV1	2037	0	182	0	0	180	0
OGV2	2023	0	185	0	0	182	0
OGV2	2037	0	144	0	0	142	0
All	2023	789	1379	104	785	1376	104
All	2037	575	871	1094	570	866	1094
Car	Total	29588	16818	72322	29347	16793	72322
LGV Personal	Total	78	1591	943	77	1592	943
LGV Freight	Total	569	11663	6912	562	11670	6912
OGV1	Total	0	10623	0	0	10542	0
OGV2	Total	0	8723	0	0	8558	0
All	Total	30235	49418	80177	29985	49155	80177

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3220	3213	-7	64	64	-0	131	130	-0	195	195	-0
Car	2037	1904	1892	-12	44	44	-0	87	86	-1	131	130	-1
LGV Personal	2023	98	98	0	2	2	0	4	4	0	6	6	0
LGV Personal	2037	73	73	-0	2	2	-0	3	3	-0	5	5	-0
LGV Freight	2023	720	722	2	14	14	0	29	29	0	44	44	0
LGV Freight	2037	532	532	-0	12	12	-0	24	24	-0	37	37	-0

OGV1	2023	486	483	-3	10	10	-0	20	20	-0	29	29	-0
OGV1	2037	440	436	-3	10	10	-0	20	20	-0	30	30	-0
OGV2	2023	447	440	-7	9	9	-0	18	18	-0	27	27	-0
OGV2	2037	350	343	-7	8	8	-0	16	16	-0	24	24	-0
All	2023	4972	4957	-15	99	99	-0	202	201	-1	301	300	-1
All	2024	4883	4867	-16	97	97	-0	194	193	-1	291	290	-1
All	2025	4762	4745	-17	94	94	-0	185	185	-1	279	278	-1
All	2026	4640	4622	-18	88	88	-0	177	176	-1	265	264	-1
All	2027	4520	4501	-19	85	85	-0	169	168	-1	254	253	-1
All	2028	4404	4385	-20	80	80	-0	163	162	-1	243	242	-1
All	2029	4293	4272	-20	78	77	-0	155	154	-1	233	232	-1
All	2030	4130	4109	-21	72	72	-0	146	145	-1	218	217	-1
All	2031	3977	3956	-21	74	73	-0	148	147	-1	221	220	-1
All	2032	3836	3814	-21	75	75	-0	150	149	-1	225	224	-1
All	2033	3706	3684	-22	76	75	-0	150	149	-1	226	225	-1
All	2034	3588	3566	-22	75	75	-0	152	151	-1	227	225	-1
All	2035	3481	3460	-22	76	75	-0	151	150	-1	228	226	-1
All	2036	3385	3363	-22	76	75	-0	152	151	-1	227	226	-1
All	2037	3298	3276	-22	76	75	-1	151	150	-1	226	225	-2
All	2038	3210	3188	-22	75	74	-1	150	149	-1	225	223	-2
All	2039	3135	3113	-21	74	74	-1	149	148	-1	224	222	-2
All	2040	3059	3038	-21	74	73	-1	148	147	-1	222	220	-2
All	2041	2984	2963	-21	73	73	-1	145	144	-1	219	217	-2
All	2042	2924	2904	-20	72	71	-0	145	144	-1	216	215	-2
All	2043	2871	2851	-20	71	71	-0	143	142	-1	215	213	-1

All	2044	2822	2802	-20	71	70	-0	142	141	-1	212	211	-1
All	2045	2778	2758	-20	70	70	-0	140	139	-1	210	209	-1
All	2046	2735	2716	-19	69	68	-0	138	137	-1	207	206	-1
All	2047	2698	2679	-19	68	68	-0	137	136	-1	206	204	-1
All	2048	2664	2645	-19	68	67	-0	135	134	-1	203	201	-1
All	2049	2632	2613	-19	67	66	-0	133	132	-1	200	199	-1
All	2050	2601	2582	-19	66	65	-0	132	131	-1	198	196	-1
All	2051	2601	2582	-19	65	65	-0	132	132	-1	200	198	-1
All	2052	2601	2582	-19	65	65	-0	133	132	-1	201	199	-1
All	2053	2601	2582	-19	65	64	-0	133	132	-1	202	200	-1
All	2054	2601	2582	-19	64	63	-0	133	132	-1	203	201	-1
All	2055	2601	2582	-19	64	63	-0	133	132	-1	203	202	-1
All	2056	2601	2582	-19	63	62	-0	133	132	-1	204	202	-1
All	2057	2601	2582	-19	62	61	-0	133	132	-1	204	202	-1
All	2058	2601	2582	-19	61	60	-0	132	131	-1	203	202	-1
All	2059	2601	2582	-19	60	60	-0	131	130	-1	203	202	-1
All	2060	2601	2582	-19	59	58	-0	130	129	-1	202	201	-1
All	2061	2601	2582	-19	57	57	-0	129	128	-1	200	199	-1
All	2062	2601	2582	-19	56	56	-0	127	126	-1	199	198	-1
All	2063	2601	2582	-19	55	54	-0	126	125	-1	197	195	-1
All	2064	2601	2582	-19	53	53	-0	124	123	-1	194	193	-1
All	2065	2601	2582	-19	52	51	-0	122	121	-1	192	190	-1
All	2066	2601	2582	-19	50	50	-0	120	119	-1	189	188	-1
All	2067	2601	2582	-19	49	48	-0	117	117	-1	186	184	-1
All	2068	2601	2582	-19	47	47	-0	115	114	-1	183	181	-1

All	2069	2601	2582	-19	46	45	-0	112	112	-1	179	178	-1
All	2070	2601	2582	-19	44	44	-0	110	109	-1	176	174	-1
All	2071	2601	2582	-19	42	42	-0	107	107	-1	172	171	-1
All	2072	2601	2582	-19	41	41	-0	105	104	-1	169	167	-1
All	2073	2601	2582	-19	39	39	-0	102	101	-1	165	164	-1
All	2074	2601	2582	-19	38	38	-0	99	99	-1	161	160	-1
All	2075	2601	2582	-19	36	36	-0	97	96	-1	157	156	-1
All	2076	2601	2582	-19	35	34	-0	94	93	-1	153	152	-1
All	2077	2601	2582	-19	33	33	-0	91	91	-1	149	148	-1
All	2078	2601	2582	-19	32	32	-0	89	88	-1	145	144	-1
All	2079	2601	2582	-19	31	30	-0	86	85	-1	141	140	-1
All	2080	2601	2582	-19	29	29	-0	83	82	-1	137	136	-1
All	2081	2601	2582	-19	28	28	-0	81	80	-1	133	132	-1
All	2082	2601	2582	-19	27	26	-0	78	77	-1	129	129	-1
Car	Total	101975	101413	-562	2061	2050	-11	4410	4385	-25	6760	6722	-38
LGV Personal	Total	4011	4011	0	81	81	0	175	175	0	268	268	0
LGV Freight	Total	29405	29408	3	595	595	0	1281	1281	0	1968	1968	0
OGV1	Total	25711	25515	-196	520	516	-4	1128	1119	-9	1736	1722	-13
OGV2	Total	21112	20714	-398	427	418	-8	924	906	-17	1421	1394	-27
All	Total	182214	181061	-1153	3684	3661	-23	7917	7867	-51	12153	12075	-78

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	25	25	0	0	0	0	0	0	1	1	0	

Car	2037	58	58	0	1	1	0	3	3	0	4	4	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	27	27	0	0	0	0	1	1	0	1	1	0
All	2024	34	34	0	0	0	0	1	1	0	1	1	0
All	2025	46	46	0	1	1	0	1	1	0	2	2	0
All	2026	58	58	0	1	1	0	2	2	0	2	2	0
All	2027	67	67	0	1	1	0	2	2	0	3	3	0
All	2028	73	73	0	1	1	0	2	2	0	4	4	0
All	2029	77	77	0	1	1	0	3	3	0	4	4	0
All	2030	76	76	0	1	1	0	3	3	0	4	4	0
All	2031	77	77	0	1	1	0	3	3	0	4	4	0
All	2032	77	77	0	2	2	0	3	3	0	4	4	0
All	2033	75	75	0	2	2	0	3	3	0	5	5	0
All	2034	73	73	0	2	2	0	3	3	0	5	5	0
All	2035	70	70	0	2	2	0	3	3	0	5	5	0
All	2036	67	67	0	2	2	0	3	3	0	4	4	0
All	2037	63	63	0	2	2	0	3	3	0	4	4	0
All	2038	59	59	0	1	1	0	3	3	0	4	4	0

All	2039	55	55	0	1	1	0	3	3	0	4	4	0
All	2040	51	51	0	1	1	0	2	2	0	4	4	0
All	2041	52	52	0	1	1	0	3	3	0	4	4	0
All	2042	52	52	0	1	1	0	3	3	0	4	4	0
All	2043	52	52	0	1	1	0	3	3	0	4	4	0
All	2044	51	51	0	1	1	0	3	3	0	4	4	0
All	2045	51	51	0	1	1	0	3	3	0	4	4	0
All	2046	50	50	0	1	1	0	3	3	0	4	4	0
All	2047	49	49	0	1	1	0	2	2	0	4	4	0
All	2048	48	48	0	1	1	0	2	2	0	4	4	0
All	2049	47	47	0	1	1	0	2	2	0	4	4	0
All	2050	45	45	0	1	1	0	2	2	0	3	3	0
All	2051	45	45	0	1	1	0	2	2	0	3	3	0
All	2052	45	45	0	1	1	0	2	2	0	4	4	0
All	2053	45	45	0	1	1	0	2	2	0	4	4	0
All	2054	45	45	0	1	1	0	2	2	0	4	4	0
All	2055	45	45	0	1	1	0	2	2	0	4	4	0
All	2056	45	45	0	1	1	0	2	2	0	4	4	0
All	2057	45	45	0	1	1	0	2	2	0	4	4	0
All	2058	45	45	0	1	1	0	2	2	0	4	4	0
All	2059	45	45	0	1	1	0	2	2	0	4	4	0
All	2060	45	45	0	1	1	0	2	2	0	4	4	0
All	2061	45	45	0	1	1	0	2	2	0	4	4	0
All	2062	45	45	0	1	1	0	2	2	0	3	3	0
All	2063	45	45	0	1	1	0	2	2	0	3	3	0

All	2064	45	45	0	1	1	0	2	2	0	3	3	0
All	2065	45	45	0	1	1	0	2	2	0	3	3	0
All	2066	45	45	0	1	1	0	2	2	0	3	3	0
All	2067	45	45	0	1	1	0	2	2	0	3	3	0
All	2068	45	45	0	1	1	0	2	2	0	3	3	0
All	2069	45	45	0	1	1	0	2	2	0	3	3	0
All	2070	45	45	0	1	1	0	2	2	0	3	3	0
All	2071	45	45	0	1	1	0	2	2	0	3	3	0
All	2072	45	45	0	1	1	0	2	2	0	3	3	0
All	2073	45	45	0	1	1	0	2	2	0	3	3	0
All	2074	45	45	0	1	1	0	2	2	0	3	3	0
All	2075	45	45	0	1	1	0	2	2	0	3	3	0
All	2076	45	45	0	1	1	0	2	2	0	3	3	0
All	2077	45	45	0	1	1	0	2	2	0	3	3	0
All	2078	45	45	0	1	1	0	2	2	0	3	3	0
All	2079	45	45	0	1	1	0	2	2	0	2	2	0
All	2080	45	45	0	1	1	0	1	1	0	2	2	0
All	2081	45	45	0	1	1	0	1	1	0	2	2	0
All	2082	45	45	0	0	0	0	1	1	0	2	2	0
Car	Total	2807	2807	-0	57	57	0	119	119	0	183	183	0
LGV Personal	Total	32	32	0	1	1	0	1	1	0	2	2	0
LGV Freight	Total	238	238	0	5	5	0	10	10	0	16	16	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	3078	3078	0	63	63	0	131	131	0	202	202	0



CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	842	842	0	17	17	0	34	34	0	51	51	0
AM peak	2037	546	546	0	13	13	0	25	25	0	38	38	0
PM peak	2023	870	855	-15	17	17	-0	35	35	-1	53	52	-1
PM peak	2037	561	539	-22	13	12	-1	26	25	-1	39	37	-2
Inter-peak	2023	2846	2846	0	57	57	0	115	115	0	172	172	0
Inter-peak	2037	1913	1913	0	44	44	0	87	87	0	131	131	0
Off-peak	2023	413	413	0	8	8	0	17	17	0	25	25	0
Off-peak	2037	278	278	0	6	6	0	13	13	0	19	19	0
AM peak	Total	30009	30009	0	607	607	0	1303	1303	0	1999	1999	0
PM peak	Total	30663	29510	-1153	620	597	-23	1331	1280	-51	2042	1964	-78
Inter-peak	Total	106119	106119	0	2146	2146	0	4613	4613	0	7083	7083	0
Off-peak	Total	15423	15423	0	312	312	0	671	671	0	1029	1029	0

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	2037	12	12	0	0	0	0	1	1	0	1	1	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	12	12	0	0	0	0	1	1	0	1	1	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	34	34	0	1	1	0	2	2	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	Total	562	562	0	11	11	0	24	24	0	37	37	0
PM peak	Total	592	592	0	12	12	0	25	25	0	39	39	0
Inter-peak	Total	1680	1680	0	34	34	0	71	71	0	110	110	0
Off-peak	Total	244	244	0	5	5	0	10	10	0	16	16	0

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User_Charges		Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel		
Road	2023	370	0	5	10	0	-3
Road	2024	370	0	5	10	0	-3
Road	2025	370	0	5	10	0	-3
Road	2026	370	0	5	9	0	-3
Road	2027	370	0	5	9	0	-3
Road	2028	369	0	5	9	0	-3

Road	2029	369	0	6	9	0	-3
Road	2030	368	0	5	9	0	-3
Road	2031	367	0	5	9	0	-3
Road	2032	365	0	5	9	0	-3
Road	2033	364	0	5	8	0	-3
Road	2034	363	0	5	8	0	-3
Road	2035	361	0	5	8	0	-3
Road	2036	360	0	5	8	0	-3
Road	2037	358	0	5	8	0	-3
Road	2038	351	0	4	8	0	-3
Road	2039	344	0	4	7	0	-2
Road	2040	337	0	4	7	0	-2
Road	2041	330	0	4	7	0	-2
Road	2042	324	0	4	7	0	-2
Road	2043	317	0	4	6	0	-2
Road	2044	310	0	3	6	0	-2
Road	2045	304	0	3	6	0	-2
Road	2046	297	0	3	6	0	-2
Road	2047	291	0	3	6	0	-2
Road	2048	285	0	3	5	0	-2
Road	2049	279	0	3	5	0	-2
Road	2050	273	0	3	5	0	-2
Road	2051	268	0	3	5	0	-1
Road	2052	264	0	2	5	0	-1
Road	2053	259	0	2	5	0	-1

Road	2054	255	0	2	4	0	-1
Road	2055	251	0	2	4	0	-1
Road	2056	247	0	2	4	0	-1
Road	2057	243	0	2	4	0	-1
Road	2058	240	0	2	4	0	-1
Road	2059	236	0	2	4	0	-1
Road	2060	232	0	2	4	0	-1
Road	2061	229	0	2	4	0	-1
Road	2062	225	0	2	4	0	-1
Road	2063	222	0	2	3	0	-1
Road	2064	219	0	2	3	0	-1
Road	2065	215	0	2	3	0	-1
Road	2066	212	0	2	3	0	-1
Road	2067	209	0	2	3	0	-1
Road	2068	206	0	2	3	0	-1
Road	2069	203	0	2	3	0	-1
Road	2070	201	0	2	3	0	-1
Road	2071	198	0	2	3	0	-1
Road	2072	195	0	1	3	0	-1
Road	2073	192	0	1	3	0	-1
Road	2074	189	0	1	2	0	-1
Road	2075	186	0	1	2	0	-1
Road	2076	184	0	1	2	0	-1
Road	2077	181	0	1	2	0	-1
Road	2078	178	0	1	2	0	-1

Road	2079	176	0	1	2	0	-1
Road	2080	173	0	1	2	0	-1
Road	2081	171	0	1	2	0	-1
Road	2082	168	0	1	2	0	-1
Road	Total	16361	0	178	317	0	-103

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	286	0	3	2	0	-1
Car	2037	277	0	3	2	0	-2
LGV Personal	2023	4	0	-0	0	0	0
LGV Personal	2037	4	0	0	0	0	-0
LGV Freight	2023	60	0	-1	2	0	0
LGV Freight	2037	58	0	0	2	0	-0
OGV1	2023	12	0	1	2	0	-0
OGV1	2037	11	0	1	2	0	-0
OGV2	2023	8	0	2	3	0	-1
OGV2	2037	8	0	1	3	0	-1
All	2023	370	0	5	10	0	-3
All	2037	358	0	5	8	0	-3
Car	Total	12644	0	94	78	0	-55
LGV Personal	Total	161	0	-0	0	0	0
LGV Freight	Total	2671	0	-2	65	0	1

OGV1	Total	516	0	28	73	0	-16
OGV2	Total	369	0	58	101	0	-33
All	Total	16361	0	178	317	0	-103

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
All	2023	370	0	5	10	0	-3
All	2037	358	0	5	8	0	-3
All	Total	16361	0	178	317	0	-103

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	96	0	2	10	0	-1
Business	2037	93	0	2	8	0	-1
Commuting	2023	112	0	1	0	0	-0
Commuting	2037	110	0	1	0	0	-0
Other	2023	161	0	2	0	0	-1
Other	2037	155	0	2	0	0	-1
Business	Total	4251	0	89	317	0	-51
Commuting	Total	5003	0	31	0	0	-18
Other	Total	7107	0	59	0	0	-34

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect		
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes	
AM peak	2023	31	0	0	1	0	0	
AM peak	2037	41	0	0	1	0	0	
PM peak	2023	318	0	5	8	0	-3	
PM peak	2037	298	0	5	6	0	-3	
Inter-peak	2023	21	0	0	1	0	0	
Inter-peak	2037	18	0	0	1	0	0	
Off-peak	2023	1	0	0	0	0	0	
Off-peak	2037	0	0	0	0	0	0	
AM peak	Total	1791	0	0	42	0	0	
PM peak	Total	13700	0	178	246	0	-103	
Inter-peak	Total	849	0	0	29	0	0	
Off-peak	Total	21	0	0	1	0	0	

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	2	0
Car	Business	2037	0	0	-0	1	0	3
Car	Business	Total	0	0	-0	53	16	135
Car	Commuting	2023	0	0	-0	3	13	0

Car	Commuting	2037	0	0	-0	4	0	16
Car	Commuting	Total	0	0	-1	252	100	850
Car	Other	2023	0	0	-0	9	40	0
Car	Other	2037	0	0	-0	14	0	49
Car	Other	Total	0	0	-4	800	300	2552
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	0	0	1
LGV Personal	Other	Total	0	0	-0	20	7	58
LGV Freight	Business	2023	0	0	-0	1	5	0
LGV Freight	Business	2037	0	0	-0	2	0	7
LGV Freight	Business	Total	0	0	-1	118	41	350
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	1	0
OGV1	Business	2037	0	0	-0	1	0	1



OGV1	Business	Total	0	0	-0	29	6	50
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	1	0
OGV2	Business	2037	0	0	-0	0	0	1
OGV2	Business	Total	0	0	-0	18	5	39
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	3	12	0
Car	Business	2037	0	0	-0	4	0	11
Car	Business	Total	0	0	-1	180	84	431
Car	Commuting	2023	0	0	-0	18	94	0
Car	Commuting	2037	0	0	-0	24	0	86

Car	Commuting	Total	0	0	-5	1036	649	3324
Car	Other	2023	0	0	-0	29	129	0
Car	Other	2037	0	0	-0	34	0	118
Car	Other	Total	0	0	-8	1508	890	4556
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	3	0
LGV Personal	Other	2037	0	0	-0	1	0	3
LGV Personal	Other	Total	0	0	-0	37	20	104
LGV Freight	Business	2023	0	0	-0	12	49	0
LGV Freight	Business	2037	0	0	-0	14	0	45
LGV Freight	Business	Total	0	0	-3	613	337	1724
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	4	8	0
OGV1	Business	2037	0	0	-0	4	0	7
OGV1	Business	Total	0	0	-1	176	56	284

OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	2	6	0
OGV2	Business	2037	0	0	-0	2	0	6
OGV2	Business	Total	0	0	-0	107	43	220
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	4	14	0
Car	Business	2037	0	0	-0	5	0	13
Car	Business	Total	0	0	-1	201	97	481
Car	Commuting	2023	0	0	-0	18	95	0
Car	Commuting	2037	0	0	-0	24	0	87
Car	Commuting	Total	0	0	-5	1036	654	3349

Car	Other	2023	0	0	-0	29	130	0
Car	Other	2037	0	0	-0	34	0	120
Car	Other	Total	0	0	-8	1508	900	4605
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	-0	1	3	0
LGV Personal Other		2037	0	0	-0	1	0	3
LGV Personal Other		Total	0	0	-0	37	20	104
LGV Freight Business		2023	0	0	-0	12	50	0
LGV Freight Business		2037	0	0	-0	14	0	46
LGV Freight Business		Total	0	0	-3	628	344	1765
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	-0	4	10	0
OGV1 Business		2037	0	0	-0	5	0	9
OGV1 Business		Total	0	0	-1	201	71	345
OGV1 Commuting		2023	0	0	0	0	0	0

OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	3	11	0
OGV2	Business	2037	0	0	-0	3	0	9
OGV2	Business	Total	0	0	-1	136	71	322
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	3	0	0	0	0	0	0
Car	Business	2037	0	3	0	0	0	0	0	0
Car	Business	Total	0	204	0	0	0	0	0	0
Car	Commuting	2023	0	16	0	0	0	0	0	0
Car	Commuting	2037	0	21	0	0	0	0	0	0
Car	Commuting	Total	0	1200	0	0	0	0	0	0
Car	Other	2023	0	49	0	0	0	0	0	0



OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	61	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	16	0	0	0	0	0	0
Car	Business	2037	0	15	0	0	0	0	0	0
Car	Business	Total	0	695	0	0	0	0	0	0
Car	Commuting	2023	0	112	0	0	0	0	0	0
Car	Commuting	2037	0	110	0	0	0	0	0	0
Car	Commuting	Total	0	5003	0	0	0	0	0	0
Car	Other	2023	0	158	0	0	0	0	0	0
Car	Other	2037	0	152	0	0	0	0	0	0

Car	Other	Total	0	6946	0	0	0	0	0	0
LGV Personal Business		2023	0	0	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0	0	0
LGV Personal Other		2023	0	4	0	0	0	0	0	0
LGV Personal Other		2037	0	4	0	0	0	0	0	0
LGV Personal Other		Total	0	161	0	0	0	0	0	0
LGV Freight Business		2023	0	60	0	0	0	0	0	0
LGV Freight Business		2037	0	58	0	0	0	0	0	0
LGV Freight Business		Total	0	2671	0	0	0	0	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0	0	0
OGV1 Business		2023	0	12	0	0	0	0	0	0
OGV1 Business		2037	0	11	0	0	0	0	0	0
OGV1 Business		Total	0	516	0	0	0	0	0	0
OGV1 Commuting		2023	0	0	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0	0	0
OGV1 Commuting		Total	0	0	0	0	0	0	0	0



OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	8	0	0	0	0	0	0
OGV2	Business	2037	0	8	0	0	0	0	0	0
OGV2	Business	Total	0	369	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	18	0	0	0	0	0	0
Car	Business	2037	0	17	0	0	0	0	0	0
Car	Business	Total	0	778	0	0	0	0	0	0
Car	Commuting	2023	0	113	0	0	0	0	0	0
Car	Commuting	2037	0	111	0	0	0	0	0	0
Car	Commuting	Total	0	5034	0	0	0	0	0	0
Car	Other	2023	0	159	0	0	0	0	0	0
Car	Other	2037	0	154	0	0	0	0	0	0
Car	Other	Total	0	7005	0	0	0	0	0	0



OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	14	0	0	0	0	0	0
OGV2	Business	2037	0	12	0	0	0	0	0	0
OGV2	Business	Total	0	529	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 12.71% 19.80%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	5003	5003
Vehicle operating costs	31	31
User charges	0	0
During Construction & Maintenance	0	0

NET CONSUMER - COMMUTING BENEFITS      5034      5034

Consumer - Other user benefits      All Modes      Road

Travel Time      7107      7107

Vehicle operating costs      59      59

User charges      0      0

During Construction & Maintenance      0      0

NET CONSUMER - OTHER BENEFITS      7165      7165

Business      All Modes Road Personal Road Freight

Travel Time      4251      695      3556

Vehicle operating costs      406      83      323

User charges      0      0      0

During Construction & Maintenance      0      0      0

Subtotal      4658      778      3879

Private Sector Provider Impacts

Revenue      0      0

Operating costs      0      0

Investment costs      0      0

Grant/subsidy      0      0

Subtotal      0      0

Other business Impacts

Developer contributions      -335      -335

NET BUSINESS IMPACT 4323

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE) 16522

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	141	141
Investment Costs	937	937
Developer Contributions	-335	-335
Grant/Subsidy Payments	0	0
NET IMPACT	743	743

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	3640	3640
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3640	3640

Central Government Funding: Non-Transport

Indirect Tax Revenues	103	103
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TOTALS

Broad Transport Budget	4383	4383
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Wider Public Finances	103	103
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	51
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Economic Efficiency: Consumer Users (Commuting)	5034
---	------

Economic Efficiency: Consumer Users (Other)	7165
---	------

Economic Efficiency: Business Users and Providers	4323
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Wider Public Finances (Indirect Taxation Revenues)	-103
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Present Value of Benefits (PVB)	16470
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Broad Transport Budget	4383
------------------------	------

Present Value of Costs (PVC)	4383
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#### OVERALL IMPACTS

Net Present Value (NPV)	12087
Benefit to Cost Ratio (BCR)	3.758

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-6\_Lowdham\_V4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Core\_Results\_SensTest\_V4\_15OB\6-Lowdham\_TUBA\_V4\_SensitivityTest\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Core\_Results\_SensTest\_V4\_15OB\6-Lowdham\_TUBA\_V4\_SensitivityTest\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 6secs



SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-6\_Lowdham\_V4\_High\_150B

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2024 2025 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	502.86	F	119.37	1
C	1	CEN	5273.71	F	119.37	1
L	1	CEN	68.25	F	119.37	1
S	1	CEN	20.61	F	119.37	1
P	1	LOC	76.6705	F	119.37	1

C	1	LOC	1246.721	F	119.37	1
S	1	LOC	45.7565	F	119.37	1
D	1	LOC	517.5	F	119.37	1
L	1	LOC	10.2375	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	23.50	36.90	0.00	0.00	0.00	0.00	0.00
2021	1	83.20	23.50	63.10	50.00	0.00	0.00	0.00	11.11
2022	1	16.80	35.40	0.00	50.00	0.00	0.00	0.00	22.22
2023	1	0.00	17.60	0.00	0.00	0.00	0.00	0.00	66.67
2024	1	0.00	0.00	0.00	0.00	0.975	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.953	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.932	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.911	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	1.788	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.870	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.851	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.831	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.813	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	5.028	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.777	0.0	0.0	0.0

2035	1	0.0	0.0	0.0	0.0	0.759	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.742	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.725	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.424	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.693	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.678	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.662	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.647	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	27.234	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.619	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.605	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.591	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.578	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	2.458	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.552	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.540	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.528	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.516	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	3.190	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.493	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.482	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.471	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.460	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.904	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.440	0.0	0.0	0.0

2060	1	0.0	0.0	0.0	0.0	0.430	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.420	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.411	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	27.041	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.393	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.384	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.375	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.367	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.720	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.350	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.343	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.335	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.327	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.524	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.306	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.573	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.279	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.272	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.266	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.260	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05743	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
2	2	1	V	1	0	2023	0.31641	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
3	3	1	V	1	0	2023	0.45226	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11000	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt

6	6	1	V	1	0	2023	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
7	7	1	V	1	0	2023	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
10	3	2	V	1	0	2023	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
12	5	2	V	1	0	2023	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
13	6	2	V	1	0	2023	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
14	7	2	V	1	0	2023	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DM.txt
15	1	3	V	1	0	2023	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
16	2	3	V	1	0	2023	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
17	3	3	V	1	0	2023	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
18	4	3	V	1	0	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
19	5	3	V	1	0	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
20	6	3	V	1	0	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
21	7	3	V	1	0	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DM.txt
22	1	4	V	1	0	2023	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
23	2	4	V	1	0	2023	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
24	3	4	V	1	0	2023	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
25	4	4	V	1	0	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
26	5	4	V	1	0	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
27	6	4	V	1	0	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
28	7	4	V	1	0	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DM.txt
29	1	1	V	1	1	2023	0.05743	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
30	2	1	V	1	1	2023	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt

31	3	1	V	1	1	2023	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
35	7	1	V	1	1	2023	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
38	3	2	V	1	1	2023	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
40	5	2	V	1	1	2023	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
45	3	3	V	1	1	2023	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
47	5	3	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2023 DS.txt
50	1	4	V	1	1	2023	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt
51	2	4	V	1	1	2023	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt
54	5	4	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2023 DS.txt











156	2	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
157	3	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
158	4	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
159	5	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
160	6	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
161	7	3	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 IP 2023 DS.txt
162	1	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
163	2	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
164	3	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
165	4	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
166	5	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
167	6	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
168	7	4	D	1	1	2023	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2023 DS.txt
169	1	1	V	1	0	2037	0.05743	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
170	2	1	V	1	0	2037	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
171	3	1	V	1	0	2037	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
172	4	1	V	1	0	2037	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
173	5	1	V	1	0	2037	0.11000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
174	6	1	V	1	0	2037	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
175	7	1	V	1	0	2037	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DM.txt
176	1	2	V	1	0	2037	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
177	2	2	V	1	0	2037	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
178	3	2	V	1	0	2037	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
179	4	2	V	1	0	2037	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
180	5	2	V	1	0	2037	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt

181	6	2	V	1	0	2037	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
182	7	2	V	1	0	2037	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DM.txt
183	1	3	V	1	0	2037	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
184	2	3	V	1	0	2037	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
185	3	3	V	1	0	2037	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
186	4	3	V	1	0	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
187	5	3	V	1	0	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
188	6	3	V	1	0	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
189	7	3	V	1	0	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DM.txt
190	1	4	V	1	0	2037	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
191	2	4	V	1	0	2037	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
192	3	4	V	1	0	2037	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
193	4	4	V	1	0	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
194	5	4	V	1	0	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
195	6	4	V	1	0	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
196	7	4	V	1	0	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DM.txt
197	1	1	V	1	1	2037	0.05743	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
198	2	1	V	1	1	2037	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
199	3	1	V	1	1	2037	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
200	4	1	V	1	1	2037	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
201	5	1	V	1	1	2037	0.11000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
202	6	1	V	1	1	2037	0.03010	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
203	7	1	V	1	1	2037	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 AM 2037 DS.txt
204	1	2	V	1	1	2037	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
205	2	2	V	1	1	2037	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt

206	3	2	V	1	1	2037	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
207	4	2	V	1	1	2037	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
208	5	2	V	1	1	2037	0.10780	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
209	6	2	V	1	1	2037	0.01850	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
210	7	2	V	1	1	2037	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 PM 2037 DS.txt
211	1	3	V	1	1	2037	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
212	2	3	V	1	1	2037	0.08757	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
213	3	3	V	1	1	2037	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
214	4	3	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
215	5	3	V	1	1	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
216	6	3	V	1	1	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
217	7	3	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
222	5	4	V	1	1	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\V_6_Lowdham_H_V4 OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\T_6_Lowdham_H_V4 AM 2037 DM.txt











331	2	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_High\D_6_Lowdham_H_V4 AM 2023 DM.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:07:32

ERRORS AND WARNINGS

1912 Warnings found in total (including any above)

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	1	2	Car	Business	All	2037	0.002	0.003	0.633	0.043	0.043
1	2	2	Car	Business	All	2037	0.002	0.003	0.633	9.634	9.634
1	3	2	Car	Business	All	2037	0.002	0.003	0.633	33.350	33.350
1	4	2	Car	Business	All	2037	0.002	0.003	0.633	7.949	7.949
1	1	2	Car	Commuting	All	2037	0.002	0.003	0.633	0.275	0.275
1	2	2	Car	Commuting	All	2037	0.002	0.003	0.633	61.358	61.358
1	3	2	Car	Commuting	All	2037	0.002	0.003	0.633	212.416	212.416
1	4	2	Car	Commuting	All	2037	0.002	0.003	0.633	50.628	50.628
1	1	2	Car	Other	All	2037	0.002	0.003	0.633	0.526	0.526
1	2	2	Car	Other	All	2037	0.002	0.003	0.633	117.356	117.356
1	3	2	Car	Other	All	2037	0.002	0.003	0.633	406.273	406.273
1	4	2	Car	Other	All	2037	0.002	0.003	0.633	96.832	96.832
1	1	2	LGV Personal	Other	All	2037	0.002	0.003	0.633	0.015	0.015
1	2	2	LGV Personal	Other	All	2037	0.002	0.003	0.633	3.278	3.278
1	3	2	LGV Personal	Other	All	2037	0.002	0.003	0.633	11.348	11.348

1	4	2	LGV Personal	Other	All	2037	0.002	0.003	0.633	2.705	2.705
1	1	2	LGV Freight	Business	All	2037	0.002	0.003	0.633	0.108	0.108
1	2	2	LGV Freight	Business	All	2037	0.002	0.003	0.633	24.039	24.039
1	3	2	LGV Freight	Business	All	2037	0.002	0.003	0.633	83.222	83.222
1	4	2	LGV Freight	Business	All	2037	0.002	0.003	0.633	19.835	19.835

Displayed 20 warnings of a total of 28 of this type.

Warning (196 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
4	1	2	LGV Personal	Other	All	2037	0.261	0.002	118.077	5.336	5.336
4	2	2	LGV Personal	Other	All	2037	0.261	0.002	118.077	5.704	5.704
4	3	2	LGV Personal	Other	All	2037	0.261	0.002	118.077	4.645	4.645
4	1	2	Car	Business	All	2037	0.261	0.002	118.077	15.682	15.682
4	2	2	Car	Business	All	2037	0.261	0.002	118.077	16.762	16.762
4	3	2	Car	Business	All	2037	0.261	0.002	118.077	13.651	13.651
4	1	2	LGV Freight	Business	All	2037	0.261	0.002	118.077	39.131	39.131
4	2	2	LGV Freight	Business	All	2037	0.261	0.002	118.077	41.826	41.826
4	3	2	LGV Freight	Business	All	2037	0.261	0.002	118.077	34.065	34.065
4	1	2	Car	Commuting	All	2037	0.261	0.002	118.077	99.879	99.879
4	2	2	Car	Commuting	All	2037	0.261	0.002	118.077	106.758	106.758
4	3	2	Car	Commuting	All	2037	0.261	0.002	118.077	86.947	86.947
4	1	2	OGV1	Business	All	2037	0.261	0.002	118.077	6.715	6.715
4	2	2	OGV1	Business	All	2037	0.261	0.002	118.077	7.178	7.178
4	3	2	OGV1	Business	All	2037	0.261	0.002	118.077	5.846	5.846
4	1	2	Car	Other	All	2037	0.261	0.002	118.077	191.032	191.032

4	2	2	Car	Other	All	2037	0.261	0.002	118.077	204.189	204.189
4	3	2	Car	Other	All	2037	0.261	0.002	118.077	166.298	166.298
4	1	2	OGV2	Business	All	2037	0.261	0.002	118.077	5.191	5.191
4	2	2	OGV2	Business	All	2037	0.261	0.002	118.077	5.548	5.548

Displayed 20 warnings of a total of 336 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
4	1	2	Car	Business	All	2037	2.000	0.261	7.664	15.682	10.000
4	2	2	Car	Business	All	2037	2.000	0.261	7.664	16.762	10.000
4	3	2	Car	Business	All	2037	2.000	0.261	7.664	13.651	10.000
4	4	2	Car	Business	All	2037	2.000	0.261	7.664	0.000	10.000
4	1	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	39.131	10.000
4	2	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	41.826	10.000
4	3	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	34.065	10.000
4	4	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	0.000	10.000
4	1	2	OGV1	Business	All	2037	2.000	0.261	7.664	6.715	12.000
4	2	2	OGV1	Business	All	2037	2.000	0.261	7.664	7.178	12.000
4	3	2	OGV1	Business	All	2037	2.000	0.261	7.664	5.846	12.000
4	4	2	OGV1	Business	All	2037	2.000	0.261	7.664	0.000	12.000
4	1	2	OGV2	Business	All	2037	2.000	0.261	7.664	5.191	12.000
4	2	2	OGV2	Business	All	2037	2.000	0.261	7.664	5.548	12.000
4	3	2	OGV2	Business	All	2037	2.000	0.261	7.664	4.519	12.000
4	4	2	OGV2	Business	All	2037	2.000	0.261	7.664	0.000	12.000
4	1	2	Car	Commuting	All	2037	2.000	0.261	7.664	99.879	10.000

4	2	2	Car	Commuting	All	2037	2.000	0.261	7.664	106.758	10.000
4	3	2	Car	Commuting	All	2037	2.000	0.261	7.664	86.947	10.000
4	4	2	Car	Commuting	All	2037	2.000	0.261	7.664	0.000	10.000

Displayed 20 warnings of a total of 28 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.573	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.636	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.802	85.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.199	110.000
1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.517	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.679	110.000
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.302	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.389	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.423	85.000
1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.232	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	10.267	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	3.125	130.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.335	130.000



1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.539	130.000
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1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.468	130.000
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Displayed 20 warnings of a total of 696 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
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4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.159	110.000
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4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.279	110.000
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4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.879	110.000
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4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
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4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.031	85.000
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4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.089	85.000
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4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.375	85.000
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4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
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4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.544	85.000
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4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.574	85.000
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4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.725	85.000
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4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
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4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.602	130.000
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4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.636	130.000
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4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.803	130.000
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4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
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4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.018	130.000
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4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.241	130.000
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4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	5.357	130.000
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4 4 4 Car Commuting All 2023 2.000 0.000 5128.205 0.000 130.000

Displayed 20 warnings of a total of 824 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-6\_Lowdham\_V4\_High\_150B

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_High\_150B.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750



Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0

Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0

Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	137	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0

Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0

Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3
Road	2027	0	3	3
Road	2028	0	5	5



Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2
Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	4	4

Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	23	23
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	0	0

Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	2058	2058
Car	2023	PM peak	2211	2211
Car	2023	Inter-peak	6074	6074
Car	2023	Off-peak	878	878
Car	2023	All	11221	11221
Car	2037	AM peak	2347	2347
Car	2037	PM peak	2564	2564
Car	2037	Inter-peak	6914	6914
Car	2037	Off-peak	1002	1002
Car	2037	All	12827	12827
LGV Personal	2023	AM peak	37	37
LGV Personal	2023	PM peak	38	38
LGV Personal	2023	Inter-peak	128	128
LGV Personal	2023	Off-peak	19	19
LGV Personal	2023	All	222	222
LGV Personal	2037	AM peak	43	43

LGV Personal	2037	PM peak	45	45
LGV Personal	2037	Inter-peak	146	146
LGV Personal	2037	Off-peak	21	21
LGV Personal	2037	All	254	254
LGV Freight	2023	AM peak	274	274
LGV Freight	2023	PM peak	282	282
LGV Freight	2023	Inter-peak	939	939
LGV Freight	2023	Off-peak	136	136
LGV Freight	2023	All	1631	1631
LGV Freight	2037	AM peak	312	312
LGV Freight	2037	PM peak	327	327
LGV Freight	2037	Inter-peak	1068	1068
LGV Freight	2037	Off-peak	155	155
LGV Freight	2037	All	1863	1863
OGV1	2023	AM peak	75	75
OGV1	2023	PM peak	48	48
OGV1	2023	Inter-peak	448	448
OGV1	2023	Off-peak	65	65
OGV1	2023	All	637	637
OGV1	2037	AM peak	86	86
OGV1	2037	PM peak	56	56
OGV1	2037	Inter-peak	510	510
OGV1	2037	Off-peak	74	74
OGV1	2037	All	726	726
OGV2	2023	AM peak	47	47

OGV2	2023 PM peak	37	37
OGV2	2023 Inter-peak	236	236
OGV2	2023 Off-peak	34	34
OGV2	2023 All	355	355
OGV2	2037 AM peak	53	53
OGV2	2037 PM peak	43	43
OGV2	2037 Inter-peak	269	269
OGV2	2037 Off-peak	39	39
OGV2	2037 All	405	405
All	2023 AM peak	2491	2491
All	2023 PM peak	2618	2618
All	2023 Inter-peak	7825	7825
All	2023 Off-peak	1132	1132
All	2023 All	14066	14066
All	2037 AM peak	2841	2841
All	2037 PM peak	3036	3036
All	2037 Inter-peak	8907	8907
All	2037 Off-peak	1291	1291
All	2037 All	16075	16075

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	841	0	1604	1036	186	0	1588	1020
Road	2037	2201	0	1000	761	631	0	974	730

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	744	701	103	735	697	103
Car	2037	634	438	907	613	431	907
LGV Personal	2023	1	43	1	1	42	1
LGV Personal	2037	0	38	19	0	38	19
LGV Freight	2023	4	313	6	4	311	6
LGV Freight	2037	2	282	139	2	282	139
OGV1	2023	0	217	0	0	215	0
OGV1	2037	0	253	0	0	245	0
OGV2	2023	0	204	0	0	198	0
OGV2	2037	0	244	0	0	228	0
All	2023	748	1477	110	739	1464	110
All	2037	637	1255	1065	615	1225	1065
Car	Total	32870	23354	69492	31868	23022	69492
LGV Personal	Total	16	2123	1683	16	2124	1683
LGV Freight	Total	120	15562	12338	116	15574	12338
OGV1	Total	0	14893	0	0	14465	0
OGV2	Total	0	14343	0	0	13458	0
All	Total	33006	70274	83512	32000	68643	83512

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3238	3210	-27	65	64	-1	131	130	-1	196	194	-2
Car	2037	2375	2313	-62	55	53	-1	108	106	-3	163	159	-4
LGV Personal	2023	104	104	-0	2	2	-0	4	4	-0	6	6	-0
LGV Personal	2037	94	94	0	2	2	0	4	4	0	6	6	0
LGV Freight	2023	764	761	-3	15	15	-0	31	31	-0	46	46	-0
LGV Freight	2037	686	687	1	16	16	0	31	31	0	47	47	0
OGV1	2023	526	519	-6	11	10	-0	21	21	-0	32	31	-0
OGV1	2037	611	593	-19	14	14	-0	28	27	-1	42	41	-1
OGV2	2023	493	479	-13	10	10	-0	20	19	-1	30	29	-1
OGV2	2037	591	552	-39	14	13	-1	27	25	-2	41	38	-3
All	2023	5124	5073	-51	103	101	-1	208	206	-2	310	307	-3
All	2024	5069	5012	-57	101	100	-1	201	199	-2	302	299	-3
All	2025	4997	4934	-63	98	97	-1	194	192	-2	293	289	-4
All	2026	4935	4867	-68	94	93	-1	188	185	-3	282	278	-4
All	2027	4872	4798	-74	92	91	-1	182	179	-3	274	270	-4
All	2028	4800	4722	-79	88	86	-1	177	175	-3	265	261	-4
All	2029	4741	4658	-84	86	84	-2	171	168	-3	257	253	-5
All	2030	4680	4592	-89	82	80	-2	166	162	-3	247	243	-5
All	2031	4615	4521	-93	86	84	-2	171	168	-3	257	252	-5
All	2032	4565	4467	-98	89	87	-2	179	175	-4	268	262	-6
All	2033	4520	4418	-102	93	90	-2	183	179	-4	276	270	-6
All	2034	4469	4363	-106	94	91	-2	189	184	-4	282	276	-7
All	2035	4432	4321	-110	96	94	-2	192	188	-5	290	283	-7

All	2036	4398	4284	-115	98	96	-3	197	192	-5	295	288	-8
All	2037	4357	4239	-119	100	97	-3	199	194	-5	299	291	-8
All	2038	4293	4176	-117	100	97	-3	201	195	-5	300	292	-8
All	2039	4232	4116	-116	100	98	-3	201	195	-5	302	294	-8
All	2040	4165	4050	-114	101	98	-3	201	196	-6	302	293	-8
All	2041	4105	3992	-113	101	98	-3	200	195	-6	301	293	-8
All	2042	4049	3937	-112	99	97	-3	200	195	-6	300	291	-8
All	2043	3986	3875	-110	99	96	-3	198	193	-5	298	290	-8
All	2044	3933	3824	-109	99	96	-3	197	192	-5	296	288	-8
All	2045	3885	3776	-108	98	95	-3	195	190	-5	294	285	-8
All	2046	3829	3722	-107	96	94	-3	194	188	-5	290	282	-8
All	2047	3784	3677	-106	96	93	-3	192	186	-5	288	280	-8
All	2048	3738	3633	-105	95	92	-3	190	185	-5	285	277	-8
All	2049	3687	3583	-104	94	91	-3	187	182	-5	281	273	-8
All	2050	3642	3538	-103	92	89	-3	185	179	-5	277	269	-8
All	2051	3642	3538	-103	92	89	-3	185	180	-5	279	271	-8
All	2052	3642	3538	-103	91	89	-3	186	181	-5	281	273	-8
All	2053	3642	3538	-103	91	88	-3	187	181	-5	282	274	-8
All	2054	3642	3538	-103	89	87	-3	187	181	-5	284	276	-8
All	2055	3642	3538	-103	89	86	-3	187	182	-5	285	277	-8
All	2056	3642	3538	-103	88	85	-2	186	181	-5	285	277	-8
All	2057	3642	3538	-103	86	84	-2	186	181	-5	285	277	-8
All	2058	3642	3538	-103	85	83	-2	185	180	-5	285	276	-8
All	2059	3642	3538	-103	84	82	-2	184	179	-5	284	276	-8
All	2060	3642	3538	-103	82	80	-2	183	177	-5	283	275	-8



All	2061	3642	3538	-103	80	78	-2	181	176	-5	281	273	-8
All	2062	3642	3538	-103	78	76	-2	178	173	-5	279	271	-8
All	2063	3642	3538	-103	77	75	-2	176	171	-5	275	268	-8
All	2064	3642	3538	-103	75	72	-2	173	168	-5	272	264	-8
All	2065	3642	3538	-103	72	70	-2	170	165	-5	268	261	-8
All	2066	3642	3538	-103	70	68	-2	167	163	-5	264	257	-7
All	2067	3642	3538	-103	68	66	-2	164	160	-5	260	253	-7
All	2068	3642	3538	-103	66	64	-2	161	156	-5	256	249	-7
All	2069	3642	3538	-103	64	62	-2	157	153	-4	251	244	-7
All	2070	3642	3538	-103	62	60	-2	154	150	-4	246	239	-7
All	2071	3642	3538	-103	59	58	-2	150	146	-4	241	234	-7
All	2072	3642	3538	-103	57	56	-2	147	143	-4	236	229	-7
All	2073	3642	3538	-103	55	54	-2	143	139	-4	231	224	-7
All	2074	3642	3538	-103	53	52	-2	139	135	-4	226	219	-6
All	2075	3642	3538	-103	51	49	-1	136	132	-4	220	214	-6
All	2076	3642	3538	-103	49	47	-1	132	128	-4	215	209	-6
All	2077	3642	3538	-103	47	45	-1	128	124	-4	209	203	-6
All	2078	3642	3538	-103	45	43	-1	124	121	-4	203	198	-6
All	2079	3642	3538	-103	43	42	-1	120	117	-3	198	192	-6
All	2080	3642	3538	-103	41	40	-1	116	113	-3	192	186	-5
All	2081	3642	3538	-103	39	38	-1	113	110	-3	187	181	-5
All	2082	3642	3538	-103	37	36	-1	109	106	-3	181	176	-5
Car	Total	124590	121712	-2878	2526	2467	-59	5425	5298	-127	8326	8130	-196
LGV Personal	Total	5171	5174	3	105	105	0	227	227	0	348	349	0
LGV Freight	Total	37913	37933	20	769	769	0	1661	1662	1	2555	2556	2

OGV1	Total	36044	35009	-1034	730	709	-21	1589	1543	-46	2448	2377	-71
OGV2	Total	34714	32571	-2143	703	660	-44	1531	1436	-95	2359	2212	-147
All	Total	238432	232399	-6033	4832	4710	-123	10432	10165	-267	16036	15625	-412

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	26	26	0	0	0	0	0	0	1	1	0	
Car	2037	52	52	0	1	1	0	2	2	0	4	4	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2023	2	2	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	8	8	-0	0	0	-0	0	0	-0	1	1	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	28	28	0	0	0	0	1	1	0	1	1	0
All	2024	35	35	0	0	0	0	1	1	0	1	1	0
All	2025	43	43	0	0	0	0	1	1	0	2	2	0
All	2026	52	52	0	1	1	0	1	1	0	2	2	0
All	2027	59	59	0	1	1	0	2	2	0	3	3	0
All	2028	65	65	-0	1	1	-0	2	2	-0	3	3	-0
All	2029	68	68	-0	1	1	-0	2	2	-0	3	3	-0
All	2030	69	69	0	1	1	0	2	2	0	4	4	0

All	2031	70	70	-0	1	1	-0	3	3	-0	4	4	-0
All	2032	71	71	-0	1	1	-0	3	3	-0	4	4	-0
All	2033	70	70	-0	1	1	-0	3	3	-0	4	4	-0
All	2034	69	69	-0	1	1	-0	3	3	-0	4	4	-0
All	2035	67	67	-0	2	2	-0	3	3	-0	4	4	-0
All	2036	64	64	-0	1	1	-0	3	3	-0	4	4	-0
All	2037	62	62	-0	1	1	-0	3	3	-0	4	4	-0
All	2038	58	58	-0	1	1	-0	3	3	-0	4	4	-0
All	2039	54	54	-0	1	1	-0	3	3	-0	4	4	-0
All	2040	51	51	-0	1	1	-0	2	2	-0	4	4	-0
All	2041	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2042	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2043	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2044	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2045	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2046	52	52	-0	1	1	-0	3	3	-0	4	4	-0
All	2047	51	51	-0	1	1	-0	3	3	-0	4	4	-0
All	2048	50	50	-0	1	1	-0	3	3	-0	4	4	-0
All	2049	50	50	-0	1	1	-0	3	3	-0	4	4	-0
All	2050	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2051	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2052	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2053	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2054	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2055	49	49	-0	1	1	-0	2	2	-0	4	4	-0

All	2056	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2057	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2058	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2059	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2060	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2061	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2062	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2063	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2064	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2065	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2066	49	49	-0	1	1	-0	2	2	-0	4	4	-0
All	2067	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2068	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2069	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2070	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2071	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2072	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2073	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2074	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2075	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2076	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2077	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2078	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2079	49	49	-0	1	1	-0	2	2	-0	3	3	-0
All	2080	49	49	-0	1	1	-0	2	2	-0	3	3	-0

All	2081	49	49	-0	1	1	-0	2	2	-0	2	2	-0
All	2082	49	49	-0	1	1	-0	1	1	-0	2	2	-0
Car	Total	2626	2626	-0	53	53	0	112	112	0	172	172	0
LGV Personal	Total	59	59	-0	1	1	-0	3	3	-0	4	4	-0
LGV Freight	Total	433	433	-0	9	9	-0	19	19	-0	29	29	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	3118	3118	-0	64	64	-0	133	133	-0	205	205	-0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	850	858	8	17	17	0	34	35	0	51	52	1
AM peak	2037	613	653	40	14	15	1	28	30	2	42	45	3
PM peak	2023	932	872	-60	19	17	-1	38	35	-2	56	53	-4
PM peak	2037	842	683	-159	19	16	-4	38	31	-7	58	47	-11
Inter-peak	2023	2920	2920	0	58	58	0	118	118	0	177	177	0
Inter-peak	2037	2535	2535	0	58	58	0	116	116	0	174	174	0
Off-peak	2023	422	422	0	8	8	0	17	17	0	26	26	0
Off-peak	2037	368	368	0	8	8	0	17	17	0	25	25	0
AM peak	Total	34221	36002	1780	693	729	36	1493	1572	79	2293	2415	122
PM peak	Total	44899	37085	-7814	911	752	-159	1966	1619	-346	3021	2488	-534
Inter-peak	Total	139144	139144	0	2820	2820	0	6091	6091	0	9365	9365	0
Off-peak	Total	20167	20167	0	409	409	0	883	883	0	1357	1357	0

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	2037	11	11	0	0	0	1	1	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	12	12	-0	0	0	-0	1	1	-0	1	1	-0
Inter-peak	2023	15	15	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	33	33	0	1	1	0	2	2	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	Total	563	563	0	11	11	0	24	24	0	37	37	0
PM peak	Total	610	610	-0	12	12	-0	26	26	-0	40	40	-0
Inter-peak	Total	1698	1698	0	35	35	0	73	73	0	112	112	0
Off-peak	Total	246	246	0	5	5	0	11	11	0	16	16	0

#### MODE

User benefits and changes in revenues by mode, all years. E000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	655	0	16	17	0	-9
Road	2024	734	0	17	19	0	-10
Road	2025	811	0	19	20	0	-11
Road	2026	885	0	20	22	0	-11
Road	2027	957	0	21	23	0	-12
Road	2028	1028	0	22	24	0	-12
Road	2029	1096	0	23	26	0	-13
Road	2030	1163	0	23	27	0	-13
Road	2031	1227	0	24	28	0	-13
Road	2032	1289	0	24	29	0	-14
Road	2033	1348	0	25	29	0	-14
Road	2034	1406	0	25	30	0	-14
Road	2035	1462	0	25	31	0	-14
Road	2036	1516	0	25	31	0	-15
Road	2037	1569	0	26	32	0	-15
Road	2038	1546	0	24	31	0	-14
Road	2039	1524	0	23	30	0	-14
Road	2040	1501	0	22	29	0	-13
Road	2041	1478	0	22	28	0	-12
Road	2042	1456	0	21	27	0	-12
Road	2043	1434	0	20	26	0	-12
Road	2044	1412	0	19	25	0	-11
Road	2045	1390	0	18	24	0	-11

Road	2046	1369	0	17	23	0	-10
Road	2047	1347	0	17	22	0	-10
Road	2048	1326	0	16	22	0	-10
Road	2049	1305	0	15	21	0	-9
Road	2050	1285	0	15	20	0	-9
Road	2051	1272	0	14	20	0	-9
Road	2052	1260	0	14	19	0	-8
Road	2053	1248	0	14	19	0	-8
Road	2054	1235	0	13	18	0	-8
Road	2055	1223	0	13	17	0	-8
Road	2056	1210	0	13	17	0	-8
Road	2057	1198	0	12	16	0	-8
Road	2058	1186	0	12	16	0	-7
Road	2059	1174	0	12	16	0	-7
Road	2060	1163	0	12	15	0	-7
Road	2061	1151	0	11	15	0	-7
Road	2062	1141	0	11	14	0	-7
Road	2063	1130	0	11	14	0	-7
Road	2064	1120	0	10	13	0	-6
Road	2065	1110	0	10	13	0	-6
Road	2066	1101	0	10	13	0	-6
Road	2067	1092	0	10	12	0	-6
Road	2068	1082	0	9	12	0	-6
Road	2069	1073	0	9	12	0	-6
Road	2070	1064	0	9	11	0	-6



Road	2071	1055	0	9	11	0	-5
Road	2072	1046	0	9	11	0	-5
Road	2073	1037	0	8	10	0	-5
Road	2074	1028	0	8	10	0	-5
Road	2075	1019	0	8	10	0	-5
Road	2076	1010	0	8	9	0	-5
Road	2077	1001	0	7	9	0	-5
Road	2078	992	0	7	9	0	-5
Road	2079	984	0	7	9	0	-5
Road	2080	975	0	7	8	0	-4
Road	2081	967	0	7	8	0	-4
Road	2082	958	0	7	8	0	-4
Road	Total	70824	0	907	1126	0	-533

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	507	0	9	4	0	-5
Car	2037	1214	0	14	8	0	-8
LGV Personal	2023	6	0	0	0	0	-0
LGV Personal	2037	15	0	-0	0	0	0
LGV Freight	2023	107	0	1	3	0	-1
LGV Freight	2037	256	0	-0	6	0	0
OGV1	2023	20	0	2	4	0	-1

OGV1	2037	49	0	4	7	0	-2
OGV2	2023	15	0	4	5	0	-2
OGV2	2037	35	0	8	10	0	-4
All	2023	655	0	16	17	0	-9
All	2037	1569	0	26	32	0	-15
Car	Total	54788	0	469	282	0	-279
LGV Personal	Total	695	0	0	0	0	-0
LGV Freight	Total	11539	0	1	230	0	-0
OGV1	Total	2214	0	142	257	0	-83
OGV2	Total	1589	0	295	356	0	-171
All	Total	70824	0	907	1126	0	-533

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri			PT_fares_(pri		Taxes
All	2023	655	0	16	17	0	-9	
All	2037	1569	0	26	32	0	-15	
All	Total	70824	0	907	1126	0	-533	

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri			PT_fares_(pri		Taxes
Business	2023	169	0	7	17	0	-4	

Business	2037	408	0	12	32	0	-7
Commuting	2023	202	0	3	0	0	-2
Commuting	2037	494	0	4	0	0	-2
Other	2023	284	0	6	0	0	-3
Other	2037	668	0	9	0	0	-5
Business	Total	18393	0	458	1126	0	-266
Commuting	Total	22265	0	140	0	0	-84
Other	Total	30166	0	309	0	0	-184

PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	66	0	-3	2	0	2
AM peak	2037	298	0	-9	7	0	5
PM peak	2023	563	0	19	13	0	-11
PM peak	2037	1231	0	34	23	0	-20
Inter-peak	2023	26	0	0	1	0	0
Inter-peak	2037	40	0	0	1	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	1	0	0	0	0	0
AM peak	Total	13059	0	-272	248	0	160
PM peak	Total	55879	0	1179	824	0	-693
Inter-peak	Total	1857	0	0	53	0	0
Off-peak	Total	29	0	0	1	0	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	3
Car	Business	2037	0	0	-0	4	2	9
Car	Business	Total	0	0	-3	197	82	506
Car	Commuting	2023	0	0	-0	6	0	22
Car	Commuting	2037	0	0	-0	19	9	58
Car	Commuting	Total	0	0	-16	1050	449	3197
Car	Other	2023	0	0	-0	17	0	66
Car	Other	2037	0	0	-1	55	19	173
Car	Other	Total	0	0	-49	3036	971	9602
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	2
LGV Personal	Other	2037	0	0	-0	1	1	4
LGV Personal	Other	Total	0	0	-1	75	28	219
LGV Freight	Business	2023	0	0	-0	3	0	9
LGV Freight	Business	2037	0	0	-0	8	3	24
LGV Freight	Business	Total	0	0	-7	450	166	1319

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	1	0	1
OGV1	Business	2037	0	0	-0	2	1	3
OGV1	Business	Total	0	0	-1	95	38	189
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	1
OGV2	Business	2037	0	0	-0	1	0	3
OGV2	Business	Total	0	0	-1	62	24	146
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	7	0	21
Car	Business	2037	0	0	-0	17	7	43
Car	Business	Total	0	0	-10	769	312	1981
Car	Commuting	2023	0	0	-0	41	0	161
Car	Commuting	2037	0	0	-2	111	50	335
Car	Commuting	Total	0	0	-77	4985	2095	15262
Car	Other	2023	0	0	-0	57	0	221
Car	Other	2037	0	0	-2	147	49	459
Car	Other	Total	0	0	-105	6588	2068	20921
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	0	5
LGV Personal	Other	2037	0	0	-0	4	1	10
LGV Personal	Other	Total	0	0	-2	162	59	477
LGV Freight	Business	2023	0	0	-0	23	0	84
LGV Freight	Business	2037	0	0	-1	60	23	174
LGV Freight	Business	Total	0	0	-40	2689	973	7917
LGV Freight	Commuting	2023	0	0	0	0	0	0

LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	6	0	14
OGV1	Business	2037	0	0	-0	15	6	29
OGV1	Business	Total	0	0	-7	659	256	1305
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	4	0	11
OGV2	Business	2037	0	0	-0	9	4	22
OGV2	Business	Total	0	0	-5	425	160	1009
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	8	0	25
Car	Business	2037	0	0	-0	19	8	49
Car	Business	Total	0	0	-11	831	344	2190
Car	Commuting	2023	0	0	-0	40	0	165
Car	Commuting	2037	0	0	-2	110	50	340
Car	Commuting	Total	0	0	-77	4942	2116	15424
Car	Other	2023	0	0	-0	56	0	228
Car	Other	2037	0	0	-2	146	50	468
Car	Other	Total	0	0	-105	6557	2099	21230
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	0	5
LGV Personal	Other	2037	0	0	-0	3	1	11
LGV Personal	Other	Total	0	0	-2	151	59	487
LGV Freight	Business	2023	0	0	-0	24	0	87
LGV Freight	Business	2037	0	0	-1	59	24	180
LGV Freight	Business	Total	0	0	-41	2665	992	8153
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0



LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	8	0	18
OGV1	Business	2037	0	0	-0	17	8	35
OGV1	Business	Total	0	0	-8	757	310	1554
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	5	0	19
OGV2	Business	2037	0	0	-0	14	6	33
OGV2	Business	Total	0	0	-6	584	241	1421
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	2	0	0	0	0	0	0
OGV1	Business	2037	0	6	0	0	0	0	0	0
OGV1	Business	Total	0	321	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	4	0	0	0	0	0	0
OGV2	Business	Total	0	230	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	20	0	0	0	0	0	0
OGV1	Business	2037	0	49	0	0	0	0	0	0
OGV1	Business	Total	0	2214	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	15	0	0	0	0	0	0
OGV2	Business	2037	0	35	0	0	0	0	0	0
OGV2	Business	Total	0	1589	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	32	0	0	0	0	0	0



LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	26	0	0	0	0	0	0
OGV1	Business	2037	0	60	0	0	0	0	0	0
OGV1	Business	Total	0	2613	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	24	0	0	0	0	0	0
OGV2	Business	2037	0	53	0	0	0	0	0	0
OGV2	Business	Total	0	2240	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode      2023   2037

Road      19.76% 41.06%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	22265	22265
Vehicle operating costs	140	140
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>22406</b>	<b>22406</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	30166	30166
Vehicle operating costs	309	309
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>30475</b>	<b>30475</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	18393	3051	15342
Vehicle operating costs	1584	302	1282
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>19977</b>	<b>3353</b>	<b>16623</b>

Private Sector Provider Impacts



Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-335	-335
NET BUSINESS IMPACT	19642	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	72523
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	141	141
Investment Costs	937	937
Developer Contributions	-335	-335
Grant/Subsidy Payments	0	0
NET IMPACT	743	743

Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	3640	3640
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3640	3640

Central Government Funding: Non-Transport

Indirect Tax Revenues	533	533
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TOTALS

Broad Transport Budget	4383	4383
Wider Public Finances	533	533

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	267
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Economic Efficiency: Consumer Users (Commuting)	22406
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Economic Efficiency: Consumer Users (Other)	30475
Economic Efficiency: Business Users and Providers	19642
Wider Public Finances (Indirect Taxation Revenues)	-533
Present Value of Benefits (PVB)	72257
Broad Transport Budget	4383
Present Value of Costs (PVC)	4383
OVERALL IMPACTS	
Net Present Value (NPV)	67874
Benefit to Cost Ratio (BCR)	16.486

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-6\_Lowdham\_V4\_High\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_High\_V4\_15OB\6-Lowdham\_V4\_High\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_High\_V4\_15OB\6-Lowdham\_V4\_High\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 3secs

ERRORS AND WARNINGS

1912 Warnings found in total (including any above)

Warning (none serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
1	1	2	Car	Business	All	2037	0.002	0.003	0.633	0.043	0.043	
1	2	2	Car	Business	All	2037	0.002	0.003	0.633	9.634	9.634	
1	3	2	Car	Business	All	2037	0.002	0.003	0.633	33.350	33.350	
1	4	2	Car	Business	All	2037	0.002	0.003	0.633	7.949	7.949	
1	1	2	Car	Commuting	All	2037	0.002	0.003	0.633	0.275	0.275	
1	2	2	Car	Commuting	All	2037	0.002	0.003	0.633	61.358	61.358	
1	3	2	Car	Commuting	All	2037	0.002	0.003	0.633	212.416	212.416	
1	4	2	Car	Commuting	All	2037	0.002	0.003	0.633	50.628	50.628	
1	1	2	Car	Other	All	2037	0.002	0.003	0.633	0.526	0.526	
1	2	2	Car	Other	All	2037	0.002	0.003	0.633	117.356	117.356	
1	3	2	Car	Other	All	2037	0.002	0.003	0.633	406.273	406.273	
1	4	2	Car	Other	All	2037	0.002	0.003	0.633	96.832	96.832	
1	1	2	LGV	Personal	Other	All	2037	0.002	0.003	0.633	0.015	0.015
1	2	2	LGV	Personal	Other	All	2037	0.002	0.003	0.633	3.278	3.278
1	3	2	LGV	Personal	Other	All	2037	0.002	0.003	0.633	11.348	11.348
1	4	2	LGV	Personal	Other	All	2037	0.002	0.003	0.633	2.705	2.705
1	1	2	LGV	Freight	Business	All	2037	0.002	0.003	0.633	0.108	0.108
1	2	2	LGV	Freight	Business	All	2037	0.002	0.003	0.633	24.039	24.039
1	3	2	LGV	Freight	Business	All	2037	0.002	0.003	0.633	83.222	83.222
1	4	2	LGV	Freight	Business	All	2037	0.002	0.003	0.633	19.835	19.835

Displayed 20 warnings of a total of 28 of this type.

Warning (196 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
4	1	2	LGV	Personal	Other	All	2037	0.261	0.002	118.077	5.336	5.336
4	2	2	LGV	Personal	Other	All	2037	0.261	0.002	118.077	5.704	5.704
4	3	2	LGV	Personal	Other	All	2037	0.261	0.002	118.077	4.645	4.645
4	1	2	Car	Business	All	2037	0.261	0.002	118.077	15.682	15.682	
4	2	2	Car	Business	All	2037	0.261	0.002	118.077	16.762	16.762	
4	3	2	Car	Business	All	2037	0.261	0.002	118.077	13.651	13.651	
4	1	2	LGV	Freight	Business	All	2037	0.261	0.002	118.077	39.131	39.131
4	2	2	LGV	Freight	Business	All	2037	0.261	0.002	118.077	41.826	41.826
4	3	2	LGV	Freight	Business	All	2037	0.261	0.002	118.077	34.065	34.065
4	1	2	Car	Commuting	All	2037	0.261	0.002	118.077	99.879	99.879	

4	2	2	Car	Commuting	All	2037	0.261	0.002	118.077	106.758	106.758
4	3	2	Car	Commuting	All	2037	0.261	0.002	118.077	86.947	86.947
4	1	2	OGV1	Business	All	2037	0.261	0.002	118.077	6.715	6.715
4	2	2	OGV1	Business	All	2037	0.261	0.002	118.077	7.178	7.178
4	3	2	OGV1	Business	All	2037	0.261	0.002	118.077	5.846	5.846
4	1	2	Car	Other	All	2037	0.261	0.002	118.077	191.032	191.032
4	2	2	Car	Other	All	2037	0.261	0.002	118.077	204.189	204.189
4	3	2	Car	Other	All	2037	0.261	0.002	118.077	166.298	166.298
4	1	2	OGV2	Business	All	2037	0.261	0.002	118.077	5.191	5.191
4	2	2	OGV2	Business	All	2037	0.261	0.002	118.077	5.548	5.548

Displayed 20 warnings of a total of 336 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
4	1	2	Car	Business	All	2037	2.000	0.261	7.664	15.682	10.000
4	2	2	Car	Business	All	2037	2.000	0.261	7.664	16.762	10.000
4	3	2	Car	Business	All	2037	2.000	0.261	7.664	13.651	10.000
4	4	2	Car	Business	All	2037	2.000	0.261	7.664	0.000	10.000
4	1	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	39.131	10.000
4	2	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	41.826	10.000
4	3	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	34.065	10.000
4	4	2	LGV Freight	Business	All	2037	2.000	0.261	7.664	0.000	10.000
4	1	2	OGV1	Business	All	2037	2.000	0.261	7.664	6.715	12.000
4	2	2	OGV1	Business	All	2037	2.000	0.261	7.664	7.178	12.000
4	3	2	OGV1	Business	All	2037	2.000	0.261	7.664	5.846	12.000
4	4	2	OGV1	Business	All	2037	2.000	0.261	7.664	0.000	12.000
4	1	2	OGV2	Business	All	2037	2.000	0.261	7.664	5.191	12.000
4	2	2	OGV2	Business	All	2037	2.000	0.261	7.664	5.548	12.000
4	3	2	OGV2	Business	All	2037	2.000	0.261	7.664	4.519	12.000
4	4	2	OGV2	Business	All	2037	2.000	0.261	7.664	0.000	12.000
4	1	2	Car	Commuting	All	2037	2.000	0.261	7.664	99.879	10.000
4	2	2	Car	Commuting	All	2037	2.000	0.261	7.664	106.758	10.000
4	3	2	Car	Commuting	All	2037	2.000	0.261	7.664	86.947	10.000
4	4	2	Car	Commuting	All	2037	2.000	0.261	7.664	0.000	10.000

Displayed 20 warnings of a total of 28 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.573	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.636	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.802	85.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.199	110.000

1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.517	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.679	110.000
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.302	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.389	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.423	85.000
1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.232	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	10.267	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	3.125	130.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.335	130.000
1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.539	130.000
1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.468	130.000

Displayed 20 warnings of a total of 696 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Cal_Speed	DS_trips	VOC_Speed
4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.159	110.000
4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.279	110.000
4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.879	110.000
4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.031	85.000
4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.089	85.000
4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.375	85.000
4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.544	85.000
4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.574	85.000
4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.725	85.000
4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.602	130.000
4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.636	130.000
4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.803	130.000
4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.018	130.000
4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.241	130.000
4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	5.357	130.000
4	4	4	Car	Commuting	All	2023	2.000	0.000	5128.205	0.000	130.000

Displayed 20 warnings of a total of 824 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332



2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500

2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881

2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105

2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000

2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000

2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000

2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000

2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898



2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000

2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_ylr	End_ylr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000

2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000

2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000

2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000

2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593

2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000

2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049



2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172

2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635

2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000

2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850

2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
		max	min			
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10

2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000

2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340



2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324

2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389

2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019

2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170

2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192

2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329

2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581

2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717



2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876

2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005

2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206

2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988

2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932

2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000

2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032

2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014



2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079



Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0

Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0
Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0

Road	2043	0	0	0	0	137	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3
Road	2027	0	3	3
Road	2028	0	5	5
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2
Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	4	4
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	23	23

Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	0	0
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	2058	2058
Car	2023	PM peak	2211	2211
Car	2023	Inter-peak	6074	6074
Car	2023	Off-peak	878	878
Car	2023	All	11221	11221
Car	2037	AM peak	2347	2347
Car	2037	PM peak	2564	2564
Car	2037	Inter-peak	6914	6914
Car	2037	Off-peak	1002	1002
Car	2037	All	12827	12827
LGV Personal	2023	AM peak	37	37
LGV Personal	2023	PM peak	38	38
LGV Personal	2023	Inter-peak	128	128
LGV Personal	2023	Off-peak	19	19
LGV Personal	2023	All	222	222
LGV Personal	2037	AM peak	43	43
LGV Personal	2037	PM peak	45	45
LGV Personal	2037	Inter-peak	146	146
LGV Personal	2037	Off-peak	21	21
LGV Personal	2037	All	254	254

LGV Freight	2023	AM peak	274	274
LGV Freight	2023	PM peak	282	282
LGV Freight	2023	Inter-peak	939	939
LGV Freight	2023	Off-peak	136	136
LGV Freight	2023	All	1631	1631
LGV Freight	2037	AM peak	312	312
LGV Freight	2037	PM peak	327	327
LGV Freight	2037	Inter-peak	1068	1068
LGV Freight	2037	Off-peak	155	155
LGV Freight	2037	All	1863	1863
OGV1	2023	AM peak	75	75
OGV1	2023	PM peak	48	48
OGV1	2023	Inter-peak	448	448
OGV1	2023	Off-peak	65	65
OGV1	2023	All	637	637
OGV1	2037	AM peak	86	86
OGV1	2037	PM peak	56	56
OGV1	2037	Inter-peak	510	510
OGV1	2037	Off-peak	74	74
OGV1	2037	All	726	726
OGV2	2023	AM peak	47	47
OGV2	2023	PM peak	37	37
OGV2	2023	Inter-peak	236	236
OGV2	2023	Off-peak	34	34
OGV2	2023	All	355	355
OGV2	2037	AM peak	53	53
OGV2	2037	PM peak	43	43
OGV2	2037	Inter-peak	269	269
OGV2	2037	Off-peak	39	39
OGV2	2037	All	405	405
All	2023	AM peak	2491	2491
All	2023	PM peak	2618	2618
All	2023	Inter-peak	7825	7825
All	2023	Off-peak	1132	1132
All	2023	All	14066	14066
All	2037	AM peak	2841	2841
All	2037	PM peak	3036	3036
All	2037	Inter-peak	8907	8907
All	2037	Off-peak	1291	1291
All	2037	All	16075	16075

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	808	0	1638	1036	179	0	1621	1020
Road	2037	2021	0	877	761	580	0	855	730

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	830	701	105	820	697	105
Car	2037	649	342	1168	627	336	1168
LGV Personal	2023	1	42	1	1	42	1
LGV Personal	2037	1	32	12	1	32	12
LGV Freight	2023	7	310	4	7	309	4
LGV Freight	2037	10	238	87	10	238	87
OGV1	2023	0	213	0	0	210	0
OGV1	2037	0	214	0	0	208	0
OGV2	2023	0	197	0	0	191	0
OGV2	2037	0	176	0	0	165	0
All	2023	837	1463	110	827	1450	110
All	2037	660	1003	1266	638	979	1266
Car	Total	33491	18701	83421	32481	18443	83421
LGV Personal	Total	88	1765	1088	86	1766	1088
LGV Freight	Total	648	12938	7978	627	12946	7978
OGV1	Total	0	12363	0	0	12012	0
OGV2	Total	0	10455	0	0	9820	0
All	Total	34227	56222	92488	33194	54985	92488

#### CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3414	3384	-30	68	68	-1	138	137	-1	207	205	-2
Car	2037	2171	2112	-59	50	49	-1	99	96	-3	149	145	-4
LGV Personal	2023	104	104	-0	2	2	-0	4	4	-0	6	6	-0
LGV Personal	2037	81	81	0	2	2	0	4	4	0	6	6	0
LGV Freight	2023	764	761	-4	15	15	-0	31	31	-0	46	46	-0
LGV Freight	2037	596	596	0	14	14	0	27	27	0	41	41	0
OGV1	2023	515	509	-6	10	10	-0	21	21	-0	31	31	-0
OGV1	2037	519	503	-16	12	12	-0	24	23	-1	36	35	-1
OGV2	2023	476	463	-13	10	9	-0	19	19	-1	29	28	-1
OGV2	2037	427	399	-28	10	9	-1	19	18	-1	29	27	-2
All	2023	5274	5221	-53	105	104	-1	214	212	-2	319	316	-3
All	2024	5211	5152	-59	104	102	-1	207	205	-2	311	307	-4
All	2025	5112	5048	-64	101	99	-1	199	196	-3	300	296	-4
All	2026	5011	4941	-70	95	94	-1	191	188	-3	286	282	-4
All	2027	4911	4836	-75	93	91	-1	183	180	-3	276	272	-4

All	2028	4813	4734	-79	88	86	-1	178	175	-3	266	261	-4
All	2029	4719	4635	-84	85	84	-2	171	168	-3	256	251	-5
All	2030	4566	4480	-87	80	78	-2	162	158	-3	241	237	-5
All	2031	4423	4333	-89	82	80	-2	164	161	-3	246	241	-5
All	2032	4290	4199	-92	84	82	-2	168	164	-4	252	246	-5
All	2033	4169	4075	-94	85	83	-2	169	165	-4	255	249	-6
All	2034	4059	3963	-96	85	83	-2	171	167	-4	256	250	-6
All	2035	3961	3863	-99	86	84	-2	172	168	-4	259	253	-6
All	2036	3873	3773	-101	87	84	-2	173	169	-5	260	253	-7
All	2037	3795	3692	-103	87	85	-2	173	169	-5	261	253	-7
All	2038	3694	3594	-101	86	83	-2	173	168	-5	259	252	-7
All	2039	3608	3510	-98	86	83	-2	171	166	-5	258	251	-7
All	2040	3522	3426	-96	85	83	-2	170	165	-5	255	248	-7
All	2041	3436	3342	-94	84	82	-2	168	163	-5	252	245	-7
All	2042	3368	3276	-93	83	80	-2	166	162	-5	249	242	-7
All	2043	3307	3216	-91	82	80	-2	164	160	-5	248	241	-7
All	2044	3251	3161	-90	82	79	-2	163	159	-5	245	238	-7
All	2045	3202	3113	-89	81	79	-2	161	157	-4	242	235	-7
All	2046	3153	3065	-88	79	77	-2	160	155	-4	239	232	-7
All	2047	3111	3024	-87	79	77	-2	157	153	-4	237	230	-7
All	2048	3072	2985	-86	78	76	-2	156	152	-4	234	227	-7
All	2049	3035	2950	-85	77	75	-2	154	149	-4	231	224	-6
All	2050	3000	2916	-85	76	74	-2	152	148	-4	228	221	-6
All	2051	3000	2916	-85	75	73	-2	153	148	-4	230	224	-6
All	2052	3000	2916	-85	75	73	-2	153	149	-4	232	225	-7
All	2053	3000	2916	-85	75	73	-2	154	149	-4	233	226	-7
All	2054	3000	2916	-85	74	72	-2	154	150	-4	234	227	-7
All	2055	3000	2916	-85	73	71	-2	154	150	-4	235	228	-7
All	2056	3000	2916	-85	72	70	-2	153	149	-4	235	228	-7
All	2057	3000	2916	-85	71	69	-2	153	149	-4	235	228	-7
All	2058	3000	2916	-85	70	68	-2	152	148	-4	234	228	-7
All	2059	3000	2916	-85	69	67	-2	151	147	-4	234	228	-7
All	2060	3000	2916	-85	68	66	-2	150	146	-4	233	227	-7
All	2061	3000	2916	-85	66	64	-2	149	145	-4	231	225	-7
All	2062	3000	2916	-85	65	63	-2	147	143	-4	230	223	-6
All	2063	3000	2916	-85	63	61	-2	145	141	-4	227	220	-6
All	2064	3000	2916	-85	61	60	-2	143	139	-4	224	218	-6
All	2065	3000	2916	-85	60	58	-2	140	136	-4	221	215	-6
All	2066	3000	2916	-85	58	56	-2	138	134	-4	218	212	-6
All	2067	3000	2916	-85	56	55	-2	135	132	-4	214	208	-6
All	2068	3000	2916	-85	54	53	-2	133	129	-4	211	205	-6
All	2069	3000	2916	-85	53	51	-1	130	126	-4	207	201	-6
All	2070	3000	2916	-85	51	49	-1	127	123	-4	203	197	-6
All	2071	3000	2916	-85	49	47	-1	124	120	-3	199	193	-6

All	2072	3000	2916	-85	47	46	-1	121	118	-3	195	189	-5
All	2073	3000	2916	-85	45	44	-1	118	114	-3	190	185	-5
All	2074	3000	2916	-85	44	42	-1	115	111	-3	186	181	-5
All	2075	3000	2916	-85	42	41	-1	112	108	-3	181	176	-5
All	2076	3000	2916	-85	40	39	-1	108	105	-3	177	172	-5
All	2077	3000	2916	-85	39	37	-1	105	102	-3	172	167	-5
All	2078	3000	2916	-85	37	36	-1	102	99	-3	167	163	-5
All	2079	3000	2916	-85	35	34	-1	99	96	-3	163	158	-5
All	2080	3000	2916	-85	34	33	-1	96	93	-3	158	153	-4
All	2081	3000	2916	-85	32	31	-1	93	90	-3	154	149	-4
All	2082	3000	2916	-85	31	30	-1	90	87	-3	149	145	-4
Car	Total	114615	111898	-2717	2319	2263	-55	4964	4845	-120	7612	7428	-184
LGV Personal	Total	4454	4451	-3	90	90	-0	194	194	-0	298	298	-0
LGV Freight	Total	32655	32631	-24	661	661	-0	1424	1423	-1	2188	2187	-1
OGV1	Total	29922	29071	-850	606	589	-17	1315	1277	-38	2024	1966	-58
OGV2	Total	25304	23766	-1538	512	480	-31	1110	1041	-68	1708	1603	-105
All	Total	206949	201816	-5132	4187	4083	-104	9007	8781	-227	13830	13482	-349

#### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	27	27	0	0	0	0	1	1	0	1	1	0
Car	2037	67	67	0	2	2	0	3	3	0	5	5	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	5	5	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	28	28	0	0	0	0	1	1	0	1	1	0
All	2024	37	37	0	0	0	0	1	1	0	1	1	0
All	2025	49	49	0	1	1	0	1	1	0	2	2	0
All	2026	62	62	0	1	1	0	2	2	0	3	3	0
All	2027	72	72	0	1	1	0	2	2	0	3	3	0
All	2028	80	80	0	1	1	0	3	3	0	4	4	0
All	2029	84	84	0	1	1	0	3	3	0	4	4	0
All	2030	84	84	0	2	2	0	3	3	0	4	4	0
All	2031	86	86	-0	2	2	-0	3	3	-0	5	5	-0
All	2032	86	86	-0	2	2	-0	3	3	-0	5	5	-0
All	2033	85	85	0	2	2	0	3	3	0	5	5	0
All	2034	83	83	0	2	2	0	3	3	0	5	5	0
All	2035	80	80	0	2	2	0	3	3	0	5	5	0

All	2036	77	77	-0	2	2	-0	3	3	-0	5	5	-0
All	2037	73	73	-0	2	2	-0	3	3	-0	5	5	-0
All	2038	69	69	-0	2	2	-0	3	3	-0	5	5	-0
All	2039	64	64	0	2	2	0	3	3	0	5	5	0
All	2040	60	60	0	1	1	0	3	3	0	4	4	0
All	2041	60	60	0	2	2	0	3	3	0	4	4	0
All	2042	60	60	-0	2	2	-0	3	3	-0	4	4	-0
All	2043	60	60	-0	2	2	-0	3	3	-0	4	4	-0
All	2044	59	59	-0	2	2	-0	3	3	-0	4	4	-0
All	2045	59	59	-0	2	2	-0	3	3	-0	4	4	-0
All	2046	58	58	-0	2	2	-0	3	3	-0	4	4	-0
All	2047	57	57	0	2	2	0	3	3	0	4	4	0
All	2048	56	56	-0	1	1	-0	3	3	-0	4	4	-0
All	2049	54	54	-0	1	1	-0	3	3	-0	4	4	-0
All	2050	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2051	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2052	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2053	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2054	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2055	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2056	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2057	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2058	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2059	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2060	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2061	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2062	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2063	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2064	53	53	-0	1	1	-0	3	3	-0	4	4	-0
All	2065	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2066	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2067	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2068	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2069	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2070	53	53	-0	1	1	-0	2	2	-0	4	4	-0
All	2071	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2072	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2073	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2074	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2075	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2076	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2077	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2078	53	53	-0	1	1	-0	2	2	-0	3	3	-0
All	2079	53	53	-0	1	1	-0	2	2	-0	3	3	-0



AM peak	Total	639	639	-0	13	13	-0	27	27	-0	42	42	-0
PM peak	Total	694	694	-0	14	14	-0	30	30	-0	46	46	-0
Inter-peak	Total	1908	1908	0	39	39	0	81	81	0	125	125	0
Off-peak	Total	277	277	0	6	6	0	12	12	0	18	18	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost			Operator_Rev	Indirect
		User_Charges	Time_PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes	
Road	2023	629	0	16	17	0	-9	
Road	2024	707	0	18	19	0	-10	
Road	2025	781	0	19	20	0	-11	
Road	2026	852	0	20	22	0	-11	
Road	2027	920	0	21	23	0	-12	
Road	2028	985	0	22	24	0	-12	
Road	2029	1047	0	23	26	0	-13	
Road	2030	1106	0	23	27	0	-13	
Road	2031	1161	0	23	28	0	-13	
Road	2032	1214	0	23	29	0	-13	
Road	2033	1264	0	23	29	0	-13	
Road	2034	1311	0	22	30	0	-13	
Road	2035	1356	0	22	31	0	-12	
Road	2036	1400	0	22	31	0	-12	
Road	2037	1441	0	22	32	0	-12	
Road	2038	1413	0	21	31	0	-12	
Road	2039	1385	0	20	30	0	-11	
Road	2040	1357	0	19	29	0	-11	
Road	2041	1330	0	18	28	0	-10	
Road	2042	1302	0	17	27	0	-10	
Road	2043	1275	0	16	26	0	-9	
Road	2044	1249	0	15	25	0	-9	
Road	2045	1222	0	15	24	0	-8	
Road	2046	1196	0	14	23	0	-8	
Road	2047	1171	0	13	22	0	-8	
Road	2048	1146	0	13	22	0	-7	
Road	2049	1121	0	12	21	0	-7	
Road	2050	1097	0	12	20	0	-7	
Road	2051	1079	0	12	20	0	-7	
Road	2052	1062	0	11	19	0	-7	
Road	2053	1044	0	11	19	0	-6	
Road	2054	1028	0	11	18	0	-6	
Road	2055	1011	0	10	17	0	-6	
Road	2056	995	0	10	17	0	-6	
Road	2057	980	0	10	16	0	-6	

Road	2058	964	0	10	16	0	-6
Road	2059	949	0	9	16	0	-6
Road	2060	935	0	9	15	0	-5
Road	2061	921	0	9	15	0	-5
Road	2062	907	0	9	14	0	-5
Road	2063	893	0	8	14	0	-5
Road	2064	880	0	8	13	0	-5
Road	2065	867	0	8	13	0	-5
Road	2066	855	0	8	13	0	-5
Road	2067	843	0	8	12	0	-5
Road	2068	831	0	7	12	0	-5
Road	2069	819	0	7	12	0	-4
Road	2070	807	0	7	11	0	-4
Road	2071	795	0	7	11	0	-4
Road	2072	784	0	7	11	0	-4
Road	2073	772	0	7	10	0	-4
Road	2074	761	0	6	10	0	-4
Road	2075	750	0	6	10	0	-4
Road	2076	739	0	6	9	0	-4
Road	2077	728	0	6	9	0	-4
Road	2078	718	0	6	9	0	-4
Road	2079	707	0	6	9	0	-3
Road	2080	697	0	5	8	0	-3
Road	2081	687	0	5	8	0	-3
Road	2082	677	0	5	8	0	-3
Road	Total	59925	0	776	1126	0	-447

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Car	2023	487	0	10	4	0	-5
Car	2037	1115	0	13	8	0	-7
LGV Personal	2023	6	0	0	0	0	-0
LGV Personal	2037	14	0	-0	0	0	0
LGV Freight	2023	103	0	1	3	0	-1
LGV Freight	2037	235	0	-0	6	0	0
OGV1	2023	19	0	2	4	0	-1
OGV1	2037	45	0	3	7	0	-2
OGV2	2023	14	0	4	5	0	-2
OGV2	2037	32	0	6	10	0	-3
All	2023	629	0	16	17	0	-9
All	2037	1441	0	22	32	0	-12
Car	Total	46357	0	441	282	0	-258

LGV Personal	Total	588	0	1	0	0	-1
LGV Freight	Total	9764	0	7	230	0	-4
OGV1	Total	1873	0	116	257	0	-66
OGV2	Total	1344	0	211	356	0	-120
All	Total	59925	0	776	1126	0	-447

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
All	2023	629	0	16	17	0	-9		
All	2037	1441	0	22	32	0	-12		
All	Total	59925	0	776	1126	0	-447		

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
Business	2023	162	0	7	17	0	-4		
Business	2037	375	0	9	32	0	-5		
Commuting	2023	194	0	3	0	0	-2		
Commuting	2037	454	0	4	0	0	-2		
Other	2023	273	0	6	0	0	-4		
Other	2037	613	0	9	0	0	-5		
Business	Total	15562	0	353	1126	0	-200		
Commuting	Total	18836	0	133	0	0	-78		
Other	Total	25528	0	290	0	0	-170		

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
AM peak	2023	63	0	-3	2	0	2		
AM peak	2037	274	0	-8	7	0	4		
PM peak	2023	540	0	19	13	0	-11		
PM peak	2037	1130	0	29	23	0	-17		
Inter-peak	2023	25	0	0	1	0	0		
Inter-peak	2037	36	0	0	1	0	0		
Off-peak	2023	1	0	0	0	0	0		
Off-peak	2037	1	0	0	0	0	0		
AM peak	Total	11005	0	-242	248	0	140		
PM peak	Total	47317	0	1018	824	0	-587		
Inter-peak	Total	1579	0	0	53	0	0		
Off-peak	Total	24	0	0	1	0	0		



NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	3
Car	Business	2037	0	0	-0	4	2	9
Car	Business	Total	0	0	-3	197	82	506
Car	Commuting	2023	0	0	-0	6	0	22
Car	Commuting	2037	0	0	-0	19	9	58
Car	Commuting	Total	0	0	-16	1050	449	3197
Car	Other	2023	0	0	-0	17	0	66
Car	Other	2037	0	0	-1	55	19	173
Car	Other	Total	0	0	-49	3036	971	9602
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	2
LGV Personal	Other	2037	0	0	-0	1	1	4
LGV Personal	Other	Total	0	0	-1	75	28	219
LGV Freight	Business	2023	0	0	-0	3	0	9
LGV Freight	Business	2037	0	0	-0	8	3	24
LGV Freight	Business	Total	0	0	-7	450	166	1319
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	1	0	1
OGV1	Business	2037	0	0	-0	2	1	3
OGV1	Business	Total	0	0	-1	95	38	189
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	1
OGV2	Business	2037	0	0	-0	1	0	3
OGV2	Business	Total	0	0	-1	62	24	146
OGV2	Commuting	2023	0	0	0	0	0	0

OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	7	0	20
Car	Business	2037	0	0	-0	16	7	40
Car	Business	Total	0	0	-8	650	261	1678
Car	Commuting	2023	0	0	-0	39	0	155
Car	Commuting	2037	0	0	-2	102	46	308
Car	Commuting	Total	0	0	-64	4213	1757	12930
Car	Other	2023	0	0	-0	55	0	212
Car	Other	2037	0	0	-2	135	45	422
Car	Other	Total	0	0	-89	5571	1734	17724
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	0	5
LGV Personal	Other	2037	0	0	-0	3	1	10
LGV Personal	Other	Total	0	0	-2	137	49	404
LGV Freight	Business	2023	0	0	-0	22	0	80
LGV Freight	Business	2037	0	0	-1	55	21	160
LGV Freight	Business	Total	0	0	-34	2274	816	6707
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	6	0	13
OGV1	Business	2037	0	0	-0	13	6	26
OGV1	Business	Total	0	0	-6	558	214	1106
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0

OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	4	0	10
OGV2	Business	2037	0	0	-0	9	3	20
OGV2	Business	Total	0	0	-4	360	134	855
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	7	0	24
Car	Business	2037	0	0	-0	17	8	46
Car	Business	Total	0	0	-9	714	293	1885
Car	Commuting	2023	0	0	-0	38	0	159
Car	Commuting	2037	0	0	-2	101	46	312
Car	Commuting	Total	0	0	-64	4176	1777	13080
Car	Other	2023	0	0	-0	53	0	220
Car	Other	2037	0	0	-2	134	46	430
Car	Other	Total	0	0	-89	5546	1763	18009
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	0	5
LGV Personal	Other	2037	0	0	-0	3	1	10
LGV Personal	Other	Total	0	0	-2	128	49	413
LGV Freight	Business	2023	0	0	-0	23	0	84
LGV Freight	Business	2037	0	0	-1	54	22	166
LGV Freight	Business	Total	0	0	-34	2265	836	6934
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	7	0	18
OGV1	Business	2037	0	0	-0	16	7	33
OGV1	Business	Total	0	0	-6	651	264	1337



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	2	0	0	0	0	0	0
OGV1	Business	2037	0	6	0	0	0	0	0	0
OGV1	Business	Total	0	321	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	4	0	0	0	0	0	0
OGV2	Business	Total	0	230	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	27	0	0	0	0	0	0
Car	Business	2037	0	62	0	0	0	0	0	0
Car	Business	Total	0	2581	0	0	0	0	0	0
Car	Commuting	2023	0	194	0	0	0	0	0	0
Car	Commuting	2037	0	454	0	0	0	0	0	0
Car	Commuting	Total	0	18836	0	0	0	0	0	0
Car	Other	2023	0	267	0	0	0	0	0	0
Car	Other	2037	0	599	0	0	0	0	0	0
Car	Other	Total	0	24940	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	6	0	0	0	0	0	0
LGV Personal	Other	2037	0	14	0	0	0	0	0	0
LGV Personal	Other	Total	0	588	0	0	0	0	0	0
LGV Freight	Business	2023	0	103	0	0	0	0	0	0
LGV Freight	Business	2037	0	235	0	0	0	0	0	0



LGV Personal Other	2023	0	6	0	0	0	0	0	0
LGV Personal Other	2037	0	14	0	0	0	0	0	0
LGV Personal Other	Total	0	589	0	0	0	0	0	0
LGV Freight Business	2023	0	107	0	0	0	0	0	0
LGV Freight Business	2037	0	241	0	0	0	0	0	0
LGV Freight Business	Total	0	10000	0	0	0	0	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0	0	0
OGV1 Business	2023	0	25	0	0	0	0	0	0
OGV1 Business	2037	0	56	0	0	0	0	0	0
OGV1 Business	Total	0	2246	0	0	0	0	0	0
OGV1 Commuting	2023	0	0	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0	0	0
OGV2 Business	2023	0	23	0	0	0	0	0	0
OGV2 Business	2037	0	48	0	0	0	0	0	0
OGV2 Business	Total	0	1911	0	0	0	0	0	0
OGV2 Commuting	2023	0	0	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	19.01%	40.85%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	18836	18836
Vehicle operating costs	133	133
User charges	0	0
During Construction & Maintenance	0	0

NET CONSUMER - COMMUTING BENEFITS      18968      18968

Consumer - Other user benefits      All Modes      Road

Travel Time      25528      25528

Vehicle operating costs      290      290

User charges      0      0

During Construction & Maintenance      0      0

NET CONSUMER - OTHER BENEFITS      25818      25818

Business      All Modes Road Personal Road Freight

Travel Time      15562      2581      12980

Vehicle operating costs      1478      301      1177

User charges      0      0      0

During Construction & Maintenance      0      0      0

Subtotal      17040      2883      14158

Private Sector Provider Impacts

Revenue      0      0

Operating costs      0      0

Investment costs      0      0

Grant/subsidy      0      0

Subtotal      0      0

Other business Impacts

Developer contributions      -335      -335

NET BUSINESS IMPACT      16705

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)      61491

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding      ALL MODES      Road

Revenue      0      0

Operating Costs      141      141

Investment Costs      937      937

Developer Contributions      -335      -335

Grant/Subsidy Payments      0      0

NET IMPACT      743      743

Central Government Funding: Transport      ALL MODES      Road



Revenue	0	0
Operating costs	0	0
Investment costs	3640	3640
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	3640	3640

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	447	447
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#### TOTALS

Broad Transport Budget	4383	4383
Wider Public Finances	447	447

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	227
Economic Efficiency: Consumer Users (Commuting)	18968
Economic Efficiency: Consumer Users (Other)	25818
Economic Efficiency: Business Users and Providers	16705
Wider Public Finances (Indirect Taxation Revenues)	-447
Present Value of Benefits (PVB)	61271
Broad Transport Budget	4383
Present Value of Costs (PVC)	4383
OVERALL IMPACTS	
Net Present Value (NPV)	56888
Benefit to Cost Ratio (BCR)	13.979

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-6\_Lowdham\_V4\_High\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_High\_V4\_Sens\_15OB\6-Lowdham\_V4\_High\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_High\_V4\_Sens\_15OB\6-Lowdham\_V4\_High\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-6\_Lowdham-LowV4\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2024 2025 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	502.86	F	119.37	1
C	1	CEN	5273.71	F	119.37	1
L	1	CEN	68.25	F	119.37	1
S	1	CEN	20.61	F	119.37	1
P	1	LOC	76.6705	F	119.37	1

C	1	LOC	1246.721	F	119.37	1
S	1	LOC	45.7565	F	119.37	1
D	1	LOC	517.5	F	119.37	1
L	1	LOC	10.2375	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00		23.50	36.90	0.00	0.00	0.00	0.00
2021	1	83.20		23.50	63.10	50.00	0.00	0.00	11.11
2022	1	16.80		35.40	0.00	50.00	0.00	0.00	22.22
2023	1	0.00		17.60	0.00	0.00	0.00	0.00	66.67
2024	1	0.00		0.00	0.00	0.00	0.975	0.00	0.00
2025	1	0.00		0.00	0.00	0.00	0.953	0.00	0.00
2026	1	0.0		0.0	0.0	0.0	0.932	0.0	0.0
2027	1	0.0		0.0	0.0	0.0	0.911	0.0	0.0
2028	1	0.0		0.0	0.0	0.0	1.788	0.0	0.0
2029	1	0.0		0.0	0.0	0.0	0.870	0.0	0.0
2030	1	0.0		0.0	0.0	0.0	0.851	0.0	0.0
2031	1	0.0		0.0	0.0	0.0	0.831	0.0	0.0
2032	1	0.0		0.0	0.0	0.0	0.813	0.0	0.0
2033	1	0.0		0.0	0.0	0.0	5.028	0.0	0.0
2034	1	0.0		0.0	0.0	0.0	0.777	0.0	0.0
2035	1	0.0		0.0	0.0	0.0	0.759	0.0	0.0

2036	1	0.0	0.0	0.0	0.0	0.742	0.0	0.0	0.0
2037	1	0.0	0.0	0.0	0.0	0.725	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.424	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.693	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.678	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.662	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.647	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	27.234	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.619	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.605	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.591	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.578	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	2.458	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.552	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.540	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.528	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.516	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	3.190	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.493	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.482	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.471	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.460	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	0.904	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.440	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.430	0.0	0.0	0.0

2061	1	0.0	0.0	0.0	0.0	0.420	0.0	0.0	0.0
2062	1	0.0	0.0	0.0	0.0	0.411	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	27.041	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.393	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.384	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.375	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.367	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	0.720	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.350	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.343	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.335	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.327	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	3.524	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.313	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.306	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.299	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.292	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	0.573	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.279	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.272	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.266	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.260	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05743	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
2	2	1	V	1	0	2023	0.31641	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
3	3	1	V	1	0	2023	0.45226	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01500	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11000	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03010	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt



7	7	1	V	1	0	2023	0.01880	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2023 DM.txt
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30	2	1	V	1	1	2023	0.31641	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DS.txt
31	3	1	V	1	1	2023	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DS.txt

32	4	1	V	1	1	2023	0.01500	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2023 DS.txt
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38	3	2	V	1	1	2023	0.52626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2023 DS.txt
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43	1	3	V	1	1	2023	0.05581	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2023 DS.txt
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45	3	3	V	1	1	2023	0.63282	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2023 DS.txt
47	5	3	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2023 DS.txt
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51	2	4	V	1	1	2023	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2023 DS.txt
52	3	4	V	1	1	2023	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2023 DS.txt
53	4	4	V	1	1	2023	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2023 DS.txt
54	5	4	V	1	1	2023	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2023 DS.txt
55	6	4	V	1	1	2023	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2023 DS.txt
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171	3	1	V	1	0	2037	0.45226	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L AM 2037 DM.txt
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205	2	2	V	1	1	2037	0.27515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2037 DS.txt
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207	4	2	V	1	1	2037	0.01470	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2037 DS.txt
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210	7	2	V	1	1	2037	0.01430	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L PM 2037 DS.txt
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214	4	3	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2037 DS.txt
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217	7	3	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L IP 2037 DS.txt
218	1	4	V	1	1	2037	0.03345	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
219	2	4	V	1	1	2037	0.22320	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
220	3	4	V	1	1	2037	0.51955	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
221	4	4	V	1	1	2037	0.01636	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
222	5	4	V	1	1	2037	0.11994	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
223	6	4	V	1	1	2037	0.05730	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
224	7	4	V	1	1	2037	0.03020	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\V_6_Lowdham_L OP 2037 DS.txt
225	1	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
226	2	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
227	3	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
228	4	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
229	5	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
230	6	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt
231	7	1	T	1	0	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\T_6_Lowdham_L AM 2037 DM.txt









332	3	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L OP 2037 DS.txt
333	4	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L OP 2037 DS.txt
334	5	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L OP 2037 DS.txt
335	6	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L OP 2037 DS.txt
336	7	4	D	1	1	2037	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L OP 2037 DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\6-Lowdham\Outputs_V4_Low\D_6_Lowdham_L AM 2023 DM.txt

SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:11:34

ERRORS AND WARNINGS

1974 Warnings found in total (including any above)

Warning (98 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
4	1	2	Car	Business	All	2023	0.040	0.001	36.639	11.750	11.750	
4	2	2	Car	Business	All	2023	0.040	0.001	36.639	13.046	13.046	
4	3	2	Car	Business	All	2023	0.040	0.001	36.639	9.893	9.893	
4	3	2	LGV	Personal	Other	All	2023	0.040	0.001	36.639	3.366	3.366
4	1	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	29.322	29.322
4	2	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	32.556	32.556
4	1	2	Car	Commuting	All	2023	0.040	0.001	36.639	74.841	74.841	
4	2	2	Car	Commuting	All	2023	0.040	0.001	36.639	83.095	83.095	
4	3	2	Car	Commuting	All	2023	0.040	0.001	36.639	63.009	63.009	
4	3	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	24.686	24.686
4	1	2	OGV1	Business	All	2023	0.040	0.001	36.639	5.032	5.032	
4	2	2	OGV1	Business	All	2023	0.040	0.001	36.639	5.587	5.587	
4	1	2	Car	Other	All	2023	0.040	0.001	36.639	143.143	143.143	
4	2	2	Car	Other	All	2023	0.040	0.001	36.639	158.931	158.931	
4	3	2	Car	Other	All	2023	0.040	0.001	36.639	120.514	120.514	

4	3	2	OGV1	Business	All	2023	0.040	0.001	36.639	4.237	4.237
4	1	2	OGV2	Business	All	2023	0.040	0.001	36.639	3.890	3.890
4	2	2	OGV2	Business	All	2023	0.040	0.001	36.639	4.319	4.319
4	1	2	LGV Personal	Other	All	2023	0.040	0.001	36.639	3.998	3.998
4	2	2	LGV Personal	Other	All	2023	0.040	0.001	36.639	4.439	4.439

Displayed 20 warnings of a total of 238 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.272	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.268	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.362	85.000
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.516	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.407	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.688	85.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.301	130.000
1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.405	130.000
1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.401	130.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.079	110.000
1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.037	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.439	110.000



1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.009	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	9.374	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.678	130.000

Displayed 20 warnings of a total of 840 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	1.919	110.000
4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.039	110.000
4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.519	110.000
4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.917	85.000
4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.974	85.000
4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.203	85.000
4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.483	85.000
4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.513	85.000
4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.634	85.000
4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.535	130.000
4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.569	130.000
4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.702	130.000
4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.571	130.000

4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.794	130.000
4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.687	130.000
4	4	4	Car	Commuting	All	2023	2.000	0.000	5128.205	0.000	130.000

Displayed 20 warnings of a total of 896 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-6\_Lowdham-LowV4\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_Low\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997



Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0

Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0
Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	137	0	0	0

Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0
Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0

Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9
Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3



Road	2027	0	3	3
Road	2028	0	5	5
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2
Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1

Road	2052	0	1	1
Road	2053	0	4	4
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	23	23
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0

Road	2077	0	0	0
Road	2078	0	0	0
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1853	1853
Car	2023	PM peak	1971	1971
Car	2023	Inter-peak	5464	5464
Car	2023	Off-peak	789	789
Car	2023	All	10077	10077
Car	2037	AM peak	1838	1838
Car	2037	PM peak	1937	1937
Car	2037	Inter-peak	5418	5418
Car	2037	Off-peak	785	785
Car	2037	All	9979	9979
LGV Personal	2023	AM peak	34	34
LGV Personal	2023	PM peak	34	34
LGV Personal	2023	Inter-peak	115	115
LGV Personal	2023	Off-peak	17	17

LGV Personal	2023 All	200	200
LGV Personal	2037 AM peak	33	33
LGV Personal	2037 PM peak	34	34
LGV Personal	2037 Inter-peak	114	114
LGV Personal	2037 Off-peak	17	17
LGV Personal	2037 All	198	198
LGV Freight	2023 AM peak	247	247
LGV Freight	2023 PM peak	252	252
LGV Freight	2023 Inter-peak	844	844
LGV Freight	2023 Off-peak	122	122
LGV Freight	2023 All	1464	1464
LGV Freight	2037 AM peak	245	245
LGV Freight	2037 PM peak	247	247
LGV Freight	2037 Inter-peak	837	837
LGV Freight	2037 Off-peak	121	121
LGV Freight	2037 All	1451	1451
OGV1	2023 AM peak	68	68
OGV1	2023 PM peak	43	43
OGV1	2023 Inter-peak	403	403
OGV1	2023 Off-peak	58	58
OGV1	2023 All	572	572
OGV1	2037 AM peak	67	67
OGV1	2037 PM peak	42	42
OGV1	2037 Inter-peak	400	400
OGV1	2037 Off-peak	58	58

OGV1	2037 All	567	567
OGV2	2023 AM peak	42	42
OGV2	2023 PM peak	33	33
OGV2	2023 Inter-peak	213	213
OGV2	2023 Off-peak	31	31
OGV2	2023 All	319	319
OGV2	2037 AM peak	42	42
OGV2	2037 PM peak	33	33
OGV2	2037 Inter-peak	211	211
OGV2	2037 Off-peak	31	31
OGV2	2037 All	316	316
All	2023 AM peak	2243	2243
All	2023 PM peak	2333	2333
All	2023 Inter-peak	7040	7040
All	2023 Off-peak	1016	1016
All	2023 All	12632	12632
All	2037 AM peak	2225	2225
All	2037 PM peak	2294	2294
All	2037 Inter-peak	6980	6980
All	2037 Off-peak	1012	1012
All	2037 All	12511	12511

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	309	0	1417	919	112	0	1427	914
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Road	2037	197	0	771	562	86	0	776	559
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FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	656	620	92	660	626	92
Car	2037	488	345	705	493	349	705
LGV Personal	2023	0	38	1	0	38	1
LGV Personal	2037	0	31	15	0	31	15
LGV Freight	2023	3	276	6	3	279	6
LGV Freight	2037	2	224	108	2	227	108
OGV1	2023	0	193	0	0	193	0
OGV1	2037	0	191	0	0	191	0
OGV2	2023	0	179	0	0	178	0
OGV2	2037	0	177	0	0	176	0
All	2023	660	1306	99	664	1315	99
All	2037	490	968	829	495	974	829
Car	Total	25866	18813	54329	26120	19028	54329
LGV Personal	Total	13	1715	1315	13	1734	1315
LGV Freight	Total	94	12574	9639	95	12717	9639
OGV1	Total	0	11480	0	0	11483	0
OGV2	Total	0	10611	0	0	10596	0
All	Total	25973	55193	65283	26229	55558	65283

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	2859	2883	24	57	58	0	116	117	1	173	175	1
Car	2037	1846	1867	20	42	43	0	84	85	1	127	128	1
LGV Personal	2023	92	93	1	2	2	0	4	4	0	6	6	0
LGV Personal	2037	74	75	1	2	2	0	3	3	0	5	5	0
LGV Freight	2023	676	683	8	14	14	0	27	28	0	41	41	0
LGV Freight	2037	546	552	6	13	13	0	25	25	0	37	38	0
OGV1	2023	467	467	-0	9	9	-0	19	19	-0	28	28	-0
OGV1	2037	463	463	0	11	11	0	21	21	0	32	32	0
OGV2	2023	433	431	-2	9	9	-0	18	17	-0	26	26	-0
OGV2	2037	427	427	-0	10	10	-0	20	19	-0	29	29	-0
All	2023	4527	4557	30	91	91	1	184	185	1	274	276	2
All	2024	4433	4463	30	88	89	1	176	177	1	264	266	2
All	2025	4327	4356	30	85	86	1	168	169	1	254	255	2
All	2026	4231	4260	30	81	81	1	161	162	1	242	243	2
All	2027	4135	4165	29	78	79	1	154	155	1	232	234	2
All	2028	4034	4063	29	74	74	1	149	150	1	223	224	2
All	2029	3946	3974	29	71	72	1	143	144	1	214	216	2
All	2030	3857	3885	28	67	68	0	136	137	1	204	205	2
All	2031	3766	3794	28	70	70	1	140	141	1	210	211	2
All	2032	3689	3717	28	72	73	1	144	145	1	217	218	2
All	2033	3618	3645	28	74	75	1	147	148	1	221	223	2

All	2034	3542	3570	28	74	75	1	150	151	1	224	226	2
All	2035	3479	3507	28	75	76	1	151	152	1	228	230	2
All	2036	3420	3448	27	77	77	1	153	154	1	230	232	2
All	2037	3356	3384	27	77	78	1	153	154	1	230	232	2
All	2038	3306	3333	27	77	77	1	155	156	1	231	233	2
All	2039	3259	3285	26	77	78	1	155	156	1	233	235	2
All	2040	3206	3232	26	77	78	1	155	156	1	232	234	2
All	2041	3160	3185	25	78	78	1	154	155	1	232	233	2
All	2042	3115	3140	25	77	77	1	154	155	1	231	232	2
All	2043	3066	3090	24	76	77	1	152	154	1	229	231	2
All	2044	3025	3049	24	76	77	1	152	153	1	228	230	2
All	2045	2987	3011	23	76	76	1	150	151	1	226	228	2
All	2046	2944	2967	23	74	75	1	149	150	1	223	225	2
All	2047	2909	2931	22	74	74	1	147	148	1	222	223	2
All	2048	2873	2895	22	73	74	1	146	147	1	219	221	2
All	2049	2833	2855	21	72	73	1	144	145	1	216	217	2
All	2050	2798	2819	21	71	71	1	142	143	1	212	214	2
All	2051	2798	2819	21	70	71	1	142	144	1	215	216	2
All	2052	2798	2819	21	70	71	1	143	144	1	216	218	2
All	2053	2798	2819	21	70	70	1	143	144	1	217	219	2
All	2054	2798	2819	21	69	69	1	143	145	1	218	220	2
All	2055	2798	2819	21	68	69	1	144	145	1	219	220	2
All	2056	2798	2819	21	67	68	1	143	144	1	219	221	2
All	2057	2798	2819	21	66	67	1	143	144	1	219	221	2
All	2058	2798	2819	21	65	66	0	142	143	1	219	220	2



All	2059	2798	2819	21	64	65	0	141	142	1	218	220	2
All	2060	2798	2819	21	63	64	0	140	141	1	217	219	2
All	2061	2798	2819	21	62	62	0	139	140	1	216	217	2
All	2062	2798	2819	21	60	61	0	137	138	1	214	216	2
All	2063	2798	2819	21	59	59	0	135	136	1	212	213	2
All	2064	2798	2819	21	57	58	0	133	134	1	209	211	2
All	2065	2798	2819	21	56	56	0	131	132	1	206	208	2
All	2066	2798	2819	21	54	54	0	129	130	1	203	205	2
All	2067	2798	2819	21	52	53	0	126	127	1	200	201	2
All	2068	2798	2819	21	50	51	0	124	125	1	197	198	1
All	2069	2798	2819	21	49	49	0	121	122	1	193	194	1
All	2070	2798	2819	21	47	48	0	118	119	1	189	190	1
All	2071	2798	2819	21	46	46	0	116	116	1	185	187	1
All	2072	2798	2819	21	44	44	0	113	114	1	181	183	1
All	2073	2798	2819	21	42	43	0	110	111	1	177	179	1
All	2074	2798	2819	21	41	41	0	107	108	1	173	175	1
All	2075	2798	2819	21	39	39	0	104	105	1	169	170	1
All	2076	2798	2819	21	37	38	0	101	102	1	165	166	1
All	2077	2798	2819	21	36	36	0	98	99	1	161	162	1
All	2078	2798	2819	21	34	35	0	95	96	1	156	157	1
All	2079	2798	2819	21	33	33	0	92	93	1	152	153	1
All	2080	2798	2819	21	31	32	0	89	90	1	147	148	1
All	2081	2798	2819	21	30	30	0	87	87	1	143	145	1
All	2082	2798	2819	21	29	29	0	84	85	1	139	140	1
Car	Total	99097	100142	1046	2007	2028	21	4304	4349	46	6602	6672	70

LGV Personal Total	4177	4225	48	85	86	1	183	185	2	281	284	3
LGV Freight Total	30627	30976	349	620	627	7	1340	1355	15	2059	2083	23
OGV1 Total	27784	27792	7	562	562	0	1222	1222	0	1882	1883	1
OGV2 Total	25682	25645	-36	520	519	-1	1129	1128	-2	1740	1737	-2
All Total	187367	188780	1412	3794	3822	29	8177	8239	62	12564	12659	95

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	24	24	0	0	0	0	0	0	1	1	0	
Car	2037	41	41	0	1	1	0	2	2	0	3	3	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	6	6	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	25	25	0	0	0	0	0	0	1	1	0	
All	2024	31	31	0	0	0	1	1	0	1	1	0	
All	2025	38	38	0	0	0	1	1	0	1	1	0	
All	2026	45	45	0	1	1	0	1	1	0	2	2	0
All	2027	51	51	0	1	1	0	2	2	0	2	2	0
All	2028	55	55	0	1	1	0	2	2	0	3	3	0

All	2029	57	57	0	1	1	0	2	2	0	3	3	0
All	2030	57	57	0	1	1	0	2	2	0	3	3	0
All	2031	58	58	0	1	1	0	2	2	0	3	3	0
All	2032	58	58	0	1	1	0	2	2	0	3	3	0
All	2033	57	57	0	1	1	0	2	2	0	3	3	0
All	2034	55	55	0	1	1	0	2	2	0	3	3	0
All	2035	53	53	0	1	1	0	2	2	0	3	3	0
All	2036	50	50	0	1	1	0	2	2	0	3	3	0
All	2037	48	48	0	1	1	0	2	2	0	3	3	0
All	2038	45	45	0	1	1	0	2	2	0	3	3	0
All	2039	42	42	0	1	1	0	2	2	0	3	3	0
All	2040	40	40	0	1	1	0	2	2	0	3	3	0
All	2041	40	40	0	1	1	0	2	2	0	3	3	0
All	2042	40	40	0	1	1	0	2	2	0	3	3	0
All	2043	41	41	0	1	1	0	2	2	0	3	3	0
All	2044	41	41	0	1	1	0	2	2	0	3	3	0
All	2045	41	41	0	1	1	0	2	2	0	3	3	0
All	2046	40	40	0	1	1	0	2	2	0	3	3	0
All	2047	40	40	0	1	1	0	2	2	0	3	3	0
All	2048	39	39	0	1	1	0	2	2	0	3	3	0
All	2049	39	39	0	1	1	0	2	2	0	3	3	0
All	2050	38	38	0	1	1	0	2	2	0	3	3	0
All	2051	38	38	0	1	1	0	2	2	0	3	3	0
All	2052	38	38	0	1	1	0	2	2	0	3	3	0
All	2053	38	38	0	1	1	0	2	2	0	3	3	0

All	2054	38	38	0	1	1	0	2	2	0	3	3	0
All	2055	38	38	0	1	1	0	2	2	0	3	3	0
All	2056	38	38	0	1	1	0	2	2	0	3	3	0
All	2057	38	38	0	1	1	0	2	2	0	3	3	0
All	2058	38	38	0	1	1	0	2	2	0	3	3	0
All	2059	38	38	0	1	1	0	2	2	0	3	3	0
All	2060	38	38	0	1	1	0	2	2	0	3	3	0
All	2061	38	38	0	1	1	0	2	2	0	3	3	0
All	2062	38	38	0	1	1	0	2	2	0	3	3	0
All	2063	38	38	0	1	1	0	2	2	0	3	3	0
All	2064	38	38	0	1	1	0	2	2	0	3	3	0
All	2065	38	38	0	1	1	0	2	2	0	3	3	0
All	2066	38	38	0	1	1	0	2	2	0	3	3	0
All	2067	38	38	0	1	1	0	2	2	0	3	3	0
All	2068	38	38	0	1	1	0	2	2	0	3	3	0
All	2069	38	38	0	1	1	0	2	2	0	3	3	0
All	2070	38	38	0	1	1	0	2	2	0	3	3	0
All	2071	38	38	0	1	1	0	2	2	0	2	2	0
All	2072	38	38	0	1	1	0	2	2	0	2	2	0
All	2073	38	38	0	1	1	0	1	1	0	2	2	0
All	2074	38	38	0	1	1	0	1	1	0	2	2	0
All	2075	38	38	0	1	1	0	1	1	0	2	2	0
All	2076	38	38	0	1	1	0	1	1	0	2	2	0
All	2077	38	38	0	1	1	0	1	1	0	2	2	0
All	2078	38	38	0	0	0	0	1	1	0	2	2	0

All	2079	38	38	0	0	0	0	1	1	0	2	2	0
All	2080	38	38	0	0	0	0	1	1	0	2	2	0
All	2081	38	38	0	0	0	0	1	1	0	2	2	0
All	2082	38	38	0	0	0	0	1	1	0	2	2	0
Car	Total	2083	2083	0	42	42	0	88	88	0	136	136	0
LGV Personal	Total	47	47	0	1	1	0	2	2	0	3	3	0
LGV Freight	Total	342	342	0	7	7	0	15	15	0	23	23	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2472	2472	0	50	50	0	105	105	0	162	162	0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	773	773	0	15	15	0	31	31	0	47	47	0
AM peak	2037	561	561	0	13	13	0	26	26	0	39	39	0
PM peak	2023	747	777	30	15	16	1	30	32	1	45	47	2
PM peak	2037	521	548	27	12	13	1	24	25	1	36	38	2
Inter-peak	2023	2627	2627	0	53	53	0	107	107	0	159	159	0
Inter-peak	2037	1987	1987	0	46	46	0	91	91	0	136	136	0
Off-peak	2023	379	379	0	8	8	0	15	15	0	23	23	0
Off-peak	2037	288	288	0	7	7	0	13	13	0	20	20	0
AM peak	Total	31054	31054	0	629	629	0	1354	1354	0	2080	2080	0
PM peak	Total	28810	30222	1412	583	612	29	1255	1317	62	1927	2022	95
Inter-peak	Total	111369	111369	0	2255	2255	0	4863	4863	0	7474	7474	0

Off-peak	Total	16134	16134	0	327	327	0	705	705	0	1083	1083	0
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NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	2037	9	9	0	0	0	0	0	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	9	9	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	26	26	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	4	4	0	0	0	0	0	0	0	0	0	0
AM peak	Total	449	449	0	9	9	0	19	19	0	29	29	0
PM peak	Total	471	471	0	10	10	0	20	20	0	31	31	0
Inter-peak	Total	1355	1355	0	28	28	0	58	58	0	89	89	0
Off-peak	Total	196	196	0	4	4	0	8	8	0	13	13	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	197	0	-9	5	0	5
Road	2024	189	0	-9	5	0	5
Road	2025	181	0	-9	5	0	5
Road	2026	174	0	-9	4	0	5
Road	2027	167	0	-8	4	0	5
Road	2028	161	0	-8	4	0	4
Road	2029	155	0	-8	4	0	4
Road	2030	149	0	-8	4	0	4
Road	2031	143	0	-7	3	0	4
Road	2032	138	0	-7	3	0	4
Road	2033	132	0	-7	3	0	4
Road	2034	127	0	-7	3	0	4
Road	2035	122	0	-6	3	0	4
Road	2036	117	0	-6	3	0	3
Road	2037	112	0	-6	2	0	3
Road	2038	110	0	-6	2	0	3
Road	2039	108	0	-5	2	0	3
Road	2040	107	0	-5	2	0	3
Road	2041	105	0	-5	2	0	3
Road	2042	104	0	-5	2	0	3
Road	2043	102	0	-4	2	0	3

Road	2044	101	0	-4	2	0	2
Road	2045	99	0	-4	2	0	2
Road	2046	97	0	-4	2	0	2
Road	2047	96	0	-4	2	0	2
Road	2048	94	0	-3	2	0	2
Road	2049	93	0	-3	2	0	2
Road	2050	92	0	-3	2	0	2
Road	2051	91	0	-3	1	0	2
Road	2052	90	0	-3	1	0	2
Road	2053	89	0	-3	1	0	2
Road	2054	88	0	-3	1	0	2
Road	2055	87	0	-3	1	0	2
Road	2056	86	0	-3	1	0	2
Road	2057	85	0	-3	1	0	2
Road	2058	84	0	-3	1	0	2
Road	2059	84	0	-2	1	0	1
Road	2060	83	0	-2	1	0	1
Road	2061	82	0	-2	1	0	1
Road	2062	81	0	-2	1	0	1
Road	2063	80	0	-2	1	0	1
Road	2064	80	0	-2	1	0	1
Road	2065	79	0	-2	1	0	1
Road	2066	78	0	-2	1	0	1
Road	2067	78	0	-2	1	0	1
Road	2068	77	0	-2	1	0	1



Road	2069	76	0	-2	1	0	1
Road	2070	76	0	-2	1	0	1
Road	2071	75	0	-2	1	0	1
Road	2072	74	0	-2	1	0	1
Road	2073	74	0	-2	1	0	1
Road	2074	73	0	-2	1	0	1
Road	2075	73	0	-2	1	0	1
Road	2076	72	0	-2	1	0	1
Road	2077	71	0	-2	1	0	1
Road	2078	71	0	-2	1	0	1
Road	2079	70	0	-1	1	0	1
Road	2080	69	0	-1	1	0	1
Road	2081	69	0	-1	1	0	1
Road	2082	68	0	-1	1	0	1
Road	Total	6084	0	-234	111	0	137

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	152	0	-8	1	0	4
Car	2037	86	0	-4	1	0	3
LGV Personal	2023	2	0	-0	0	0	0
LGV Personal	2037	1	0	-0	0	0	0
LGV Freight	2023	32	0	-2	1	0	1

LGV Freight	2037	18	0	-1	0	0	1
OGV1	2023	7	0	0	1	0	-0
OGV1	2037	4	0	-0	1	0	0
OGV2	2023	5	0	1	2	0	-0
OGV2	2037	3	0	0	1	0	-0
All	2023	197	0	-9	5	0	5
All	2037	112	0	-6	2	0	3
Car	Total	4662	0	-179	26	0	105
LGV Personal	Total	60	0	-7	0	0	4
LGV Freight	Total	1001	0	-54	22	0	31
OGV1	Total	215	0	-1	27	0	0
OGV2	Total	147	0	7	36	0	-4
All	Total	6084	0	-234	111	0	137

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	197	0	-9	5	0	5
All	2037	112	0	-6	2	0	3
All	Total	6084	0	-234	111	0	137

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	52	0	-2	5	0	1
Business	2037	30	0	-1	2	0	1
Commuting	2023	58	0	-2	0	0	1
Commuting	2037	33	0	-1	0	0	1
Other	2023	87	0	-5	0	0	3
Other	2037	49	0	-3	0	0	2
Business	Total	1626	0	-57	111	0	33
Commuting	Total	1779	0	-58	0	0	34
Other	Total	2679	0	-119	0	0	70

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	18	0	0	1	0	0
AM peak	2037	13	0	0	0	0	0
PM peak	2023	161	0	-9	4	0	5
PM peak	2037	84	0	-6	2	0	3
Inter-peak	2023	18	0	0	1	0	0
Inter-peak	2037	14	0	0	0	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	0	0	0	0	0	0
AM peak	Total	686	0	0	14	0	0
PM peak	Total	4678	0	-234	75	0	137

Inter-peak	Total	699	0	0	21	0	0
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Off-peak	Total	22	0	0	1	0	0
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NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	0	1	0
Car	Business	2037	0	0	-0	1	0	0
Car	Business	Total	0	0	-0	56	8	0
Car	Commuting	2023	0	0	-0	1	6	0
Car	Commuting	2037	0	0	-0	6	0	0
Car	Commuting	Total	0	0	-0	306	48	0
Car	Other	2023	0	0	-0	6	19	0
Car	Other	2037	0	0	-0	18	0	0
Car	Other	Total	0	0	-0	999	146	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-0	23	3	0
LGV Freight	Business	2023	0	0	-0	1	3	0

LGV Freight	Business	2037	0	0	-0	3	0	0
LGV Freight	Business	Total	0	0	-0	139	20	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	27	3	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-0	18	2	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0

OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	2	6	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-0	221	43	0
Car	Commuting	2023	0	0	-0	11	47	0
Car	Commuting	2037	0	0	-0	33	0	0
Car	Commuting	Total	0	0	-0	1451	329	0
Car	Other	2023	0	0	-0	20	65	0
Car	Other	2037	0	0	-0	48	0	0
Car	Other	Total	0	0	-1	2169	451	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	1	0	0
LGV Personal	Other	Total	0	0	-0	50	10	0
LGV Freight	Business	2023	0	0	-0	8	25	0
LGV Freight	Business	2037	0	0	-0	18	0	0

LGV Freight	Business	Total	0	0	-0	831	171	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	3	4	0
OGV1	Business	2037	0	0	-0	4	0	0
OGV1	Business	Total	0	0	-0	187	28	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	1	3	0
OGV2	Business	2037	0	0	-0	3	0	0
OGV2	Business	Total	0	0	-0	125	22	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	3	7	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-0	234	46	0
Car	Commuting	2023	0	0	-0	11	45	0
Car	Commuting	2037	0	0	-0	31	0	0
Car	Commuting	Total	0	0	-0	1407	315	0
Car	Other	2023	0	0	-0	20	60	0
Car	Other	2037	0	0	-0	45	0	0
Car	Other	Total	0	0	-1	2085	423	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	1	0	0
LGV Personal	Other	Total	0	0	-0	45	8	0
LGV Freight	Business	2023	0	0	-0	8	23	0
LGV Freight	Business	2037	0	0	-0	18	0	0
LGV Freight	Business	Total	0	0	-0	807	161	0



LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	3	5	0
OGV1	Business	2037	0	0	-0	5	0	0
OGV1	Business	Total	0	0	-0	207	34	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	2	5	0
OGV2	Business	2037	0	0	-0	4	0	0
OGV2	Business	Total	0	0	-0	156	34	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0



LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	1	0	0	0	0	0	0
OGV1	Business	2037	0	0	0	0	0	0	0	0
OGV1	Business	Total	0	30	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	20	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

MONETISED TIME BENEFITS BY DISTANCE



LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	7	0	0	0	0	0	0
OGV1	Business	2037	0	4	0	0	0	0	0	0
OGV1	Business	Total	0	215	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	5	0	0	0	0	0	0
OGV2	Business	2037	0	3	0	0	0	0	0	0
OGV2	Business	Total	0	147	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	8	0	0	0	0	0	0
OGV1	Business	2037	0	5	0	0	0	0	0	0
OGV1	Business	Total	0	241	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	7	0	0	0	0	0	0
OGV2	Business	2037	0	4	0	0	0	0	0	0
OGV2	Business	Total	0	189	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 7.29% 7.07%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	1779	1779
Vehicle operating costs	-58	-58
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - COMMUTING BENEFITS	1721	1721

Consumer - Other user benefits	All Modes	Road
Travel Time	2679	2679
Vehicle operating costs	-119	-119
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	2560	2560

Business	All Modes	Road Personal	Road Freight
Travel Time	1626	263	1362
Vehicle operating costs	54	17	36
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	1679	281	1398



Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-335	-335
NET BUSINESS IMPACT	1344	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	5625
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	141	141
Investment Costs	937	937
Developer Contributions	-335	-335

Grant/Subsidy Payments	0	0
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NET IMPACT	743	743
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Central Government Funding: Transport	ALL MODES	Road
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Revenue	0	0
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Operating costs	0	0
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Investment costs	3640	3640
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Developer Contributions	0	0
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Grant/Subsidy Payments	0	0
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NET IMPACT	3640	3640
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Central Government Funding: Non-Transport

Indirect Tax Revenues	-137	-137
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TOTALS

Broad Transport Budget	4383	4383
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Wider Public Finances	-137	-137
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-62
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Economic Efficiency: Consumer Users (Commuting)	1721
Economic Efficiency: Consumer Users (Other)	2560
Economic Efficiency: Business Users and Providers	1344
Wider Public Finances (Indirect Taxation Revenues)	137
Present Value of Benefits (PVB)	5700
Broad Transport Budget	4383
Present Value of Costs (PVC)	4383

#### OVERALL IMPACTS

Net Present Value (NPV)	1317
Benefit to Cost Ratio (BCR)	1.301

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-6\_Lowdham-LowV4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Low\_V4\_15OB\6-Lowdham\_V4\_Low\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Low\_V4\_15OB\6-Lowdham\_V4\_Low\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

ERRORS AND WARNINGS

1974 Warnings found in total (including any above)

Warning (98 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips	
4	1	2	Car	Business	All	2023	0.040	0.001	36.639	11.750	11.750	
4	2	2	Car	Business	All	2023	0.040	0.001	36.639	13.046	13.046	
4	3	2	Car	Business	All	2023	0.040	0.001	36.639	9.893	9.893	
4	3	2	LGV	Personal	Other	All	2023	0.040	0.001	36.639	3.366	3.366
4	1	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	29.322	29.322
4	2	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	32.556	32.556
4	1	2	Car	Commuting	All	2023	0.040	0.001	36.639	74.841	74.841	
4	2	2	Car	Commuting	All	2023	0.040	0.001	36.639	83.095	83.095	
4	3	2	Car	Commuting	All	2023	0.040	0.001	36.639	63.009	63.009	
4	3	2	LGV	Freight	Business	All	2023	0.040	0.001	36.639	24.686	24.686
4	1	2	OGV1	Business	All	2023	0.040	0.001	36.639	5.032	5.032	
4	2	2	OGV1	Business	All	2023	0.040	0.001	36.639	5.587	5.587	
4	1	2	Car	Other	All	2023	0.040	0.001	36.639	143.143	143.143	
4	2	2	Car	Other	All	2023	0.040	0.001	36.639	158.931	158.931	
4	3	2	Car	Other	All	2023	0.040	0.001	36.639	120.514	120.514	
4	3	2	OGV1	Business	All	2023	0.040	0.001	36.639	4.237	4.237	
4	1	2	OGV2	Business	All	2023	0.040	0.001	36.639	3.890	3.890	
4	2	2	OGV2	Business	All	2023	0.040	0.001	36.639	4.319	4.319	
4	1	2	LGV	Personal	Other	All	2023	0.040	0.001	36.639	3.998	3.998
4	2	2	LGV	Personal	Other	All	2023	0.040	0.001	36.639	4.439	4.439

Displayed 20 warnings of a total of 238 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	1	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.272	85.000
1	3	4	OGV2	Business	All	2023	2.000	0.000	4081.633	1.268	85.000
1	4	4	OGV2	Business	All	2023	2.000	0.000	4081.633	0.362	85.000
1	1	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.000	85.000
1	2	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.516	85.000
1	3	4	OGV1	Business	All	2023	2.000	0.000	4081.633	2.407	85.000
1	4	4	OGV1	Business	All	2023	2.000	0.000	4081.633	0.688	85.000
1	1	4	Car	Business	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Business	All	2023	2.000	0.000	4081.633	0.301	130.000

1	3	4	Car	Business	All	2023	2.000	0.000	4081.633	1.405	130.000
1	4	4	Car	Business	All	2023	2.000	0.000	4081.633	0.401	130.000
1	1	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.079	110.000
1	3	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	5.037	110.000
1	4	4	LGV Freight	Business	All	2023	2.000	0.000	4081.633	1.439	110.000
1	1	4	Car	Commuting	All	2023	2.000	0.000	4081.633	0.000	130.000
1	2	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.009	130.000
1	3	4	Car	Commuting	All	2023	2.000	0.000	4081.633	9.374	130.000
1	4	4	Car	Commuting	All	2023	2.000	0.000	4081.633	2.678	130.000

Displayed 20 warnings of a total of 840 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed
4	1	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	1.919	110.000
4	2	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.039	110.000
4	3	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	2.519	110.000
4	4	4	LGV Freight	Business	All	2023	2.000	0.000	5128.205	0.000	110.000
4	1	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.917	85.000
4	2	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.974	85.000
4	3	4	OGV1	Business	All	2023	2.000	0.000	5128.205	1.203	85.000
4	4	4	OGV1	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.483	85.000
4	2	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.513	85.000
4	3	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.634	85.000
4	4	4	OGV2	Business	All	2023	2.000	0.000	5128.205	0.000	85.000
4	1	4	Car	Business	All	2023	2.000	0.000	5128.205	0.535	130.000
4	2	4	Car	Business	All	2023	2.000	0.000	5128.205	0.569	130.000
4	3	4	Car	Business	All	2023	2.000	0.000	5128.205	0.702	130.000
4	4	4	Car	Business	All	2023	2.000	0.000	5128.205	0.000	130.000
4	1	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.571	130.000
4	2	4	Car	Commuting	All	2023	2.000	0.000	5128.205	3.794	130.000
4	3	4	Car	Commuting	All	2023	2.000	0.000	5128.205	4.687	130.000
4	4	4	Car	Commuting	All	2023	2.000	0.000	5128.205	0.000	130.000

Displayed 20 warnings of a total of 896 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011 2011 0.697 0.697 0.697

2012 2012 0.810 0.810 0.810

2013 2013 1.501 1.501 1.501

2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385

2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500



VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978

2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099

2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000

2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000

2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000

2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000

2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252

2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000



2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000

2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000

2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000

2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000

2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898

2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000

2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000

6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779



2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605

2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

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*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000

2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850

2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702

2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
				max	min	
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120 10

4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932

2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747

2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341



2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490

2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846

2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294

2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026

2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660

2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404

2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288

2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000



2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261

2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711

2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031

2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750

2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043

2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000

2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013

2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019





Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0

Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	28	0	0	18	0	0	0	0
Road	2021	48	33	5408	18	0	0	0	57
Road	2022	0	33	1092	28	0	0	0	115
Road	2023	0	0	0	14	0	0	0	344
Road	2024	0	0	0	0	5	0	0	0
Road	2025	0	0	0	0	5	0	0	0
Road	2026	0	0	0	0	5	0	0	0
Road	2027	0	0	0	0	5	0	0	0
Road	2028	0	0	0	0	9	0	0	0
Road	2029	0	0	0	0	4	0	0	0
Road	2030	0	0	0	0	4	0	0	0
Road	2031	0	0	0	0	4	0	0	0
Road	2032	0	0	0	0	4	0	0	0
Road	2033	0	0	0	0	25	0	0	0
Road	2034	0	0	0	0	4	0	0	0
Road	2035	0	0	0	0	4	0	0	0
Road	2036	0	0	0	0	4	0	0	0
Road	2037	0	0	0	0	4	0	0	0
Road	2038	0	0	0	0	7	0	0	0
Road	2039	0	0	0	0	3	0	0	0
Road	2040	0	0	0	0	3	0	0	0
Road	2041	0	0	0	0	3	0	0	0
Road	2042	0	0	0	0	3	0	0	0
Road	2043	0	0	0	0	137	0	0	0
Road	2044	0	0	0	0	3	0	0	0
Road	2045	0	0	0	0	3	0	0	0
Road	2046	0	0	0	0	3	0	0	0

Road	2047	0	0	0	0	3	0	0	0
Road	2048	0	0	0	0	12	0	0	0
Road	2049	0	0	0	0	3	0	0	0
Road	2050	0	0	0	0	3	0	0	0
Road	2051	0	0	0	0	3	0	0	0
Road	2052	0	0	0	0	3	0	0	0
Road	2053	0	0	0	0	16	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	5	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	136	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	4	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	18	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	1	0	0	0
Road	2077	0	0	0	0	1	0	0	0
Road	2078	0	0	0	0	3	0	0	0
Road	2079	0	0	0	0	1	0	0	0
Road	2080	0	0	0	0	1	0	0	0
Road	2081	0	0	0	0	1	0	0	0
Road	2082	0	0	0	0	1	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	33	33
Road	2021	0	3773	3773
Road	2022	0	763	763
Road	2023	0	9	9

Road	2024	0	3	3
Road	2025	0	3	3
Road	2026	0	3	3
Road	2027	0	3	3
Road	2028	0	5	5
Road	2029	0	2	2
Road	2030	0	2	2
Road	2031	0	2	2
Road	2032	0	2	2
Road	2033	0	11	11
Road	2034	0	2	2
Road	2035	0	2	2
Road	2036	0	2	2
Road	2037	0	1	1
Road	2038	0	3	3
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	44	44
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	1	1
Road	2047	0	1	1
Road	2048	0	3	3
Road	2049	0	1	1
Road	2050	0	1	1
Road	2051	0	1	1
Road	2052	0	1	1
Road	2053	0	4	4
Road	2054	0	1	1
Road	2055	0	1	1
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	1	1
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	23	23
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0

Road	2068	0	1	1
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	2	2
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	0	0
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	4718	4718

#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1853	1853
Car	2023	PM peak	1971	1971
Car	2023	Inter-peak	5464	5464
Car	2023	Off-peak	789	789
Car	2023	All	10077	10077
Car	2037	AM peak	1838	1838
Car	2037	PM peak	1937	1937
Car	2037	Inter-peak	5418	5418
Car	2037	Off-peak	785	785
Car	2037	All	9979	9979
LGV Personal	2023	AM peak	34	34
LGV Personal	2023	PM peak	34	34
LGV Personal	2023	Inter-peak	115	115
LGV Personal	2023	Off-peak	17	17
LGV Personal	2023	All	200	200
LGV Personal	2037	AM peak	33	33
LGV Personal	2037	PM peak	34	34
LGV Personal	2037	Inter-peak	114	114
LGV Personal	2037	Off-peak	17	17
LGV Personal	2037	All	198	198
LGV Freight	2023	AM peak	247	247
LGV Freight	2023	PM peak	252	252
LGV Freight	2023	Inter-peak	844	844
LGV Freight	2023	Off-peak	122	122

LGV Freight	2023	All	1464	1464
LGV Freight	2037	AM peak	245	245
LGV Freight	2037	PM peak	247	247
LGV Freight	2037	Inter-peak	837	837
LGV Freight	2037	Off-peak	121	121
LGV Freight	2037	All	1451	1451
OGV1	2023	AM peak	68	68
OGV1	2023	PM peak	43	43
OGV1	2023	Inter-peak	403	403
OGV1	2023	Off-peak	58	58
OGV1	2023	All	572	572
OGV1	2037	AM peak	67	67
OGV1	2037	PM peak	42	42
OGV1	2037	Inter-peak	400	400
OGV1	2037	Off-peak	58	58
OGV1	2037	All	567	567
OGV2	2023	AM peak	42	42
OGV2	2023	PM peak	33	33
OGV2	2023	Inter-peak	213	213
OGV2	2023	Off-peak	31	31
OGV2	2023	All	319	319
OGV2	2037	AM peak	42	42
OGV2	2037	PM peak	33	33
OGV2	2037	Inter-peak	211	211
OGV2	2037	Off-peak	31	31
OGV2	2037	All	316	316
All	2023	AM peak	2243	2243
All	2023	PM peak	2333	2333
All	2023	Inter-peak	7040	7040
All	2023	Off-peak	1016	1016
All	2023	All	12632	12632
All	2037	AM peak	2225	2225
All	2037	PM peak	2294	2294
All	2037	Inter-peak	6980	6980
All	2037	Off-peak	1012	1012
All	2037	All	12511	12511

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	297	0	1447	919	108	0	1456	914
Road	2037	181	0	676	562	79	0	681	559

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	731	620	95	736	626	95
Car	2037	499	269	908	505	272	908
LGV Personal	2023	1	37	1	1	38	1
LGV Personal	2037	1	26	9	1	26	9
LGV Freight	2023	6	274	4	6	277	4
LGV Freight	2037	8	189	68	8	191	68
OGV1	2023	0	189	0	0	189	0
OGV1	2037	0	162	0	0	162	0
OGV2	2023	0	173	0	0	172	0
OGV2	2037	0	128	0	0	128	0
All	2023	738	1293	99	743	1302	99
All	2037	508	774	985	513	779	985
Car	Total	26413	15128	65242	26670	15299	65242
LGV Personal	Total	69	1429	850	69	1446	850
LGV Freight	Total	503	10480	6229	508	10599	6229
OGV1	Total	0	9555	0	0	9557	0
OGV2	Total	0	7775	0	0	7763	0
All	Total	26984	44366	72321	27248	44663	72321

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	3014	3039	25	60	61	0	122	123	1	183	184	2
Car	2037	1685	1704	19	39	39	0	77	78	1	116	117	1
LGV Personal	2023	92	93	1	2	2	0	4	4	0	6	6	0
LGV Personal	2037	65	65	1	1	2	0	3	3	0	4	4	0
LGV Freight	2023	676	683	8	14	14	0	27	28	0	41	41	0
LGV Freight	2037	473	479	5	11	11	0	22	22	0	33	33	0
OGV1	2023	458	458	-0	9	9	-0	19	19	-0	28	28	-0
OGV1	2037	393	393	0	9	9	0	18	18	0	27	27	0
OGV2	2023	418	416	-2	8	8	-0	17	17	-0	25	25	-0
OGV2	2037	309	309	-0	7	7	-0	14	14	-0	21	21	-0
All	2023	4658	4689	31	93	94	1	189	190	1	282	284	2
All	2024	4557	4588	31	91	91	1	181	182	1	272	273	2
All	2025	4426	4457	31	87	88	1	172	173	1	259	261	2
All	2026	4296	4326	30	82	82	1	164	165	1	245	247	2
All	2027	4168	4198	30	79	79	1	155	157	1	234	236	2
All	2028	4045	4075	29	74	74	1	150	151	1	223	225	2
All	2029	3927	3956	29	71	72	1	142	143	1	213	215	2
All	2030	3763	3792	28	66	66	0	133	134	1	199	200	1
All	2031	3610	3637	28	67	68	1	134	135	1	201	203	2



All	2032	3468	3495	27	68	68	1	136	137	1	204	205	2
All	2033	3338	3364	26	68	69	1	135	136	1	204	205	2
All	2034	3219	3245	26	67	68	1	136	137	1	203	205	2
All	2035	3111	3137	25	67	68	1	135	136	1	204	205	2
All	2036	3014	3039	25	67	68	1	135	136	1	202	204	2
All	2037	2925	2949	25	67	68	1	134	135	1	201	202	2
All	2038	2847	2871	24	66	67	1	133	134	1	199	201	2
All	2039	2780	2803	23	66	66	1	132	133	1	199	200	2
All	2040	2713	2736	22	66	66	1	131	132	1	197	198	2
All	2041	2646	2668	22	65	65	1	129	130	1	194	196	2
All	2042	2594	2615	21	64	64	1	128	129	1	192	193	2
All	2043	2546	2567	21	63	64	1	127	128	1	191	192	2
All	2044	2502	2523	20	63	63	1	126	127	1	188	190	2
All	2045	2464	2484	20	62	63	0	124	125	1	186	188	1
All	2046	2426	2445	19	61	62	0	123	124	1	184	185	1
All	2047	2393	2412	19	61	61	0	121	122	1	182	184	1
All	2048	2362	2381	19	60	60	0	120	121	1	180	181	1
All	2049	2334	2352	18	59	60	0	118	119	1	178	179	1
All	2050	2307	2325	18	58	59	0	117	118	1	175	177	1
All	2051	2307	2325	18	58	58	0	117	118	1	177	178	1
All	2052	2307	2325	18	58	58	0	118	119	1	178	179	1
All	2053	2307	2325	18	57	58	0	118	119	1	179	180	1
All	2054	2307	2325	18	57	57	0	118	119	1	180	181	1
All	2055	2307	2325	18	56	57	0	118	119	1	180	182	1
All	2056	2307	2325	18	56	56	0	118	119	1	181	182	1
All	2057	2307	2325	18	55	55	0	118	119	1	181	182	1
All	2058	2307	2325	18	54	54	0	117	118	1	180	182	1
All	2059	2307	2325	18	53	54	0	116	117	1	180	181	1
All	2060	2307	2325	18	52	52	0	116	117	1	179	181	1
All	2061	2307	2325	18	51	51	0	114	115	1	178	179	1
All	2062	2307	2325	18	50	50	0	113	114	1	176	178	1
All	2063	2307	2325	18	49	49	0	111	112	1	174	176	1
All	2064	2307	2325	18	47	48	0	110	111	1	172	174	1
All	2065	2307	2325	18	46	46	0	108	109	1	170	171	1
All	2066	2307	2325	18	44	45	0	106	107	1	168	169	1
All	2067	2307	2325	18	43	44	0	104	105	1	165	166	1
All	2068	2307	2325	18	42	42	0	102	103	1	162	163	1
All	2069	2307	2325	18	40	41	0	100	100	1	159	160	1
All	2070	2307	2325	18	39	39	0	98	98	1	156	157	1
All	2071	2307	2325	18	38	38	0	95	96	1	153	154	1
All	2072	2307	2325	18	36	36	0	93	94	1	150	151	1
All	2073	2307	2325	18	35	35	0	91	91	1	146	147	1
All	2074	2307	2325	18	34	34	0	88	89	1	143	144	1
All	2075	2307	2325	18	32	32	0	86	87	1	140	141	1

All	2076	2307	2325	18	31	31	0	83	84	1	136	137	1
All	2077	2307	2325	18	30	30	0	81	82	1	132	133	1
All	2078	2307	2325	18	28	29	0	79	79	1	129	130	1
All	2079	2307	2325	18	27	27	0	76	77	1	125	126	1
All	2080	2307	2325	18	26	26	0	74	74	1	121	122	1
All	2081	2307	2325	18	25	25	0	71	72	1	118	119	1
All	2082	2307	2325	18	24	24	0	69	70	1	115	116	1
Car	Total	91308	92257	949	1845	1864	19	3944	3985	41	6044	6107	63
LGV Personal	Total	3601	3642	41	73	74	1	157	159	2	241	243	3
LGV Freight	Total	26404	26704	300	534	540	6	1149	1162	13	1765	1785	20
OGV1	Total	23124	23130	6	468	468	0	1013	1014	0	1559	1560	0
OGV2	Total	18817	18788	-29	380	379	-1	822	821	-1	1265	1263	-2
All	Total	163255	164522	1267	3300	3325	26	7086	7141	55	10874	10959	85

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	24	24	0	0	0	0	0	0	1	1	0	
Car	2037	52	52	0	1	1	0	2	2	0	4	4	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	4	4	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	25	25	0	0	0	0	0	0	1	1	0	
All	2024	32	32	0	0	0	1	1	0	1	1	0	
All	2025	43	43	0	0	0	1	1	0	2	2	0	
All	2026	54	54	0	1	1	0	1	1	0	2	2	0
All	2027	62	62	0	1	1	0	2	2	0	3	3	0
All	2028	68	68	0	1	1	0	2	2	0	3	3	0
All	2029	71	71	0	1	1	0	2	2	0	4	4	0
All	2030	70	70	0	1	1	0	2	2	0	4	4	0
All	2031	71	71	0	1	1	0	3	3	0	4	4	0
All	2032	70	70	0	1	1	0	3	3	0	4	4	0
All	2033	69	69	0	1	1	0	3	3	0	4	4	0
All	2034	66	66	0	1	1	0	3	3	0	4	4	0
All	2035	63	63	0	1	1	0	3	3	0	4	4	0
All	2036	60	60	0	1	1	0	3	3	0	4	4	0
All	2037	57	57	0	1	1	0	3	3	0	4	4	0
All	2038	53	53	0	1	1	0	2	2	0	4	4	0
All	2039	50	50	0	1	1	0	2	2	0	4	4	0

All	2040	46	46	0	1	1	0	2	2	0	3	3	0
All	2041	47	47	0	1	1	0	2	2	0	3	3	0
All	2042	47	47	0	1	1	0	2	2	0	3	3	0
All	2043	47	47	0	1	1	0	2	2	0	3	3	0
All	2044	46	46	0	1	1	0	2	2	0	3	3	0
All	2045	46	46	0	1	1	0	2	2	0	3	3	0
All	2046	45	45	0	1	1	0	2	2	0	3	3	0
All	2047	44	44	0	1	1	0	2	2	0	3	3	0
All	2048	43	43	0	1	1	0	2	2	0	3	3	0
All	2049	42	42	0	1	1	0	2	2	0	3	3	0
All	2050	41	41	0	1	1	0	2	2	0	3	3	0
All	2051	41	41	0	1	1	0	2	2	0	3	3	0
All	2052	41	41	0	1	1	0	2	2	0	3	3	0
All	2053	41	41	0	1	1	0	2	2	0	3	3	0
All	2054	41	41	0	1	1	0	2	2	0	3	3	0
All	2055	41	41	0	1	1	0	2	2	0	3	3	0
All	2056	41	41	0	1	1	0	2	2	0	3	3	0
All	2057	41	41	0	1	1	0	2	2	0	3	3	0
All	2058	41	41	0	1	1	0	2	2	0	3	3	0
All	2059	41	41	0	1	1	0	2	2	0	3	3	0
All	2060	41	41	0	1	1	0	2	2	0	3	3	0
All	2061	41	41	0	1	1	0	2	2	0	3	3	0
All	2062	41	41	0	1	1	0	2	2	0	3	3	0
All	2063	41	41	0	1	1	0	2	2	0	3	3	0
All	2064	41	41	0	1	1	0	2	2	0	3	3	0
All	2065	41	41	0	1	1	0	2	2	0	3	3	0
All	2066	41	41	0	1	1	0	2	2	0	3	3	0
All	2067	41	41	0	1	1	0	2	2	0	3	3	0
All	2068	41	41	0	1	1	0	2	2	0	3	3	0
All	2069	41	41	0	1	1	0	2	2	0	3	3	0
All	2070	41	41	0	1	1	0	2	2	0	3	3	0
All	2071	41	41	0	1	1	0	2	2	0	3	3	0
All	2072	41	41	0	1	1	0	2	2	0	3	3	0
All	2073	41	41	0	1	1	0	2	2	0	3	3	0
All	2074	41	41	0	1	1	0	2	2	0	3	3	0
All	2075	41	41	0	1	1	0	2	2	0	2	2	0
All	2076	41	41	0	1	1	0	1	1	0	2	2	0
All	2077	41	41	0	1	1	0	1	1	0	2	2	0
All	2078	41	41	0	1	1	0	1	1	0	2	2	0
All	2079	41	41	0	1	1	0	1	1	0	2	2	0
All	2080	41	41	0	0	0	0	1	1	0	2	2	0
All	2081	41	41	0	0	0	0	1	1	0	2	2	0
All	2082	41	41	0	0	0	0	1	1	0	2	2	0
Car	Total	2546	2546	0	52	52	0	108	108	0	166	166	0

LGV Personal	Total	29	29	0	1	1	0	1	1	0	2	2	0
LGV Freight	Total	215	215	0	4	4	0	9	9	0	15	15	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	2791	2791	0	57	57	0	118	118	0	182	182	0

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	799	799	0	16	16	0	32	32	0	48	48	0
AM peak	2037	493	493	0	11	11	0	23	23	0	34	34	0
PM peak	2023	775	806	31	15	16	1	31	33	1	47	49	2
PM peak	2037	460	485	25	11	11	1	21	22	1	32	33	2
Inter-peak	2023	2696	2696	0	54	54	0	109	109	0	163	163	0
Inter-peak	2037	1722	1722	0	40	40	0	79	79	0	118	118	0
Off-peak	2023	389	389	0	8	8	0	16	16	0	24	24	0
Off-peak	2037	250	250	0	6	6	0	11	11	0	17	17	0
AM peak	Total	27325	27325	0	552	552	0	1185	1185	0	1818	1818	0
PM peak	Total	25537	26804	1267	516	542	26	1106	1161	55	1697	1782	85
Inter-peak	Total	96426	96426	0	1949	1949	0	4188	4188	0	6428	6428	0
Off-peak	Total	13968	13968	0	282	282	0	607	607	0	931	931	0

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
PM peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
PM peak	2037	11	11	0	0	0	0	0	0	1	1	0	0
Inter-peak	2023	14	14	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	31	31	0	1	1	0	1	1	0	2	2	0
Off-peak	2023	2	2	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	5	5	0	0	0	0	0	0	0	0	0	0
AM peak	Total	510	510	0	10	10	0	22	22	0	33	33	0
PM peak	Total	537	537	0	11	11	0	23	23	0	35	35	0
Inter-peak	Total	1523	1523	0	31	31	0	65	65	0	100	100	0
Off-peak	Total	221	221	0	4	4	0	9	9	0	14	14	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost			Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes	
Road	2023	189	0	-10	5	0	5	
Road	2024	182	0	-9	5	0	5	
Road	2025	175	0	-9	5	0	5	
Road	2026	168	0	-9	4	0	5	
Road	2027	161	0	-8	4	0	5	
Road	2028	154	0	-8	4	0	5	
Road	2029	148	0	-8	4	0	4	
Road	2030	142	0	-7	4	0	4	
Road	2031	136	0	-7	3	0	4	
Road	2032	130	0	-7	3	0	4	
Road	2033	124	0	-6	3	0	4	
Road	2034	118	0	-6	3	0	3	
Road	2035	113	0	-6	3	0	3	
Road	2036	108	0	-5	3	0	3	
Road	2037	103	0	-5	2	0	3	
Road	2038	101	0	-5	2	0	3	
Road	2039	99	0	-5	2	0	3	
Road	2040	97	0	-4	2	0	2	
Road	2041	95	0	-4	2	0	2	
Road	2042	93	0	-4	2	0	2	
Road	2043	91	0	-4	2	0	2	
Road	2044	89	0	-3	2	0	2	
Road	2045	87	0	-3	2	0	2	
Road	2046	85	0	-3	2	0	2	
Road	2047	83	0	-3	2	0	2	
Road	2048	82	0	-3	2	0	2	
Road	2049	80	0	-3	2	0	2	
Road	2050	78	0	-3	2	0	1	
Road	2051	77	0	-2	1	0	1	
Road	2052	76	0	-2	1	0	1	
Road	2053	74	0	-2	1	0	1	
Road	2054	73	0	-2	1	0	1	
Road	2055	72	0	-2	1	0	1	
Road	2056	71	0	-2	1	0	1	
Road	2057	70	0	-2	1	0	1	
Road	2058	69	0	-2	1	0	1	
Road	2059	68	0	-2	1	0	1	
Road	2060	67	0	-2	1	0	1	
Road	2061	66	0	-2	1	0	1	

Road	2062	65	0	-2	1	0	1
Road	2063	64	0	-2	1	0	1
Road	2064	63	0	-2	1	0	1
Road	2065	62	0	-2	1	0	1
Road	2066	61	0	-2	1	0	1
Road	2067	60	0	-2	1	0	1
Road	2068	59	0	-2	1	0	1
Road	2069	58	0	-2	1	0	1
Road	2070	57	0	-2	1	0	1
Road	2071	57	0	-1	1	0	1
Road	2072	56	0	-1	1	0	1
Road	2073	55	0	-1	1	0	1
Road	2074	54	0	-1	1	0	1
Road	2075	53	0	-1	1	0	1
Road	2076	53	0	-1	1	0	1
Road	2077	52	0	-1	1	0	1
Road	2078	51	0	-1	1	0	1
Road	2079	50	0	-1	1	0	1
Road	2080	50	0	-1	1	0	1
Road	2081	49	0	-1	1	0	1
Road	2082	48	0	-1	1	0	1
Road	Total	5263	0	-212	111	0	121

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	145	0	-8	1	0	4
Car	2037	79	0	-4	1	0	2
LGV Personal	2023	2	0	-0	0	0	0
LGV Personal	2037	1	0	-0	0	0	0
LGV Freight	2023	31	0	-2	1	0	1
LGV Freight	2037	17	0	-1	0	0	1
OGV1	2023	6	0	0	1	0	-0
OGV1	2037	4	0	-0	1	0	0
OGV2	2023	4	0	1	2	0	-0
OGV2	2037	2	0	0	1	0	-0
All	2023	189	0	-10	5	0	5
All	2037	103	0	-5	2	0	3
Car	Total	4033	0	-163	26	0	94
LGV Personal	Total	52	0	-6	0	0	4
LGV Freight	Total	866	0	-47	22	0	27
OGV1	Total	185	0	-1	27	0	0
OGV2	Total	127	0	6	36	0	-3

All	Total	5263	0	-212	111	0	121
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PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
All	2023	189	0	-10	5	0	5
All	2037	103	0	-5	2	0	3
All	Total	5263	0	-212	111	0	121

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Business	2023	50	0	-2	5	0	1
Business	2037	28	0	-1	2	0	1
Commuting	2023	56	0	-3	0	0	1
Commuting	2037	30	0	-1	0	0	1
Other	2023	83	0	-5	0	0	3
Other	2037	45	0	-3	0	0	2
Business	Total	1406	0	-50	111	0	28
Commuting	Total	1540	0	-53	0	0	31
Other	Total	2317	0	-108	0	0	62

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
AM peak	2023	17	0	0	1	0	0
AM peak	2037	12	0	0	0	0	0
PM peak	2023	154	0	-10	4	0	5
PM peak	2037	78	0	-5	2	0	3
Inter-peak	2023	17	0	0	1	0	0
Inter-peak	2037	12	0	0	0	0	0
Off-peak	2023	1	0	0	0	0	0
Off-peak	2037	0	0	0	0	0	0
AM peak	Total	590	0	0	14	0	0
PM peak	Total	4053	0	-212	75	0	121
Inter-peak	Total	600	0	0	21	0	0
Off-peak	Total	19	0	0	1	0	0

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
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Car	Business	2023	0	0	-0	0	1	0
Car	Business	2037	0	0	-0	1	0	0
Car	Business	Total	0	0	-0	56	8	0
Car	Commuting	2023	0	0	-0	1	6	0
Car	Commuting	2037	0	0	-0	6	0	0
Car	Commuting	Total	0	0	-0	306	48	0
Car	Other	2023	0	0	-0	6	19	0
Car	Other	2037	0	0	-0	18	0	0
Car	Other	Total	0	0	-0	999	146	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-0	23	3	0
LGV Freight	Business	2023	0	0	-0	1	3	0
LGV Freight	Business	2037	0	0	-0	3	0	0
LGV Freight	Business	Total	0	0	-0	139	20	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	27	3	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-0	18	2	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0



OGV2	Other	Total	0	0	0	0	0	0
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MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	2	6	0
Car	Business	2037	0	0	-0	4	0	0
Car	Business	Total	0	0	-0	187	41	0
Car	Commuting	2023	0	0	-0	11	46	0
Car	Commuting	2037	0	0	-0	30	0	0
Car	Commuting	Total	0	0	-0	1226	315	0
Car	Other	2023	0	0	-0	19	62	0
Car	Other	2037	0	0	-0	44	0	0
Car	Other	Total	0	0	-1	1834	431	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	1	0	0
LGV Personal	Other	Total	0	0	-0	42	10	0
LGV Freight	Business	2023	0	0	-0	7	24	0
LGV Freight	Business	2037	0	0	-0	17	0	0
LGV Freight	Business	Total	0	0	-0	703	163	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	2	4	0
OGV1	Business	2037	0	0	-0	4	0	0
OGV1	Business	Total	0	0	-0	158	27	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	1	3	0
OGV2	Business	2037	0	0	-0	2	0	0
OGV2	Business	Total	0	0	-0	106	21	0

OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	3	6	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-0	201	45	0
Car	Commuting	2023	0	0	-0	11	43	0
Car	Commuting	2037	0	0	-0	29	0	0
Car	Commuting	Total	0	0	-0	1187	300	0
Car	Other	2023	0	0	-0	19	58	0
Car	Other	2037	0	0	-0	42	0	0
Car	Other	Total	0	0	-1	1761	403	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	1	0
LGV Personal	Other	2037	0	0	-0	1	0	0
LGV Personal	Other	Total	0	0	-0	38	8	0
LGV Freight	Business	2023	0	0	-0	8	22	0
LGV Freight	Business	2037	0	0	-0	16	0	0
LGV Freight	Business	Total	0	0	-0	686	154	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	3	5	0
OGV1	Business	2037	0	0	-0	4	0	0
OGV1	Business	Total	0	0	-0	180	32	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0





LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	6	0	0	0	0	0	0
OGV1	Business	2037	0	4	0	0	0	0	0	0
OGV1	Business	Total	0	185	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	4	0	0	0	0	0	0
OGV2	Business	2037	0	2	0	0	0	0	0	0
OGV2	Business	Total	0	127	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### TOTAL BENEFITS BY DISTANCE

Total benefits (E000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	9	0	0	0	0	0	0
Car	Business	2037	0	5	0	0	0	0	0	0
Car	Business	Total	0	246	0	0	0	0	0	0
Car	Commuting	2023	0	54	0	0	0	0	0	0
Car	Commuting	2037	0	29	0	0	0	0	0	0
Car	Commuting	Total	0	1487	0	0	0	0	0	0
Car	Other	2023	0	76	0	0	0	0	0	0
Car	Other	2037	0	42	0	0	0	0	0	0
Car	Other	Total	0	2163	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	2	0	0	0	0	0	0
LGV Personal	Other	2037	0	1	0	0	0	0	0	0
LGV Personal	Other	Total	0	46	0	0	0	0	0	0
LGV Freight	Business	2023	0	30	0	0	0	0	0	0

LGV Freight	Business	2037	0	16	0	0	0	0	0	0
LGV Freight	Business	Total	0	840	0	0	0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	8	0	0	0	0	0	0
OGV1	Business	2037	0	4	0	0	0	0	0	0
OGV1	Business	Total	0	212	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	7	0	0	0	0	0	0
OGV2	Business	2037	0	3	0	0	0	0	0	0
OGV2	Business	Total	0	168	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	6.93%	7.03%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	1540	1540
Vehicle operating costs	-53	-53
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>1487</b>	<b>1487</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	2317	2317

Vehicle operating costs	-108	-108
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	2209	2209

Business	All Modes	Road Personal	Road Freight
Travel Time	1406	228	1178
Vehicle operating costs	61	18	42
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	1466	246	1220

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

#### Other business Impacts

Developer contributions	-335	-335
NET BUSINESS IMPACT	1131	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE)	4827
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	141	141
Investment Costs	937	937
Developer Contributions	-335	-335
Grant/Subsidy Payments	0	0
NET IMPACT	743	743

#### Central Government Funding: Transport

	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	3640	3640
Developer Contributions	0	0

Grant/Subsidy Payments	0	0
NET IMPACT	3640	3640

Central Government Funding: Non-Transport

Indirect Tax Revenues	-121	-121
-----------------------	------	------

TOTALS

Broad Transport Budget	4383	4383
Wider Public Finances	-121	-121

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-55
Economic Efficiency: Consumer Users (Commuting)	1487
Economic Efficiency: Consumer Users (Other)	2209
Economic Efficiency: Business Users and Providers	1131
Wider Public Finances (Indirect Taxation Revenues)	121
Present Value of Benefits (PVB)	4893
Broad Transport Budget	4383
Present Value of Costs (PVC)	4383

OVERALL IMPACTS

Net Present Value (NPV)	510
Benefit to Cost Ratio (BCR)	1.116

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-6\_Lowdham-LowV4\_150B



\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\MasterFile - 6\_Lowdham\_V4\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Low\_V4\_Sens\_15OB\6-Lowdham\_V4\_Low\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\6-Lowdham\TUBA\_Low\_V4\_Sens\_15OB\6-Lowdham\_V4\_Low\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

# Appendix BB – Kirk Hill TUBA Files

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-7\_Kirk Hill\_V4\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	803.31	F	119.37	1
C	1	CEN	4085.24	F	119.37	1
L	1	CEN	60.12	F	119.37	1
S	1	CEN	118.9	F	119.37	1
P	1	LOC	149.5	F	119.37	1

C	1	LOC	865.096	F	119.37	1
L	1	LOC	12.7325	F	119.37	1
S	1	LOC	157.468	F	119.37	1
D	1	LOC	399.3835	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	23.50	36.90	0.00	0.00	0.00	0.00	0.00
2021	1	83.20	23.50	63.10	50.00	0.00	0.00	0.00	0.00
2022	1	16.80	35.40	0.00	50.00	0.00	0.00	0.00	0.00
2023	1	0.00	17.60	0.00	0.00	0.00	0.00	0.00	100.00
2024	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2035	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2037	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.532	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	3.668	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2062	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	40.266	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	9.773	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
2	2	1	V	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
3	3	1	V	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
5	5	1	V	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
6	6	1	V	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt
7	7	1	V	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DM.txt



8	1	3	V	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
9	2	3	V	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
10	3	3	V	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
11	4	3	V	1	0	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
12	5	3	V	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
13	6	3	V	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
14	7	3	V	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DM.txt
15	1	2	V	1	0	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
16	2	2	V	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
17	3	2	V	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
18	4	2	V	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
19	5	2	V	1	0	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
20	6	2	V	1	0	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
21	7	2	V	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DM.txt
22	1	4	V	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
23	2	4	V	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
24	3	4	V	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
25	4	4	V	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
26	5	4	V	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
27	6	4	V	1	0	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
28	7	4	V	1	0	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DM.txt
29	1	1	V	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
30	2	1	V	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
31	3	1	V	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt

33	5	1	V	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
34	6	1	V	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
35	7	1	V	1	1	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2023_DS.txt
36	1	3	V	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
37	2	3	V	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
38	3	3	V	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
39	4	3	V	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
40	5	3	V	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
41	6	3	V	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
42	7	3	V	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2023_DS.txt
43	1	2	V	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
44	2	2	V	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
45	3	2	V	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
46	4	2	V	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
47	5	2	V	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
48	6	2	V	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
49	7	2	V	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2023_DS.txt
50	1	4	V	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
51	2	4	V	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
52	3	4	V	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
53	4	4	V	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
54	5	4	V	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
55	6	4	V	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
56	7	4	V	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2023_DS.txt
57	1	1	T	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt

58	2	1	T	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
59	3	1	T	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
60	4	1	T	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
61	5	1	T	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
62	6	1	T	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
63	7	1	T	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DM.txt
64	1	3	T	1	0	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
65	2	3	T	1	0	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
66	3	3	T	1	0	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
67	4	3	T	1	0	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
68	5	3	T	1	0	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
69	6	3	T	1	0	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
70	7	3	T	1	0	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DM.txt
71	1	2	T	1	0	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DM.txt
72	2	2	T	1	0	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DM.txt
73	3	2	T	1	0	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DM.txt
74	4	2	T	1	0	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DM.txt
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77	7	2	T	1	0	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DM.txt
78	1	4	T	1	0	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
79	2	4	T	1	0	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
80	3	4	T	1	0	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
81	4	4	T	1	0	2023	0.00656	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
82	5	4	T	1	0	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt

83	6	4	T	1	0	2023	0.02515	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
84	7	4	T	1	0	2023	0.05905	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DM.txt
85	1	1	T	1	1	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
86	2	1	T	1	1	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
87	3	1	T	1	1	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
88	4	1	T	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
89	5	1	T	1	1	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
90	6	1	T	1	1	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2023_DS.txt
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93	2	3	T	1	1	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
94	3	3	T	1	1	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
95	4	3	T	1	1	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
96	5	3	T	1	1	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
97	6	3	T	1	1	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
98	7	3	T	1	1	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2023_DS.txt
99	1	2	T	1	1	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DS.txt
100	2	2	T	1	1	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DS.txt
101	3	2	T	1	1	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DS.txt
102	4	2	T	1	1	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2023_DS.txt
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106	1	4	T	1	1	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DS.txt
107	2	4	T	1	1	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DS.txt

108	3	4	T	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DS.txt
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112	7	4	T	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2023_DS.txt
113	1	1	D	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2023_DM.txt
114	2	1	D	1	0	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2023_DM.txt
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118	6	1	D	1	0	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2023_DM.txt
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121	2	3	D	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DM.txt
122	3	3	D	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DM.txt
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124	5	3	D	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DM.txt
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128	2	2	D	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DM.txt
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130	4	2	D	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DM.txt
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133	7	2	D	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DM.txt
134	1	4	D	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DM.txt
135	2	4	D	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DM.txt
136	3	4	D	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DM.txt
137	4	4	D	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DM.txt
138	5	4	D	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DM.txt
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148	1	3	D	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
149	2	3	D	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
150	3	3	D	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
151	4	3	D	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
152	5	3	D	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
153	6	3	D	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
154	7	3	D	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2023_DS.txt
155	1	2	D	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
156	2	2	D	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
157	3	2	D	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt

158	4	2	D	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
159	5	2	D	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
160	6	2	D	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
161	7	2	D	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2023_DS.txt
162	1	4	D	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
163	2	4	D	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
164	3	4	D	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
165	4	4	D	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
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167	6	4	D	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
168	7	4	D	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2023_DS.txt
169	1	1	V	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
170	2	1	V	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
171	3	1	V	1	0	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
173	5	1	V	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
174	6	1	V	1	0	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
175	7	1	V	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DM.txt
176	1	3	V	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
177	2	3	V	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
178	3	3	V	1	0	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
179	4	3	V	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
180	5	3	V	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
181	6	3	V	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt
182	7	3	V	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DM.txt

183	1	2	V	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
184	2	2	V	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
185	3	2	V	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
186	4	2	V	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
187	5	2	V	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
188	6	2	V	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
189	7	2	V	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_PM_2037_DM.txt
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191	2	4	V	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2037_DM.txt
192	3	4	V	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2037_DM.txt
193	4	4	V	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2037_DM.txt
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196	7	4	V	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_OP_2037_DM.txt
197	1	1	V	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
198	2	1	V	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
199	3	1	V	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
200	4	1	V	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
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202	6	1	V	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
203	7	1	V	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_AM_2037_DS.txt
204	1	3	V	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DS.txt
205	2	3	V	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DS.txt
206	3	3	V	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DS.txt
207	4	3	V	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\V_A614_Kirk_Hill_H_IP_2037_DS.txt



208	5	3	V	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_IP_2037_DS.txt
209	6	3	V	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_IP_2037_DS.txt
210	7	3	V	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_IP_2037_DS.txt
211	1	2	V	1	1	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_PM_2037_DS.txt
212	2	2	V	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_PM_2037_DS.txt
213	3	2	V	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_PM_2037_DS.txt
214	4	2	V	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_PM_2037_DS.txt
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217	7	2	V	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_PM_2037_DS.txt
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219	2	4	V	1	1	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_OP_2037_DS.txt
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221	4	4	V	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_OP_2037_DS.txt
222	5	4	V	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_OP_2037_DS.txt
223	6	4	V	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\W_A614_Kirk_Hill_H_OP_2037_DS.txt
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226	2	1	T	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt
227	3	1	T	1	0	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt
228	4	1	T	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt
229	5	1	T	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt
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232	1	3	T	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DM.txt

233	2	3	T	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DM.txt
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236	5	3	T	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DM.txt
237	6	3	T	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DM.txt
238	7	3	T	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DM.txt
239	1	2	T	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DM.txt
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242	4	2	T	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DM.txt
243	5	2	T	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DM.txt
244	6	2	T	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DM.txt
245	7	2	T	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DM.txt
246	1	4	T	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
247	2	4	T	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
248	3	4	T	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
249	4	4	T	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
250	5	4	T	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
251	6	4	T	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
252	7	4	T	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DM.txt
253	1	1	T	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
254	2	1	T	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
255	3	1	T	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
256	4	1	T	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
257	5	1	T	1	1	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt

258	6	1	T	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
259	7	1	T	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DS.txt
260	1	3	T	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
261	2	3	T	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
262	3	3	T	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
263	4	3	T	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
264	5	3	T	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
265	6	3	T	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
266	7	3	T	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_IP_2037_DS.txt
267	1	2	T	1	1	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
268	2	2	T	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
269	3	2	T	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
270	4	2	T	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
271	5	2	T	1	1	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
272	6	2	T	1	1	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
273	7	2	T	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_PM_2037_DS.txt
274	1	4	T	1	1	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
275	2	4	T	1	1	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
276	3	4	T	1	1	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
277	4	4	T	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
278	5	4	T	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
279	6	4	T	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
280	7	4	T	1	1	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_OP_2037_DS.txt
281	1	1	D	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt
282	2	1	D	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\T_A614_Kirk_Hill_H_AM_2037_DM.txt

283	3	1	D	1	0	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DM.txt
284	4	1	D	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DM.txt
285	5	1	D	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DM.txt
286	6	1	D	1	0	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DM.txt
287	7	1	D	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DM.txt
288	1	3	D	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
289	2	3	D	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
290	3	3	D	1	0	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
291	4	3	D	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
292	5	3	D	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
293	6	3	D	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
294	7	3	D	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DM.txt
295	1	2	D	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
296	2	2	D	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
297	3	2	D	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
298	4	2	D	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
299	5	2	D	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
300	6	2	D	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
301	7	2	D	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DM.txt
302	1	4	D	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
303	2	4	D	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
304	3	4	D	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
305	4	4	D	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
306	5	4	D	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
307	6	4	D	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt

308	7	4	D	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DM.txt
309	1	1	D	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
310	2	1	D	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
311	3	1	D	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
312	4	1	D	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
313	5	1	D	1	1	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
314	6	1	D	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
315	7	1	D	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_AM_2037_DS.txt
316	1	3	D	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
317	2	3	D	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
318	3	3	D	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
319	4	3	D	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
320	5	3	D	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
321	6	3	D	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
322	7	3	D	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_IP_2037_DS.txt
323	1	2	D	1	1	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
324	2	2	D	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
325	3	2	D	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
326	4	2	D	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
327	5	2	D	1	1	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
328	6	2	D	1	1	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
329	7	2	D	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_PM_2037_DS.txt
330	1	4	D	1	1	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
331	2	4	D	1	1	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
332	3	4	D	1	1	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt

333	4	4	D	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
334	5	4	D	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
335	6	4	D	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
336	7	4	D	1	1	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs V4\D_A614_Kirk_Hill_H_OP_2037_DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:16:33

ERRORS AND WARNINGS

1098 Warnings found in total (including any above)

Warning (14 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	OGV2	Business	All	2023	0.000	0.001	0.307	3.248	3.248
1	3	4	Car	Other	All	2023	0.002	0.005	0.307	31.702	31.702
1	3	4	OGV1	Business	All	2023	0.000	0.000	0.307	1.383	1.383
1	3	4	Car	Business	All	2023	0.000	0.000	0.307	2.040	2.040
1	3	4	LGV Freight	Business	All	2023	0.000	0.000	0.307	2.646	2.646
1	3	4	Car	Commuting	All	2023	0.001	0.002	0.307	13.619	13.619
1	3	4	LGV Personal	Other	All	2023	0.000	0.000	0.307	0.361	0.361
1	3	4	Car	Commuting	All	2037	0.001	0.002	0.316	15.352	15.352
1	3	4	LGV Freight	Business	All	2037	0.000	0.000	0.316	2.983	2.983
1	3	4	Car	Business	All	2037	0.000	0.000	0.316	2.300	2.300
1	3	4	OGV2	Business	All	2037	0.000	0.001	0.316	3.661	3.661
1	3	4	OGV1	Business	All	2037	0.000	0.000	0.316	1.559	1.559
1	3	4	Car	Other	All	2037	0.002	0.005	0.316	35.737	35.737
1	3	4	LGV Personal	Other	All	2037	0.000	0.000	0.316	0.407	0.407
3	1	4	OGV1	Business	All	2037	0.000	0.000	0.365	1.660	1.660

3	1	4	Car	Business	All	2037	0.000	0.000	0.365	2.449	2.449
3	1	4	LGV Personal	Other	All	2037	0.000	0.000	0.365	0.433	0.433
3	1	4	Car	Commuting	All	2037	0.001	0.002	0.365	16.343	16.343
3	1	4	Car	Other	All	2037	0.002	0.004	0.365	38.042	38.042
3	1	4	LGV Freight	Business	All	2037	0.000	0.000	0.365	3.175	3.175

Displayed 20 warnings of a total of 56 of this type.

Warning (196 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	4	2	OGV2	Business	All	2023	0.004	0.000	17.191	0.155	0.155
3	4	2	OGV1	Business	All	2023	0.001	0.000	17.191	0.046	0.046
3	4	2	LGV Freight	Business	All	2023	0.016	0.001	17.191	0.649	0.649
3	4	2	Car	Other	All	2023	0.092	0.005	17.191	3.777	3.777
3	4	2	Car	Commuting	All	2023	0.048	0.003	17.191	1.975	1.975
3	4	2	Car	Business	All	2023	0.008	0.000	17.191	0.310	0.310
3	4	2	LGV Personal	Other	All	2023	0.002	0.000	17.191	0.089	0.089
3	4	2	Car	Other	All	2037	0.103	0.006	16.925	2.158	2.158
3	4	2	Car	Business	All	2037	0.008	0.001	16.925	0.177	0.177
3	4	2	Car	Commuting	All	2037	0.054	0.003	16.925	1.128	1.128
3	4	2	OGV1	Business	All	2037	0.001	0.000	16.925	0.026	0.026
3	4	2	LGV Personal	Other	All	2037	0.002	0.000	16.925	0.051	0.051
3	4	2	OGV2	Business	All	2037	0.004	0.000	16.925	0.089	0.089
3	4	2	LGV Freight	Business	All	2037	0.018	0.001	16.925	0.371	0.371
1	2	1	Car	Commuting	All	2037	0.037	0.002	15.409	26.018	26.018
1	2	1	LGV Personal	Other	All	2037	0.002	0.000	15.409	1.228	1.228



1	2	1	OGV1	Business	All	2037	0.001	0.000	15.409	0.676	0.676
1	2	1	OGV2	Business	All	2037	0.002	0.000	15.409	1.161	1.161
1	2	1	LGV Freight	Business	All	2037	0.013	0.001	15.409	9.006	9.006
1	2	1	Car	Other	All	2037	0.053	0.003	15.409	37.189	37.189

Displayed 20 warnings of a total of 238 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	3	2	Car	Other	All	2037	1.079	0.112	9.672	14.567	10.000
2	4	2	Car	Other	All	2037	1.079	0.112	9.672	22.659	10.000
2	1	2	Car	Commuting	All	2037	0.564	0.058	9.672	42.594	10.000
2	1	2	LGV Personal	Other	All	2037	0.025	0.003	9.672	1.910	10.000
2	1	2	OGV2	Business	All	2037	0.044	0.005	9.672	3.354	12.000
2	3	2	Car	Commuting	All	2037	0.564	0.058	9.672	7.616	10.000
2	4	2	Car	Commuting	All	2037	0.564	0.058	9.672	11.847	10.000
2	1	2	Car	Other	All	2037	1.079	0.112	9.672	81.466	10.000
2	3	2	OGV2	Business	All	2037	0.044	0.005	9.672	0.600	12.000
2	4	2	OGV2	Business	All	2037	0.044	0.005	9.672	0.933	12.000
2	1	2	Car	Business	All	2037	0.089	0.009	9.672	6.686	10.000
2	3	2	Car	Business	All	2037	0.089	0.009	9.672	1.196	10.000
2	4	2	Car	Business	All	2037	0.089	0.009	9.672	1.860	10.000
2	1	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	14.005	10.000
2	3	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	2.504	10.000
2	4	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	3.895	10.000
2	1	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.985	12.000

2	3	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.176	12.000
2	4	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.274	12.000
2	3	2	LGV Personal	Other	All	2037	0.025	0.003	9.672	0.342	10.000

Displayed 20 warnings of a total of 35 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	2	4	Car	Other	All	2023	1.153	0.002	757.576	2.306	130.000
3	1	4	Car	Other	All	2023	1.153	0.002	757.576	34.008	130.000
3	4	4	Car	Other	All	2023	1.153	0.002	757.576	0.000	130.000
1	3	4	OGV2	Business	All	2023	0.118	0.000	757.576	3.248	85.000
1	3	4	Car	Other	All	2023	1.153	0.002	757.576	31.702	130.000
1	2	4	OGV2	Business	All	2023	0.118	0.000	757.576	0.236	85.000
3	4	4	OGV2	Business	All	2023	0.118	0.000	757.576	0.000	85.000
3	1	4	OGV2	Business	All	2023	0.118	0.000	757.576	3.484	85.000
1	2	4	Car	Commuting	All	2023	0.495	0.001	757.576	0.990	130.000
3	1	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	2.838	110.000
3	4	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	0.000	110.000
3	1	4	Car	Commuting	All	2023	0.495	0.001	757.576	14.610	130.000
1	2	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	0.192	110.000
1	3	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	2.646	110.000
1	3	4	Car	Commuting	All	2023	0.495	0.001	757.576	13.619	130.000
3	4	4	Car	Commuting	All	2023	0.495	0.001	757.576	0.000	130.000
1	2	4	Car	Business	All	2037	0.074	0.000	719.424	0.148	130.000
1	3	4	Car	Business	All	2037	0.074	0.000	719.424	2.300	130.000

3	1	4	Car	Business	All	2037	0.074	0.000	719.424	2.449	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	719.424	0.000	130.000

Displayed 20 warnings of a total of 272 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	CaL_Speed	DS_trips	VOC_Speed
3	4	4	LGV Freight	Business	All	2023	0.096	0.000	566.572	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	0.096	0.000	566.572	0.192	110.000
3	4	4	Car	Commuting	All	2023	0.495	0.001	566.572	0.000	130.000
3	4	4	OGV2	Business	All	2023	0.118	0.000	566.572	0.000	85.000
1	2	4	Car	Business	All	2023	0.074	0.000	566.572	0.148	130.000
1	2	4	Car	Commuting	All	2023	0.495	0.001	566.572	0.990	130.000
3	4	4	Car	Business	All	2023	0.074	0.000	566.572	0.000	130.000
1	2	4	Car	Other	All	2023	1.153	0.002	566.572	2.306	130.000
3	4	4	Car	Other	All	2023	1.153	0.002	566.572	0.000	130.000
1	2	4	OGV2	Business	All	2023	0.118	0.000	566.572	0.236	85.000
3	4	4	Car	Other	All	2037	1.153	0.002	524.934	0.000	130.000
1	2	4	Car	Other	All	2037	1.153	0.002	524.934	2.306	130.000
1	2	4	OGV2	Business	All	2037	0.118	0.000	524.934	0.236	85.000
1	2	4	Car	Business	All	2037	0.074	0.000	524.934	0.148	130.000
3	4	4	LGV Freight	Business	All	2037	0.096	0.000	524.934	0.000	110.000
3	4	4	OGV2	Business	All	2037	0.118	0.000	524.934	0.000	85.000
1	2	4	LGV Freight	Business	All	2037	0.096	0.000	524.934	0.192	110.000
3	4	4	Car	Business	All	2037	0.074	0.000	524.934	0.000	130.000
1	2	4	Car	Commuting	All	2037	0.495	0.001	524.934	0.990	130.000

3 4 4 Car Commuting All 2037 0.495 0.001 524.934 0.000 130.000

Displayed 20 warnings of a total of 497 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-7\_Kirk Hill\_V4\_150B

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile - 7\_Kirk Hill\_Main\_V4\_150B.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750



Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0

Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0

Road	2021	94	138	4106	17	0	0	0	0
Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	0	398
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0
Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0
Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0



Road	2046	0	0	0	0	2	0	0	0
Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0

Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0
Road	2081	0	0	0	0	2	0	0	0
Road	2082	0	0	0	0	2	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	51	51
Road	2021	0	2983	2983
Road	2022	0	657	657
Road	2023	0	8	8
Road	2024	0	1	1
Road	2025	0	1	1
Road	2026	0	1	1
Road	2027	0	1	1
Road	2028	0	6	6

Road	2029	0	1	1
Road	2030	0	1	1
Road	2031	0	1	1
Road	2032	0	1	1
Road	2033	0	19	19
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	4	4
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10

Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1

Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1483	1483
Car	2023	PM peak	1848	1848
Car	2023	Inter-peak	4033	4033
Car	2023	Off-peak	539	539
Car	2023	All	7903	7903
Car	2037	AM peak	1612	1612
Car	2037	PM peak	1908	1908
Car	2037	Inter-peak	4468	4468
Car	2037	Off-peak	600	600
Car	2037	All	8587	8587
LGV Personal	2023	AM peak	27	27
LGV Personal	2023	PM peak	27	27
LGV Personal	2023	Inter-peak	80	80
LGV Personal	2023	Off-peak	4	4
LGV Personal	2023	All	138	138
LGV Personal	2037	AM peak	29	29

LGV Personal	2037	PM peak	28	28
LGV Personal	2037	Inter-peak	89	89
LGV Personal	2037	Off-peak	5	5
LGV Personal	2037	All	151	151
LGV Freight	2023	AM peak	197	197
LGV Freight	2023	PM peak	198	198
LGV Freight	2023	Inter-peak	590	590
LGV Freight	2023	Off-peak	30	30
LGV Freight	2023	All	1014	1014
LGV Freight	2037	AM peak	214	214
LGV Freight	2037	PM peak	204	204
LGV Freight	2037	Inter-peak	653	653
LGV Freight	2037	Off-peak	34	34
LGV Freight	2037	All	1105	1105
OGV1	2023	AM peak	15	15
OGV1	2023	PM peak	14	14
OGV1	2023	Inter-peak	78	78
OGV1	2023	Off-peak	16	16
OGV1	2023	All	122	122
OGV1	2037	AM peak	16	16
OGV1	2037	PM peak	14	14
OGV1	2037	Inter-peak	86	86
OGV1	2037	Off-peak	18	18
OGV1	2037	All	134	134
OGV2	2023	AM peak	25	25

OGV2	2023 PM peak	47	47
OGV2	2023 Inter-peak	164	164
OGV2	2023 Off-peak	37	37
OGV2	2023 All	274	274
OGV2	2037 AM peak	28	28
OGV2	2037 PM peak	49	49
OGV2	2037 Inter-peak	182	182
OGV2	2037 Off-peak	41	41
OGV2	2037 All	300	300
All	2023 AM peak	1746	1746
All	2023 PM peak	2134	2134
All	2023 Inter-peak	4945	4945
All	2023 Off-peak	626	626
All	2023 All	9452	9452
All	2037 AM peak	1898	1898
All	2037 PM peak	2203	2203
All	2037 Inter-peak	5479	5479
All	2037 Off-peak	697	697
All	2037 All	10276	10276

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	955	0	389	246	317	0	363	244
Road	2037	968	0	219	166	280	0	198	164

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	268	245	35	244	232	35
Car	2037	226	154	297	199	141	297
LGV Personal	2023	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0
LGV Freight	2023	0	22	0	0	21	0
LGV Freight	2037	0	20	9	0	19	9
OGV1	2023	0	0	0	0	1	0
OGV1	2037	0	0	0	0	1	0
OGV2	2023	0	6	0	0	5	0
OGV2	2037	0	6	0	0	6	0
All	2023	268	272	36	244	259	36
All	2037	226	181	306	199	166	306
Car	Total	11732	8199	22795	10391	7547	22795
LGV Personal	Total	0	9	7	0	18	14
LGV Freight	Total	9	1087	812	8	1037	812
OGV1	Total	0	12	0	0	38	0
OGV2	Total	0	383	0	0	330	0
All	Total	11741	9691	23614	10399	8971	23622

CO2\_EMISSIONS\_UNTRADED



Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1146	1067	-80	23	21	-2	46	43	-3	69	65	-5
Car	2037	841	754	-88	19	17	-2	38	34	-4	58	52	-6
LGV Personal	2023	0	1	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	53	52	-1	1	1	-0	2	2	-0	3	3	-0
LGV Freight	2037	48	46	-2	1	1	-0	2	2	-0	3	3	-0
OGV1	2023	0	1	1	0	0	0	0	0	0	0	0	0
OGV1	2037	1	2	1	0	0	0	0	0	0	0	0	0
OGV2	2023	14	12	-2	0	0	-0	1	0	-0	1	1	-0
OGV2	2037	16	13	-2	0	0	-0	1	1	-0	1	1	-0
All	2023	1214	1133	-81	24	23	-2	49	46	-3	74	69	-5
All	2024	1192	1109	-83	24	22	-2	47	44	-3	71	66	-5
All	2025	1165	1081	-84	23	21	-2	45	42	-3	68	63	-5
All	2026	1141	1055	-85	22	20	-2	43	40	-3	65	60	-5
All	2027	1116	1030	-86	21	19	-2	42	38	-3	63	58	-5
All	2028	1089	1002	-87	20	18	-2	40	37	-3	60	55	-5
All	2029	1065	978	-88	19	18	-2	39	35	-3	58	53	-5
All	2030	1042	953	-88	18	17	-2	37	34	-3	55	50	-5
All	2031	1016	927	-89	19	17	-2	38	34	-3	57	52	-5
All	2032	995	906	-89	19	18	-2	39	35	-3	58	53	-5
All	2033	977	887	-90	20	18	-2	40	36	-4	60	54	-5
All	2034	955	865	-90	20	18	-2	40	37	-4	60	55	-6
All	2035	939	849	-90	20	18	-2	41	37	-4	61	56	-6

All	2036	924	833	-91	21	19	-2	41	37	-4	62	56	-6
All	2037	906	815	-91	21	19	-2	41	37	-4	62	56	-6
All	2038	886	797	-89	21	18	-2	41	37	-4	62	56	-6
All	2039	867	780	-87	21	18	-2	41	37	-4	62	56	-6
All	2040	845	760	-85	20	18	-2	41	37	-4	61	55	-6
All	2041	827	744	-83	20	18	-2	40	36	-4	61	55	-6
All	2042	809	728	-81	20	18	-2	40	36	-4	60	54	-6
All	2043	789	710	-79	20	18	-2	39	35	-4	59	53	-6
All	2044	773	696	-78	19	17	-2	39	35	-4	58	52	-6
All	2045	759	683	-76	19	17	-2	38	34	-4	57	52	-6
All	2046	742	667	-74	19	17	-2	38	34	-4	56	51	-6
All	2047	728	655	-73	18	17	-2	37	33	-4	55	50	-6
All	2048	714	643	-72	18	16	-2	36	33	-4	54	49	-5
All	2049	698	629	-70	18	16	-2	35	32	-4	53	48	-5
All	2050	685	616	-69	17	16	-2	35	31	-3	52	47	-5
All	2051	685	616	-69	17	15	-2	35	31	-3	53	47	-5
All	2052	685	616	-69	17	15	-2	35	31	-4	53	48	-5
All	2053	685	616	-69	17	15	-2	35	32	-4	53	48	-5
All	2054	685	616	-69	17	15	-2	35	32	-4	53	48	-5
All	2055	685	616	-69	17	15	-2	35	32	-4	54	48	-5
All	2056	685	616	-69	16	15	-2	35	31	-4	54	48	-5
All	2057	685	616	-69	16	15	-2	35	31	-4	54	48	-5
All	2058	685	616	-69	16	14	-2	35	31	-3	54	48	-5
All	2059	685	616	-69	16	14	-2	35	31	-3	53	48	-5
All	2060	685	616	-69	15	14	-2	34	31	-3	53	48	-5

All	2061	685	616	-69	15	14	-2	34	31	-3	53	47	-5
All	2062	685	616	-69	15	13	-1	34	30	-3	52	47	-5
All	2063	685	616	-69	14	13	-1	33	30	-3	52	47	-5
All	2064	685	616	-69	14	13	-1	33	29	-3	51	46	-5
All	2065	685	616	-69	14	12	-1	32	29	-3	50	45	-5
All	2066	685	616	-69	13	12	-1	31	28	-3	50	45	-5
All	2067	685	616	-69	13	12	-1	31	28	-3	49	44	-5
All	2068	685	616	-69	12	11	-1	30	27	-3	48	43	-5
All	2069	685	616	-69	12	11	-1	30	27	-3	47	42	-5
All	2070	685	616	-69	12	10	-1	29	26	-3	46	42	-5
All	2071	685	616	-69	11	10	-1	28	25	-3	45	41	-5
All	2072	685	616	-69	11	10	-1	28	25	-3	44	40	-4
All	2073	685	616	-69	10	9	-1	27	24	-3	43	39	-4
All	2074	685	616	-69	10	9	-1	26	24	-3	42	38	-4
All	2075	685	616	-69	10	9	-1	25	23	-3	41	37	-4
All	2076	685	616	-69	9	8	-1	25	22	-2	40	36	-4
All	2077	685	616	-69	9	8	-1	24	22	-2	39	35	-4
All	2078	685	616	-69	8	8	-1	23	21	-2	38	34	-4
All	2079	685	616	-69	8	7	-1	23	20	-2	37	33	-4
All	2080	685	616	-69	8	7	-1	22	20	-2	36	32	-4
All	2081	685	616	-69	7	7	-1	21	19	-2	35	32	-4
All	2082	685	616	-69	7	6	-1	21	18	-2	34	31	-3
Car	Total	44140	39785	-4355	895	806	-89	1922	1731	-191	2950	2656	-293
LGV Personal	Total	23	45	22	0	1	0	1	2	1	2	3	1
LGV Freight	Total	2649	2525	-124	54	51	-3	116	111	-5	179	170	-8

OGV1	Total	30	92	62	1	2	1	1	4	3	2	6	4
OGV2	Total	927	799	-129	19	16	-3	41	35	-6	63	54	-9
All	Total	47769	43246	-4523	968	876	-92	2081	1883	-198	3195	2890	-305

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	9	9	0	0	0	0	0	0	0	0	0	0
Car	2037	17	17	0	0	0	1	1	0	1	1	0	0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2037	1	1	0	0	0	0	0	0	0	0	0	0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	9	9	0	0	0	0	0	0	0	0	0	0
All	2024	11	11	0	0	0	0	0	0	0	0	0	0
All	2025	14	14	0	0	0	0	0	0	1	1	0	0
All	2026	16	16	0	0	0	0	0	0	1	1	0	0
All	2027	18	18	0	0	0	1	1	0	1	1	0	0
All	2028	20	20	0	0	0	1	1	0	1	1	0	0
All	2029	21	21	0	0	0	1	1	0	1	1	0	0
All	2030	21	21	0	0	0	1	1	0	1	1	0	0

All	2031	21	21	0	0	0	0	1	1	0	1	1	0
All	2032	21	21	0	0	0	0	1	1	0	1	1	0
All	2033	21	21	0	0	0	0	1	1	0	1	1	0
All	2034	20	20	0	0	0	0	1	1	0	1	1	0
All	2035	19	19	0	0	0	0	1	1	0	1	1	0
All	2036	19	19	0	0	0	0	1	1	0	1	1	0
All	2037	18	18	0	0	0	0	1	1	0	1	1	0
All	2038	17	17	0	0	0	0	1	1	0	1	1	0
All	2039	16	16	0	0	0	0	1	1	0	1	1	0
All	2040	15	15	0	0	0	0	1	1	0	1	1	0
All	2041	15	15	0	0	0	0	1	1	0	1	1	0
All	2042	15	15	0	0	0	0	1	1	0	1	1	0
All	2043	15	15	0	0	0	0	1	1	0	1	1	0
All	2044	15	15	0	0	0	0	1	1	0	1	1	0
All	2045	15	15	0	0	0	0	1	1	0	1	1	0
All	2046	15	15	0	0	0	0	1	1	0	1	1	0
All	2047	14	14	0	0	0	0	1	1	0	1	1	0
All	2048	14	14	0	0	0	0	1	1	0	1	1	0
All	2049	14	14	0	0	0	0	1	1	0	1	1	0
All	2050	14	14	0	0	0	0	1	1	0	1	1	0
All	2051	14	14	0	0	0	0	1	1	0	1	1	0
All	2052	14	14	0	0	0	0	1	1	0	1	1	0
All	2053	14	14	0	0	0	0	1	1	0	1	1	0
All	2054	14	14	0	0	0	0	1	1	0	1	1	0
All	2055	14	14	0	0	0	0	1	1	0	1	1	0



All	2081	14	14	0	0	0	0	0	0	0	1	1	0
All	2082	14	14	0	0	0	0	0	0	0	1	1	0
Car	Total	865	865	0	18	18	0	37	37	0	57	57	0
LGV Personal	Total	0	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	29	29	0	1	1	0	1	1	0	2	2	0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	894	895	0	18	18	0	38	38	0	59	59	0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	174	172	-1	3	3	-0	7	7	-0	11	10	-0
AM peak	2037	140	123	-17	3	3	-0	6	6	-1	10	8	-1
PM peak	2023	301	203	-97	6	4	-2	12	8	-4	18	12	-6
PM peak	2037	221	133	-88	5	3	-2	10	6	-4	15	9	-6
Inter-peak	2023	665	683	17	13	14	0	27	28	1	40	41	1
Inter-peak	2037	490	504	14	11	12	0	22	23	1	34	35	1
Off-peak	2023	73	74	1	1	1	0	3	3	0	4	5	0
Off-peak	2037	55	56	1	1	1	0	3	3	0	4	4	0
AM peak	Total	7286	6521	-765	148	132	-16	318	284	-34	488	436	-52
PM peak	Total	11675	7160	-4515	237	145	-92	508	311	-197	780	477	-303
Inter-peak	Total	25894	26619	725	525	540	15	1128	1159	32	1731	1780	49
Off-peak	Total	2914	2946	32	59	60	1	127	128	1	195	197	2

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	2037	3	3	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	3	3	0	0	0	0	0	0	0	0	0	0
Inter-peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	10	10	0	0	0	0	0	0	1	1	0	0
Off-peak	2023	1	1	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	Total	133	133	-0	3	3	-0	6	6	-0	9	9	-0
PM peak	Total	175	175	-0	4	4	-0	7	7	-0	11	11	-0
Inter-peak	Total	530	530	0	11	11	0	23	23	0	35	35	0
Off-peak	Total	57	57	0	1	1	0	2	2	0	4	4	0

#### MODE

User benefits and changes in revenues by mode, all years. E000s.



Mode	Year	User	User_Charges	Vehicle_Operating_Cost			Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes	
Road	2023	637	0	26	2	0	-15	
Road	2024	640	0	26	2	0	-15	
Road	2025	643	0	26	2	0	-15	
Road	2026	647	0	26	2	0	-15	
Road	2027	651	0	25	2	0	-14	
Road	2028	655	0	25	2	0	-14	
Road	2029	659	0	25	2	0	-14	
Road	2030	664	0	24	2	0	-14	
Road	2031	668	0	24	2	0	-13	
Road	2032	672	0	23	2	0	-13	
Road	2033	675	0	22	2	0	-13	
Road	2034	679	0	22	2	0	-13	
Road	2035	682	0	21	2	0	-12	
Road	2036	685	0	21	2	0	-12	
Road	2037	688	0	20	2	0	-12	
Road	2038	678	0	19	2	0	-11	
Road	2039	668	0	18	2	0	-11	
Road	2040	658	0	17	1	0	-10	
Road	2041	648	0	16	1	0	-10	
Road	2042	639	0	16	1	0	-9	
Road	2043	629	0	15	1	0	-9	
Road	2044	619	0	14	1	0	-8	
Road	2045	610	0	13	1	0	-8	

Road	2046	600	0	13	1	0	-7
Road	2047	591	0	12	1	0	-7
Road	2048	582	0	11	1	0	-7
Road	2049	573	0	11	1	0	-6
Road	2050	564	0	10	1	0	-6
Road	2051	558	0	10	1	0	-6
Road	2052	553	0	10	1	0	-6
Road	2053	547	0	10	1	0	-6
Road	2054	542	0	9	1	0	-6
Road	2055	536	0	9	1	0	-6
Road	2056	531	0	9	1	0	-5
Road	2057	525	0	9	1	0	-5
Road	2058	520	0	8	1	0	-5
Road	2059	515	0	8	1	0	-5
Road	2060	510	0	8	1	0	-5
Road	2061	505	0	8	1	0	-5
Road	2062	500	0	8	1	0	-5
Road	2063	496	0	7	1	0	-5
Road	2064	491	0	7	1	0	-4
Road	2065	487	0	7	1	0	-4
Road	2066	483	0	7	1	0	-4
Road	2067	479	0	7	1	0	-4
Road	2068	475	0	7	1	0	-4
Road	2069	471	0	6	1	0	-4
Road	2070	467	0	6	1	0	-4

Road	2071	463	0	6	1	0	-4
Road	2072	459	0	6	1	0	-4
Road	2073	455	0	6	1	0	-4
Road	2074	451	0	6	1	0	-4
Road	2075	447	0	5	0	0	-3
Road	2076	443	0	5	0	0	-3
Road	2077	439	0	5	0	0	-3
Road	2078	435	0	5	0	0	-3
Road	2079	431	0	5	0	0	-3
Road	2080	428	0	5	0	0	-3
Road	2081	424	0	5	0	0	-3
Road	2082	420	0	5	0	0	-3
Road	Total	33488	0	763	64	0	-451

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	610	0	26	1	0	-15
Car	2037	657	0	20	1	0	-11
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	26	0	0	1	0	-0
LGV Freight	2037	30	0	1	1	0	-0
OGV1	2023	0	0	-0	0	0	0

OGV1	2037	0	0	-0	0	0	0
OGV2	2023	1	0	1	0	0	-0
OGV2	2037	1	0	0	0	0	-0
All	2023	637	0	26	2	0	-15
All	2037	688	0	20	2	0	-12
Car	Total	31971	0	740	21	0	-437
LGV Personal	Total	12	0	-4	0	0	2
LGV Freight	Total	1447	0	18	30	0	-10
OGV1	Total	5	0	-9	1	0	5
OGV2	Total	53	0	19	12	0	-11
All	Total	33488	0	763	64	0	-451

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri		PT_fares_(pri		Taxes	
All	2023	637	0	26	2	0	-15	
All	2037	688	0	20	2	0	-12	
All	Total	33488	0	763	64	0	-451	

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri		PT_fares_(pri		Taxes	
Business	2023	31	0	1	2	0	-0	

Business	2037	36	0	1	2	0	-0
Commuting	2023	196	0	7	0	0	-4
Commuting	2037	214	0	5	0	0	-3
Other	2023	410	0	19	0	0	-11
Other	2037	439	0	14	0	0	-8
Business	Total	1723	0	31	64	0	-18
Commuting	Total	10374	0	192	0	0	-114
Other	Total	21391	0	540	0	0	-319

PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	123	0	1	0	0	-0
AM peak	2037	186	0	4	1	0	-2
PM peak	2023	572	0	31	2	0	-18
PM peak	2037	546	0	20	1	0	-11
Inter-peak	2023	-52	0	-5	-0	0	3
Inter-peak	2037	-39	0	-3	-0	0	2
Off-peak	2023	-6	0	-0	-0	0	0
Off-peak	2037	-5	0	-0	-0	0	0
AM peak	Total	8717	0	119	22	0	-71
PM peak	Total	27043	0	774	49	0	-455
Inter-peak	Total	-2009	0	-124	-6	0	72
Off-peak	Total	-263	0	-5	-1	0	3

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	0
Car	Business	2037	0	0	-0	1	0	0
Car	Business	Total	0	0	-6	61	0	0
Car	Commuting	2023	0	0	-1	12	15	0
Car	Commuting	2037	0	0	-0	19	18	0
Car	Commuting	Total	0	0	-28	1102	1059	0
Car	Other	2023	0	0	-20	26	104	13
Car	Other	2037	0	0	-20	7	80	100
Car	Other	Total	0	0	-1194	535	4962	5321
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	6	0	0
LGV Freight	Business	2023	0	0	-0	3	0	0
LGV Freight	Business	2037	0	0	-0	4	0	0
LGV Freight	Business	Total	0	0	-24	260	0	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	1	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-2	10	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	5	0	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-23	241	0	0
Car	Commuting	2023	0	0	-5	88	112	0
Car	Commuting	2037	0	0	-3	112	104	0
Car	Commuting	Total	0	0	-139	5331	5182	0
Car	Other	2023	0	0	-68	86	349	43
Car	Other	2037	0	0	-52	17	211	263
Car	Other	Total	0	0	-2689	1325	11321	11422
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	13	0	0
LGV Freight	Business	2023	0	0	-4	30	0	0
LGV Freight	Business	2037	0	0	-3	33	0	0
LGV Freight	Business	Total	0	0	-147	1594	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0



LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-3	8	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	1	0	0
OGV2	Business	2037	0	0	-0	1	0	0
OGV2	Business	Total	0	0	-15	68	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	5	0	0
Car	Business	2037	0	0	-0	6	0	0
Car	Business	Total	0	0	-26	269	0	0
Car	Commuting	2023	0	0	-5	89	118	0
Car	Commuting	2037	0	0	-3	114	107	0
Car	Commuting	Total	0	0	-139	5403	5302	0
Car	Other	2023	0	0	-68	81	371	46
Car	Other	2037	0	0	-52	14	218	274
Car	Other	Total	0	0	-2689	1199	11658	11754
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-5	14	0	0
LGV Freight	Business	2023	0	0	-4	31	0	0
LGV Freight	Business	2037	0	0	-3	34	0	0
LGV Freight	Business	Total	0	0	-150	1644	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0

LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-14	11	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	2	0	0
OGV2	Business	2037	0	0	-0	2	0	0
OGV2	Business	Total	0	0	-19	103	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	0	0	0	0	0
OGV1	Business	2037	0	0	0	0	0	0	0	0
OGV1	Business	Total	0	1	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	8	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	0	0	0	0	0
OGV1	Business	2037	0	0	0	0	0	0	0	0
OGV1	Business	Total	0	5	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	53	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	5	0	0	0	0	0	0





LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-3	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	2	0	0	0	0	0	0
OGV2	Business	2037	0	2	0	0	0	0	0	0
OGV2	Business	Total	0	84	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode      2023   2037

Road      41.85% 52.51%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	10374	10374
Vehicle operating costs	192	192
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>10566</b>	<b>10566</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	21391	21391
Vehicle operating costs	540	540
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>21931</b>	<b>21931</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	1723	218	1505
Vehicle operating costs	95	25	70
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>1818</b>	<b>243</b>	<b>1575</b>

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-255	-255
NET BUSINESS IMPACT	1563	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	34060
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
NET IMPACT	738	738

Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

Central Government Funding: Non-Transport

Indirect Tax Revenues	451	451
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TOTALS

Broad Transport Budget	3632	3632
Wider Public Finances	451	451

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	198
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Economic Efficiency: Consumer Users (Commuting)	10566
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Economic Efficiency: Consumer Users (Other)	21931
Economic Efficiency: Business Users and Providers	1563
Wider Public Finances (Indirect Taxation Revenues)	-451
Present Value of Benefits (PVB)	33807
Broad Transport Budget	3632
Present Value of Costs (PVC)	3632
OVERALL IMPACTS	
Net Present Value (NPV)	30175
Benefit to Cost Ratio (BCR)	9.308

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile - 7\_Kirk Hill\_Main\_V4\_150B.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Core\_V4\_150B\7\_Kirk Hill\_Core\_Outputs\_V4\_150B.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Core\_V4\_150B\7\_Kirk Hill\_Core\_Outputs\_V4\_150B.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 11:46:47

ERRORS AND WARNINGS

1098 Warnings found in total (including any above)

Warning (14 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	OGV2	Business	All	2023	0.000	0.001	0.307	3.248	3.248
1	3	4	Car	Other	All	2023	0.002	0.005	0.307	31.702	31.702
1	3	4	OGV1	Business	All	2023	0.000	0.000	0.307	1.383	1.383
1	3	4	Car	Business	All	2023	0.000	0.000	0.307	2.040	2.040
1	3	4	LGV Freight	Business	All	2023	0.000	0.000	0.307	2.646	2.646
1	3	4	Car	Commuting	All	2023	0.001	0.002	0.307	13.619	13.619
1	3	4	LGV Personal	Other	All	2023	0.000	0.000	0.307	0.361	0.361
1	3	4	Car	Commuting	All	2037	0.001	0.002	0.316	15.352	15.352
1	3	4	LGV Freight	Business	All	2037	0.000	0.000	0.316	2.983	2.983
1	3	4	Car	Business	All	2037	0.000	0.000	0.316	2.300	2.300
1	3	4	OGV2	Business	All	2037	0.000	0.001	0.316	3.661	3.661
1	3	4	OGV1	Business	All	2037	0.000	0.000	0.316	1.559	1.559
1	3	4	Car	Other	All	2037	0.002	0.005	0.316	35.737	35.737
1	3	4	LGV Personal	Other	All	2037	0.000	0.000	0.316	0.407	0.407
3	1	4	OGV1	Business	All	2037	0.000	0.000	0.365	1.660	1.660

3	1	4	Car	Business	All	2037	0.000	0.000	0.365	2.449	2.449
3	1	4	LGV Personal	Other	All	2037	0.000	0.000	0.365	0.433	0.433
3	1	4	Car	Commuting	All	2037	0.001	0.002	0.365	16.343	16.343
3	1	4	Car	Other	All	2037	0.002	0.004	0.365	38.042	38.042
3	1	4	LGV Freight	Business	All	2037	0.000	0.000	0.365	3.175	3.175

Displayed 20 warnings of a total of 56 of this type.

Warning (196 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
3	4	2	OGV2	Business	All	2023	0.004	0.000	17.191	0.155	0.155
3	4	2	OGV1	Business	All	2023	0.001	0.000	17.191	0.046	0.046
3	4	2	LGV Freight	Business	All	2023	0.016	0.001	17.191	0.649	0.649
3	4	2	Car	Other	All	2023	0.092	0.005	17.191	3.777	3.777
3	4	2	Car	Commuting	All	2023	0.048	0.003	17.191	1.975	1.975
3	4	2	Car	Business	All	2023	0.008	0.000	17.191	0.310	0.310
3	4	2	LGV Personal	Other	All	2023	0.002	0.000	17.191	0.089	0.089
3	4	2	Car	Other	All	2037	0.103	0.006	16.925	2.158	2.158
3	4	2	Car	Business	All	2037	0.008	0.001	16.925	0.177	0.177
3	4	2	Car	Commuting	All	2037	0.054	0.003	16.925	1.128	1.128
3	4	2	OGV1	Business	All	2037	0.001	0.000	16.925	0.026	0.026
3	4	2	LGV Personal	Other	All	2037	0.002	0.000	16.925	0.051	0.051
3	4	2	OGV2	Business	All	2037	0.004	0.000	16.925	0.089	0.089
3	4	2	LGV Freight	Business	All	2037	0.018	0.001	16.925	0.371	0.371
1	2	1	Car	Commuting	All	2037	0.037	0.002	15.409	26.018	26.018
1	2	1	LGV Personal	Other	All	2037	0.002	0.000	15.409	1.228	1.228



1	2	1	OGV1	Business	All	2037	0.001	0.000	15.409	0.676	0.676
1	2	1	OGV2	Business	All	2037	0.002	0.000	15.409	1.161	1.161
1	2	1	LGV Freight	Business	All	2037	0.013	0.001	15.409	9.006	9.006
1	2	1	Car	Other	All	2037	0.053	0.003	15.409	37.189	37.189

Displayed 20 warnings of a total of 238 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	3	2	Car	Other	All	2037	1.079	0.112	9.672	14.567	10.000
2	4	2	Car	Other	All	2037	1.079	0.112	9.672	22.659	10.000
2	1	2	Car	Commuting	All	2037	0.564	0.058	9.672	42.594	10.000
2	1	2	LGV Personal	Other	All	2037	0.025	0.003	9.672	1.910	10.000
2	1	2	OGV2	Business	All	2037	0.044	0.005	9.672	3.354	12.000
2	3	2	Car	Commuting	All	2037	0.564	0.058	9.672	7.616	10.000
2	4	2	Car	Commuting	All	2037	0.564	0.058	9.672	11.847	10.000
2	1	2	Car	Other	All	2037	1.079	0.112	9.672	81.466	10.000
2	3	2	OGV2	Business	All	2037	0.044	0.005	9.672	0.600	12.000
2	4	2	OGV2	Business	All	2037	0.044	0.005	9.672	0.933	12.000
2	1	2	Car	Business	All	2037	0.089	0.009	9.672	6.686	10.000
2	3	2	Car	Business	All	2037	0.089	0.009	9.672	1.196	10.000
2	4	2	Car	Business	All	2037	0.089	0.009	9.672	1.860	10.000
2	1	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	14.005	10.000
2	3	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	2.504	10.000
2	4	2	LGV Freight	Business	All	2037	0.185	0.019	9.672	3.895	10.000
2	1	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.985	12.000

2	3	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.176	12.000
2	4	2	OGV1	Business	All	2037	0.013	0.001	9.672	0.274	12.000
2	3	2	LGV Personal	Other	All	2037	0.025	0.003	9.672	0.342	10.000

Displayed 20 warnings of a total of 35 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
1	2	4	Car	Other	All	2023	1.153	0.002	757.576	2.306	130.000
3	1	4	Car	Other	All	2023	1.153	0.002	757.576	34.008	130.000
3	4	4	Car	Other	All	2023	1.153	0.002	757.576	0.000	130.000
1	3	4	OGV2	Business	All	2023	0.118	0.000	757.576	3.248	85.000
1	3	4	Car	Other	All	2023	1.153	0.002	757.576	31.702	130.000
1	2	4	OGV2	Business	All	2023	0.118	0.000	757.576	0.236	85.000
3	4	4	OGV2	Business	All	2023	0.118	0.000	757.576	0.000	85.000
3	1	4	OGV2	Business	All	2023	0.118	0.000	757.576	3.484	85.000
1	2	4	Car	Commuting	All	2023	0.495	0.001	757.576	0.990	130.000
3	1	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	2.838	110.000
3	4	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	0.000	110.000
3	1	4	Car	Commuting	All	2023	0.495	0.001	757.576	14.610	130.000
1	2	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	0.192	110.000
1	3	4	LGV Freight	Business	All	2023	0.096	0.000	757.576	2.646	110.000
1	3	4	Car	Commuting	All	2023	0.495	0.001	757.576	13.619	130.000
3	4	4	Car	Commuting	All	2023	0.495	0.001	757.576	0.000	130.000
1	2	4	Car	Business	All	2037	0.074	0.000	719.424	0.148	130.000
1	3	4	Car	Business	All	2037	0.074	0.000	719.424	2.300	130.000

3	1	4	Car	Business	All	2037	0.074	0.000	719.424	2.449	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	719.424	0.000	130.000

Displayed 20 warnings of a total of 272 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	CaL_Speed	DS_trips	VOC_Speed
3	4	4	LGV Freight	Business	All	2023	0.096	0.000	566.572	0.000	110.000
1	2	4	LGV Freight	Business	All	2023	0.096	0.000	566.572	0.192	110.000
3	4	4	Car	Commuting	All	2023	0.495	0.001	566.572	0.000	130.000
3	4	4	OGV2	Business	All	2023	0.118	0.000	566.572	0.000	85.000
1	2	4	Car	Business	All	2023	0.074	0.000	566.572	0.148	130.000
1	2	4	Car	Commuting	All	2023	0.495	0.001	566.572	0.990	130.000
3	4	4	Car	Business	All	2023	0.074	0.000	566.572	0.000	130.000
1	2	4	Car	Other	All	2023	1.153	0.002	566.572	2.306	130.000
3	4	4	Car	Other	All	2023	1.153	0.002	566.572	0.000	130.000
1	2	4	OGV2	Business	All	2023	0.118	0.000	566.572	0.236	85.000
3	4	4	Car	Other	All	2037	1.153	0.002	524.934	0.000	130.000
1	2	4	Car	Other	All	2037	1.153	0.002	524.934	2.306	130.000
1	2	4	OGV2	Business	All	2037	0.118	0.000	524.934	0.236	85.000
1	2	4	Car	Business	All	2037	0.074	0.000	524.934	0.148	130.000
3	4	4	LGV Freight	Business	All	2037	0.096	0.000	524.934	0.000	110.000
3	4	4	OGV2	Business	All	2037	0.118	0.000	524.934	0.000	85.000
1	2	4	LGV Freight	Business	All	2037	0.096	0.000	524.934	0.192	110.000
3	4	4	Car	Business	All	2037	0.074	0.000	524.934	0.000	130.000
1	2	4	Car	Commuting	All	2037	0.495	0.001	524.934	0.990	130.000

3 4 4 Car Commuting All 2037 0.495 0.001 524.934 0.000 130.000

Displayed 20 warnings of a total of 497 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480

2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320

2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500

2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869



2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973

2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107

2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537

2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000

2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000

2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000

2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000

2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000



2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000

2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000

2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897

2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000

2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000

2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000

2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000

2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000



2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000

2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000

2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000

2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000

2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000

2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899

2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000

2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000



2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000

8	0.0000	100.0000	0.0000
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FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222

2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286

2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836

2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603

2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799

2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316

2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490



2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429

2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850

2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049

2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

			max	min				
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10	
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10	
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10	
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10	
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10	
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10	
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10	
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10	
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10	
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12	
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12	

6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12
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FUEL\_CONSUMPTION - (std)

\*veh\_type fuel\_type a\_fuel b\_fuel c\_fuel d\_fuel cut-off\_speeds(km/h)

*				max	min		
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

\*Start\_yr End\_yr veh\_type fuel\_type change

2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168

2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031

2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361

2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063



2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432

2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102

2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544

2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922

2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258

2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251

2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933

2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873



2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766

2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660

2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693

2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288

2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136

2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062

2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205



2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816

2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095

2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053

2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067

2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826

2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480

2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359

2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122



2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000

2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040

2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144

2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000

2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015

2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name	TUBA-7_Kirk Hill_V4_150B
DM scheme	DM
DS scheme	DS



Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0



Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0

Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0
Road	2021	94	138	4106	17	0	0	0	0
Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	398	
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0

Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0
Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0
Road	2046	0	0	0	0	2	0	0	0
Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0

Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0

Road	2081	0	0	0	0	2	0	0	0
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Road	2082	0	0	0	0	2	0	0	0
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PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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Road	2020	0	51	51
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Road	2021	0	2983	2983
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Road	2022	0	657	657
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Road	2023	0	8	8
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Road	2024	0	1	1
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Road	2025	0	1	1
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Road	2026	0	1	1
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Road	2027	0	1	1
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Road	2028	0	6	6
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Road	2029	0	1	1
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Road	2030	0	1	1
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Road	2031	0	1	1
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Road	2032	0	1	1
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Road	2033	0	19	19
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Road	2034	0	1	1
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Road	2035	0	1	1
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Road	2036	0	1	1
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Road	2037	0	1	1
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Road	2038	0	4	4
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Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55

Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1483	1483

Car	2023 PM peak	1848	1848
Car	2023 Inter-peak	4033	4033
Car	2023 Off-peak	539	539
Car	2023 All	7903	7903
Car	2037 AM peak	1612	1612
Car	2037 PM peak	1908	1908
Car	2037 Inter-peak	4468	4468
Car	2037 Off-peak	600	600
Car	2037 All	8587	8587
LGV Personal	2023 AM peak	27	27
LGV Personal	2023 PM peak	27	27
LGV Personal	2023 Inter-peak	80	80
LGV Personal	2023 Off-peak	4	4
LGV Personal	2023 All	138	138
LGV Personal	2037 AM peak	29	29
LGV Personal	2037 PM peak	28	28
LGV Personal	2037 Inter-peak	89	89
LGV Personal	2037 Off-peak	5	5
LGV Personal	2037 All	151	151
LGV Freight	2023 AM peak	197	197
LGV Freight	2023 PM peak	198	198
LGV Freight	2023 Inter-peak	590	590
LGV Freight	2023 Off-peak	30	30
LGV Freight	2023 All	1014	1014
LGV Freight	2037 AM peak	214	214



LGV Freight	2037 PM peak	204	204
LGV Freight	2037 Inter-peak	653	653
LGV Freight	2037 Off-peak	34	34
LGV Freight	2037 All	1105	1105
OGV1	2023 AM peak	15	15
OGV1	2023 PM peak	14	14
OGV1	2023 Inter-peak	78	78
OGV1	2023 Off-peak	16	16
OGV1	2023 All	122	122
OGV1	2037 AM peak	16	16
OGV1	2037 PM peak	14	14
OGV1	2037 Inter-peak	86	86
OGV1	2037 Off-peak	18	18
OGV1	2037 All	134	134
OGV2	2023 AM peak	25	25
OGV2	2023 PM peak	47	47
OGV2	2023 Inter-peak	164	164
OGV2	2023 Off-peak	37	37
OGV2	2023 All	274	274
OGV2	2037 AM peak	28	28
OGV2	2037 PM peak	49	49
OGV2	2037 Inter-peak	182	182
OGV2	2037 Off-peak	41	41
OGV2	2037 All	300	300
All	2023 AM peak	1746	1746

All	2023 PM peak	2134	2134
All	2023 Inter-peak	4945	4945
All	2023 Off-peak	626	626
All	2023 All	9452	9452
All	2037 AM peak	1898	1898
All	2037 PM peak	2203	2203
All	2037 Inter-peak	5479	5479
All	2037 Off-peak	697	697
All	2037 All	10276	10276

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	916	0	406	246	305	0	378	244
Road	2037	889	0	202	166	257	0	184	164

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	298	244	36	272	232	36
Car	2037	231	120	382	204	110	382
LGV Personal	2023	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0
LGV Freight	2023	0	21	0	0	21	0



OGV2	2023	14	12	-2	0	0	-0	1	0	-0	1	1	-0
OGV2	2037	11	10	-2	0	0	-0	1	0	-0	1	1	-0
All	2023	1277	1190	-86	26	24	-2	52	48	-4	77	72	-5
All	2024	1253	1165	-88	25	23	-2	50	46	-4	75	69	-5
All	2025	1223	1133	-90	24	22	-2	48	44	-3	72	66	-5
All	2026	1191	1100	-91	23	21	-2	45	42	-3	68	63	-5
All	2027	1159	1068	-92	22	20	-2	43	40	-3	65	60	-5
All	2028	1128	1036	-92	21	19	-2	42	38	-3	62	57	-5
All	2029	1098	1005	-93	20	18	-2	40	36	-3	60	55	-5
All	2030	1054	962	-92	18	17	-2	37	34	-3	56	51	-5
All	2031	1012	922	-91	19	17	-2	38	34	-3	56	51	-5
All	2032	974	884	-89	19	17	-2	38	35	-3	57	52	-5
All	2033	938	850	-88	19	17	-2	38	34	-4	57	52	-5
All	2034	905	818	-87	19	17	-2	38	35	-4	57	52	-6
All	2035	875	789	-86	19	17	-2	38	34	-4	57	52	-6
All	2036	848	763	-85	19	17	-2	38	34	-4	57	51	-6
All	2037	824	739	-85	19	17	-2	38	34	-4	57	51	-6
All	2038	796	714	-82	18	17	-2	37	33	-4	56	50	-6
All	2039	772	692	-79	18	16	-2	37	33	-4	55	49	-6
All	2040	747	670	-77	18	16	-2	36	32	-4	54	49	-6
All	2041	722	647	-74	18	16	-2	35	32	-4	53	47	-5
All	2042	702	630	-72	17	15	-2	35	31	-4	52	47	-5
All	2043	684	614	-70	17	15	-2	34	31	-3	51	46	-5
All	2044	668	599	-69	17	15	-2	34	30	-3	50	45	-5
All	2045	653	586	-67	17	15	-2	33	29	-3	49	44	-5

All	2046	640	574	-66	16	14	-2	32	29	-3	49	44	-5
All	2047	628	563	-64	16	14	-2	32	29	-3	48	43	-5
All	2048	616	553	-63	16	14	-2	31	28	-3	47	42	-5
All	2049	606	544	-62	15	14	-2	31	28	-3	46	41	-5
All	2050	596	535	-61	15	13	-2	30	27	-3	45	41	-5
All	2051	596	535	-61	15	13	-2	30	27	-3	46	41	-5
All	2052	596	535	-61	15	13	-2	30	27	-3	46	41	-5
All	2053	596	535	-61	15	13	-2	31	27	-3	46	41	-5
All	2054	596	535	-61	15	13	-2	31	27	-3	46	42	-5
All	2055	596	535	-61	15	13	-1	31	27	-3	47	42	-5
All	2056	596	535	-61	14	13	-1	30	27	-3	47	42	-5
All	2057	596	535	-61	14	13	-1	30	27	-3	47	42	-5
All	2058	596	535	-61	14	13	-1	30	27	-3	47	42	-5
All	2059	596	535	-61	14	12	-1	30	27	-3	46	42	-5
All	2060	596	535	-61	13	12	-1	30	27	-3	46	42	-5
All	2061	596	535	-61	13	12	-1	30	27	-3	46	41	-5
All	2062	596	535	-61	13	12	-1	29	26	-3	46	41	-5
All	2063	596	535	-61	13	11	-1	29	26	-3	45	40	-5
All	2064	596	535	-61	12	11	-1	28	25	-3	45	40	-5
All	2065	596	535	-61	12	11	-1	28	25	-3	44	39	-5
All	2066	596	535	-61	11	10	-1	27	25	-3	43	39	-4
All	2067	596	535	-61	11	10	-1	27	24	-3	43	38	-4
All	2068	596	535	-61	11	10	-1	26	24	-3	42	38	-4
All	2069	596	535	-61	10	9	-1	26	23	-3	41	37	-4
All	2070	596	535	-61	10	9	-1	25	23	-3	40	36	-4



LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2037	0	0	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	9	9	0	0	0	0	0	0	0	0	0	0
All	2024	12	12	0	0	0	0	0	0	0	0	0	0
All	2025	16	16	0	0	0	0	0	0	0	1	1	0
All	2026	20	20	0	0	0	0	1	1	0	1	1	0
All	2027	24	24	0	0	0	0	1	1	0	1	1	0
All	2028	26	26	0	0	0	0	1	1	0	1	1	0
All	2029	27	27	0	0	0	0	1	1	0	1	1	0
All	2030	27	27	0	0	0	0	1	1	0	1	1	0
All	2031	27	27	0	1	1	0	1	1	0	2	2	0
All	2032	27	27	0	1	1	0	1	1	0	2	2	0
All	2033	27	27	0	1	1	0	1	1	0	2	2	0
All	2034	26	26	0	1	1	0	1	1	0	2	2	0
All	2035	25	25	0	1	1	0	1	1	0	2	2	0
All	2036	24	24	0	1	1	0	1	1	0	2	2	0
All	2037	22	22	0	1	1	0	1	1	0	2	2	0
All	2038	21	21	0	1	1	0	1	1	0	1	1	0
All	2039	19	19	0	0	0	0	1	1	0	1	1	0
All	2040	18	18	0	0	0	0	1	1	0	1	1	0

All	2041	18	18	0	0	0	0	1	1	0	1	1	0
All	2042	18	18	0	0	0	0	1	1	0	1	1	0
All	2043	18	18	0	0	0	0	1	1	0	1	1	0
All	2044	18	18	0	0	0	0	1	1	0	1	1	0
All	2045	18	18	0	0	0	0	1	1	0	1	1	0
All	2046	17	17	0	0	0	0	1	1	0	1	1	0
All	2047	17	17	0	0	0	0	1	1	0	1	1	0
All	2048	17	17	0	0	0	0	1	1	0	1	1	0
All	2049	16	16	0	0	0	0	1	1	0	1	1	0
All	2050	16	16	0	0	0	0	1	1	0	1	1	0
All	2051	16	16	0	0	0	0	1	1	0	1	1	0
All	2052	16	16	0	0	0	0	1	1	0	1	1	0
All	2053	16	16	0	0	0	0	1	1	0	1	1	0
All	2054	16	16	0	0	0	0	1	1	0	1	1	0
All	2055	16	16	0	0	0	0	1	1	0	1	1	0
All	2056	16	16	0	0	0	0	1	1	0	1	1	0
All	2057	16	16	0	0	0	0	1	1	0	1	1	0
All	2058	16	16	0	0	0	0	1	1	0	1	1	0
All	2059	16	16	0	0	0	0	1	1	0	1	1	0
All	2060	16	16	0	0	0	0	1	1	0	1	1	0
All	2061	16	16	0	0	0	0	1	1	0	1	1	0
All	2062	16	16	0	0	0	0	1	1	0	1	1	0
All	2063	16	16	0	0	0	0	1	1	0	1	1	0
All	2064	16	16	0	0	0	0	1	1	0	1	1	0
All	2065	16	16	0	0	0	0	1	1	0	1	1	0



All	2066	16	16	0	0	0	0	1	1	0	1	1	0
All	2067	16	16	0	0	0	0	1	1	0	1	1	0
All	2068	16	16	0	0	0	0	1	1	0	1	1	0
All	2069	16	16	0	0	0	0	1	1	0	1	1	0
All	2070	16	16	0	0	0	0	1	1	0	1	1	0
All	2071	16	16	0	0	0	0	1	1	0	1	1	0
All	2072	16	16	0	0	0	0	1	1	0	1	1	0
All	2073	16	16	0	0	0	0	1	1	0	1	1	0
All	2074	16	16	0	0	0	0	1	1	0	1	1	0
All	2075	16	16	0	0	0	0	1	1	0	1	1	0
All	2076	16	16	0	0	0	0	1	1	0	1	1	0
All	2077	16	16	0	0	0	0	1	1	0	1	1	0
All	2078	16	16	0	0	0	0	1	1	0	1	1	0
All	2079	16	16	0	0	0	0	1	1	0	1	1	0
All	2080	16	16	0	0	0	0	1	1	0	1	1	0
All	2081	16	16	0	0	0	0	0	0	0	1	1	0
All	2082	16	16	0	0	0	0	0	0	0	1	1	0
Car	Total	1057	1057	0	22	22	0	45	45	0	69	69	0
LGV Personal	Total	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	18	18	-0	0	0	-0	1	1	-0	1	1	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1075	1076	0	22	22	0	46	46	0	70	70	0

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	183	181	-2	4	4	-0	7	7	-0	11	11	-0
AM peak	2037	128	112	-16	3	3	-0	6	5	-1	9	8	-1
PM peak	2023	317	214	-103	6	4	-2	13	9	-4	19	13	-6
PM peak	2037	202	121	-81	5	3	-2	9	6	-4	14	8	-6
Inter-peak	2023	699	717	18	14	14	0	28	29	1	42	43	1
Inter-peak	2037	444	457	12	10	11	0	20	21	1	31	31	1
Off-peak	2023	77	78	1	2	2	0	3	3	0	5	5	0
Off-peak	2037	50	50	0	1	1	0	2	2	0	3	3	0
AM peak	Total	6673	5960	-714	135	121	-15	290	258	-32	444	396	-49
PM peak	Total	10729	6559	-4170	217	133	-84	465	283	-181	713	434	-278
Inter-peak	Total	23609	24267	658	478	491	13	1023	1051	29	1569	1612	44
Off-peak	Total	2639	2667	28	53	54	1	114	116	1	175	177	2

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase

AM peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	2037	3	3	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	4	4	-0	0	0	-0	0	0	-0	0	0	-0
Inter-peak	2023	5	5	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	13	13	0	0	0	0	1	1	0	1	1	0
Off-peak	2023	1	1	0	0	0	0	0	0	0	0	0	0
Off-peak	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	Total	159	159	-0	3	3	-0	7	7	-0	10	10	-0
PM peak	Total	211	211	0	4	4	0	9	9	0	14	14	0
Inter-peak	Total	636	636	0	13	13	0	27	27	0	42	42	0
Off-peak	Total	69	69	0	1	1	0	3	3	0	5	5	0

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost		Operator_Rev		Indirect
		User_Charges	Time_PT_fares_(pri	Fuel	Non_fuel_PT_fares_(pri	Taxes		
Road	2023	612	0	28	2	0	-16	
Road	2024	616	0	28	2	0	-16	
Road	2025	620	0	27	2	0	-16	
Road	2026	623	0	27	2	0	-15	
Road	2027	625	0	27	2	0	-15	
Road	2028	628	0	26	2	0	-15	
Road	2029	630	0	26	2	0	-14	
Road	2030	631	0	25	2	0	-14	

Road	2031	632	0	24	2	0	-13
Road	2032	633	0	23	2	0	-13
Road	2033	633	0	22	2	0	-12
Road	2034	633	0	21	2	0	-12
Road	2035	632	0	20	2	0	-11
Road	2036	632	0	19	2	0	-11
Road	2037	632	0	18	2	0	-11
Road	2038	620	0	17	2	0	-10
Road	2039	607	0	16	2	0	-9
Road	2040	595	0	15	1	0	-9
Road	2041	583	0	14	1	0	-8
Road	2042	571	0	13	1	0	-8
Road	2043	559	0	13	1	0	-7
Road	2044	548	0	12	1	0	-7
Road	2045	536	0	11	1	0	-7
Road	2046	525	0	11	1	0	-6
Road	2047	514	0	10	1	0	-6
Road	2048	503	0	10	1	0	-6
Road	2049	492	0	9	1	0	-5
Road	2050	481	0	9	1	0	-5
Road	2051	473	0	9	1	0	-5
Road	2052	466	0	8	1	0	-5
Road	2053	458	0	8	1	0	-5
Road	2054	451	0	8	1	0	-5
Road	2055	444	0	8	1	0	-5

Road	2056	436	0	8	1	0	-5
Road	2057	430	0	7	1	0	-4
Road	2058	423	0	7	1	0	-4
Road	2059	416	0	7	1	0	-4
Road	2060	410	0	7	1	0	-4
Road	2061	404	0	7	1	0	-4
Road	2062	398	0	7	1	0	-4
Road	2063	392	0	6	1	0	-4
Road	2064	386	0	6	1	0	-4
Road	2065	380	0	6	1	0	-4
Road	2066	375	0	6	1	0	-4
Road	2067	370	0	6	1	0	-4
Road	2068	364	0	6	1	0	-3
Road	2069	359	0	5	1	0	-3
Road	2070	354	0	5	1	0	-3
Road	2071	349	0	5	1	0	-3
Road	2072	344	0	5	1	0	-3
Road	2073	339	0	5	1	0	-3
Road	2074	334	0	5	1	0	-3
Road	2075	329	0	5	0	0	-3
Road	2076	324	0	5	0	0	-3
Road	2077	319	0	4	0	0	-3
Road	2078	315	0	4	0	0	-3
Road	2079	310	0	4	0	0	-3
Road	2080	306	0	4	0	0	-3

Road	2081	301	0	4	0	0	-3
Road	2082	297	0	4	0	0	-2
Road	Total	28602	0	712	64	0	-413

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	585	0	27	1	0	-16
Car	2037	603	0	18	1	0	-10
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	25	0	0	1	0	-0
LGV Freight	2037	27	0	0	1	0	-0
OGV1	2023	0	0	-0	0	0	0
OGV1	2037	0	0	-0	0	0	0
OGV2	2023	1	0	1	0	0	-0
OGV2	2037	1	0	0	0	0	-0
All	2023	612	0	28	2	0	-16
All	2037	632	0	18	2	0	-11
Car	Total	27307	0	693	21	0	-402
LGV Personal	Total	10	0	-3	0	0	2
LGV Freight	Total	1235	0	16	30	0	-9
OGV1	Total	5	0	-8	1	0	4
OGV2	Total	45	0	14	12	0	-8

All	Total	28602	0	712	64	0	-413
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PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. E000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	612	0	28	2	0	-16
All	2037	632	0	18	2	0	-11
All	Total	28602	0	712	64	0	-413

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. E000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	30	0	1	2	0	-0
Business	2037	33	0	1	2	0	-0
Commuting	2023	188	0	7	0	0	-4
Commuting	2037	196	0	5	0	0	-3
Other	2023	394	0	20	0	0	-11
Other	2037	403	0	13	0	0	-7
Business	Total	1471	0	26	64	0	-15
Commuting	Total	8859	0	180	0	0	-104
Other	Total	18272	0	507	0	0	-294

PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User		Vehicle_Operating_Cost		Operator_Rev	Indirect
		User_Charges		Fuel	Non_fuel	PT_fares_(pri)	
AM peak	2023	118	0	1	0	0	-0
AM peak	2037	171	0	4	1	0	-2
PM peak	2023	549	0	33	2	0	-19
PM peak	2037	502	0	18	1	0	-10
Inter-peak	2023	-50	0	-6	-0	0	3
Inter-peak	2037	-36	0	-3	-0	0	2
Off-peak	2023	-5	0	-0	-0	0	0
Off-peak	2037	-5	0	-0	-0	0	0
AM peak	Total	7410	0	111	22	0	-65
PM peak	Total	23143	0	720	49	0	-416
Inter-peak	Total	-1727	0	-113	-6	0	65
Off-peak	Total	-225	0	-5	-1	0	3

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins						> 5 mins	
			-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins			
Car	Business	2023	0	0	-0	1	0	0		
Car	Business	2037	0	0	-0	1	0	0		
Car	Business	Total	0	0	-6	61	0	0		
Car	Commuting	2023	0	0	-1	12	15	0		
Car	Commuting	2037	0	0	-0	19	18	0		
Car	Commuting	Total	0	0	-28	1102	1059	0		



Car	Other	2023	0	0	-20	26	104	13
Car	Other	2037	0	0	-20	7	80	100
Car	Other	Total	0	0	-1194	535	4962	5321
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	-0	0	0	0
LGV Personal Other		2037	0	0	-0	0	0	0
LGV Personal Other		Total	0	0	-1	6	0	0
LGV Freight Business		2023	0	0	-0	3	0	0
LGV Freight Business		2037	0	0	-0	4	0	0
LGV Freight Business		Total	0	0	-24	260	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	-0	0	0	0
OGV1 Business		2037	0	0	-0	0	0	0
OGV1 Business		Total	0	0	-0	1	0	0
OGV1 Commuting		2023	0	0	0	0	0	0

OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-2	10	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	4	0	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-20	206	0	0
Car	Commuting	2023	0	0	-4	85	108	0
Car	Commuting	2037	0	0	-2	103	96	0
Car	Commuting	Total	0	0	-120	4542	4437	0
Car	Other	2023	0	0	-66	82	335	42

Car	Other	2037	0	0	-48	16	194	242
Car	Other	Total	0	0	-2311	1182	9778	9613
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business		Total	0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting		Total	0	0	0	0	0	0
LGV Personal Other		2023	0	0	-0	0	0	0
LGV Personal Other		2037	0	0	-0	0	0	0
LGV Personal Other		Total	0	0	-1	11	0	0
LGV Freight Business		2023	0	0	-4	29	0	0
LGV Freight Business		2037	0	0	-3	30	0	0
LGV Freight Business		Total	0	0	-126	1361	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting		Total	0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other		Total	0	0	0	0	0	0
OGV1 Business		2023	0	0	-0	0	0	0
OGV1 Business		2037	0	0	-0	0	0	0
OGV1 Business		Total	0	0	-3	7	0	0
OGV1 Commuting		2023	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0

OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	1	0	0
OGV2	Business	2037	0	0	-0	1	0	0
OGV2	Business	Total	0	0	-13	58	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	5	0	0
Car	Business	2037	0	0	-0	5	0	0
Car	Business	Total	0	0	-23	233	0	0
Car	Commuting	2023	0	0	-4	86	113	0
Car	Commuting	2037	0	0	-2	105	98	0
Car	Commuting	Total	0	0	-120	4609	4549	0
Car	Other	2023	0	0	-66	77	358	45
Car	Other	2037	0	0	-48	13	200	251

Car	Other	Total	0	0	-2311	1066	10102	9914
LGV Personal Business		2023	0	0	0	0	0	0
LGV Personal Business		2037	0	0	0	0	0	0
LGV Personal Business	Total		0	0	0	0	0	0
LGV Personal Commuting		2023	0	0	0	0	0	0
LGV Personal Commuting		2037	0	0	0	0	0	0
LGV Personal Commuting	Total		0	0	0	0	0	0
LGV Personal Other		2023	0	0	-0	0	0	0
LGV Personal Other		2037	0	0	-0	0	0	0
LGV Personal Other	Total		0	0	-5	12	0	0
LGV Freight Business		2023	0	0	-4	30	0	0
LGV Freight Business		2037	0	0	-3	31	0	0
LGV Freight Business	Total		0	0	-130	1410	0	0
LGV Freight Commuting		2023	0	0	0	0	0	0
LGV Freight Commuting		2037	0	0	0	0	0	0
LGV Freight Commuting	Total		0	0	0	0	0	0
LGV Freight Other		2023	0	0	0	0	0	0
LGV Freight Other		2037	0	0	0	0	0	0
LGV Freight Other	Total		0	0	0	0	0	0
OGV1 Business		2023	0	0	-0	0	0	0
OGV1 Business		2037	0	0	-0	0	0	0
OGV1 Business	Total		0	0	-12	9	0	0
OGV1 Commuting		2023	0	0	0	0	0	0
OGV1 Commuting		2037	0	0	0	0	0	0
OGV1 Commuting	Total		0	0	0	0	0	0

OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	2	0	0
OGV2	Business	2037	0	0	-0	2	0	0
OGV2	Business	Total	0	0	-17	88	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	1	0	0	0	0	0	0
Car	Business	2037	0	1	0	0	0	0	0	0
Car	Business	Total	0	55	0	0	0	0	0	0
Car	Commuting	2023	0	27	0	0	0	0	0	0
Car	Commuting	2037	0	37	0	0	0	0	0	0
Car	Commuting	Total	0	2133	0	0	0	0	0	0
Car	Other	2023	0	122	0	0	0	0	0	0
Car	Other	2037	0	166	0	0	0	0	0	0
Car	Other	Total	0	9625	0	0	0	0	0	0













OGV2	Business	2023	0	2	0	0	0	0	0	0
OGV2	Business	2037	0	2	0	0	0	0	0	0
OGV2	Business	Total	0	71	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 40.89% 51.88%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	8859	8859
Vehicle operating costs	180	180
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>9039</b>	<b>9039</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	18272	18272
Vehicle operating costs	507	507
User charges	0	0
During Construction & Maintenance	0	0
NET CONSUMER - OTHER BENEFITS	18779	18779

Business	All Modes	Road Personal	Road Freight
Travel Time	1471	186	1284
Vehicle operating costs	89	25	65
User charges	0	0	0
During Construction & Maintenance	0	0	0
Subtotal	1560	211	1349

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-255	-255
NET BUSINESS IMPACT	1305	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE) 29123

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
NET IMPACT	738	738

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

Central Government Funding: Non-Transport

Indirect Tax Revenues	413	413
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TOTALS

Broad Transport Budget	3632	3632
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Wider Public Finances	413	413
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	183
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Economic Efficiency: Consumer Users (Commuting)	9039
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Economic Efficiency: Consumer Users (Other)	18779
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Economic Efficiency: Business Users and Providers	1305
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Wider Public Finances (Indirect Taxation Revenues)	-413
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Present Value of Benefits (PVB)	28893
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Broad Transport Budget	3632
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Present Value of Costs (PVC)	3632
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OVERALL IMPACTS

Net Present Value (NPV)	25261
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Benefit to Cost Ratio (BCR) 7.955

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile - 7\_Kirk Hill\_Main\_V4\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Sensitivity\_V4\_15OB\7\_Kirk Hill\_Sensitivity\_Outputs\_V4\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Sensitivity\_V4\_15OB\7\_Kirk Hill\_Sensitivity\_Outputs\_V4\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs



SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-7\_Kirk Hill\_V4.2\_High\_150B

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	803.31	F	119.37	1
C	1	CEN	4085.24	F	119.37	1
L	1	CEN	60.12	F	119.37	1
S	1	CEN	118.9	F	119.37	1
P	1	LOC	149.5	F	119.37	1

C	1	LOC	865.096	F	119.37	1
L	1	LOC	12.7325	F	119.37	1
S	1	LOC	157.468	F	119.37	1
D	1	LOC	399.3835	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	23.50	36.90	0.00	0.00	0.00	0.00	0.00
2021	1	83.20	23.50	63.10	50.00	0.00	0.00	0.00	0.00
2022	1	16.80	35.40	0.00	50.00	0.00	0.00	0.00	0.00
2023	1	0.00	17.60	0.00	0.00	0.00	0.00	0.00	100.00
2024	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2035	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2037	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.532	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	3.668	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2062	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	40.266	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	9.773	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
2	2	1	V	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
3	3	1	V	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
5	5	1	V	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
6	6	1	V	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
7	7	1	V	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DM.txt

8	1	3	V	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
9	2	3	V	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
10	3	3	V	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
11	4	3	V	1	0	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
12	5	3	V	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
13	6	3	V	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
14	7	3	V	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
15	1	2	V	1	0	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
16	2	2	V	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
17	3	2	V	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
18	4	2	V	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
19	5	2	V	1	0	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
20	6	2	V	1	0	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
21	7	2	V	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
22	1	4	V	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
23	2	4	V	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
24	3	4	V	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
25	4	4	V	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
26	5	4	V	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
27	6	4	V	1	0	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
28	7	4	V	1	0	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
29	1	1	V	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
30	2	1	V	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
31	3	1	V	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt

33	5	1	V	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
34	6	1	V	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
35	7	1	V	1	1	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
36	1	3	V	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
37	2	3	V	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
38	3	3	V	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
39	4	3	V	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
40	5	3	V	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
41	6	3	V	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
42	7	3	V	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
43	1	2	V	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
44	2	2	V	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
45	3	2	V	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
46	4	2	V	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
47	5	2	V	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
48	6	2	V	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
49	7	2	V	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
50	1	4	V	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
51	2	4	V	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
52	3	4	V	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
53	4	4	V	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
54	5	4	V	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
55	6	4	V	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
56	7	4	V	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
57	1	1	T	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt



58	2	1	T	1	0	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
59	3	1	T	1	0	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
60	4	1	T	1	0	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
61	5	1	T	1	0	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
62	6	1	T	1	0	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
63	7	1	T	1	0	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
64	1	3	T	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
65	2	3	T	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
66	3	3	T	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
67	4	3	T	1	0	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
68	5	3	T	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
69	6	3	T	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
70	7	3	T	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
71	1	2	T	1	0	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
72	2	2	T	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
73	3	2	T	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
74	4	2	T	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
75	5	2	T	1	0	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
76	6	2	T	1	0	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
77	7	2	T	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
78	1	4	T	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
79	2	4	T	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
80	3	4	T	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
81	4	4	T	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
82	5	4	T	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt

83	6	4	T	1	0	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
84	7	4	T	1	0	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
85	1	1	T	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
86	2	1	T	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
87	3	1	T	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
88	4	1	T	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
89	5	1	T	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
90	6	1	T	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
91	7	1	T	1	1	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
92	1	3	T	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
93	2	3	T	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
94	3	3	T	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
95	4	3	T	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
96	5	3	T	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
97	6	3	T	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
98	7	3	T	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
99	1	2	T	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
100	2	2	T	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
101	3	2	T	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
102	4	2	T	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
103	5	2	T	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
104	6	2	T	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
105	7	2	T	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
106	1	4	T	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
107	2	4	T	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt

108	3	4	T	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
109	4	4	T	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
110	5	4	T	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
111	6	4	T	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
112	7	4	T	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2023_DS.txt
113	1	1	D	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
114	2	1	D	1	0	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
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116	4	1	D	1	0	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
117	5	1	D	1	0	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
118	6	1	D	1	0	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
119	7	1	D	1	0	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DM.txt
120	1	3	D	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
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124	5	3	D	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
125	6	3	D	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
126	7	3	D	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DM.txt
127	1	2	D	1	0	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
128	2	2	D	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
129	3	2	D	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
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133	7	2	D	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DM.txt
134	1	4	D	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
135	2	4	D	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2023_DM.txt
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141	1	1	D	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
142	2	1	D	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
143	3	1	D	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
144	4	1	D	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
145	5	1	D	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
146	6	1	D	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2023_DS.txt
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148	1	3	D	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
149	2	3	D	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
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151	4	3	D	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
152	5	3	D	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
153	6	3	D	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
154	7	3	D	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2023_DS.txt
155	1	2	D	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
156	2	2	D	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DS.txt
157	3	2	D	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2023_DS.txt

158	4	2	D	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_PM_2023_DS.txt
159	5	2	D	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_PM_2023_DS.txt
160	6	2	D	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_PM_2023_DS.txt
161	7	2	D	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_PM_2023_DS.txt
162	1	4	D	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
163	2	4	D	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
164	3	4	D	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
165	4	4	D	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
166	5	4	D	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
167	6	4	D	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
168	7	4	D	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_OP_2023_DS.txt
169	1	1	V	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
170	2	1	V	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
171	3	1	V	1	0	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
173	5	1	V	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
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175	7	1	V	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_AM_2037_DM.txt
176	1	3	V	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_IP_2037_DM.txt
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178	3	3	V	1	0	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_IP_2037_DM.txt
179	4	3	V	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_IP_2037_DM.txt
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182	7	3	V	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\A614_Kirk_Hill_H_V4_IP_2037_DM.txt

183	1	2	V	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
184	2	2	V	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
185	3	2	V	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
186	4	2	V	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
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188	6	2	V	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
189	7	2	V	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
190	1	4	V	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
191	2	4	V	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
192	3	4	V	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
193	4	4	V	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
194	5	4	V	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
195	6	4	V	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
196	7	4	V	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
197	1	1	V	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
198	2	1	V	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
199	3	1	V	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
200	4	1	V	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
201	5	1	V	1	1	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
202	6	1	V	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
203	7	1	V	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
204	1	3	V	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
205	2	3	V	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
206	3	3	V	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
207	4	3	V	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt

208	5	3	V	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
209	6	3	V	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
210	7	3	V	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
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212	2	2	V	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
213	3	2	V	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
214	4	2	V	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
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217	7	2	V	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
218	1	4	V	1	1	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
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221	4	4	V	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
222	5	4	V	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
223	6	4	V	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\V_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
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225	1	1	T	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
226	2	1	T	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
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228	4	1	T	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
229	5	1	T	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
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232	1	3	T	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt

233	2	3	T	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
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235	4	3	T	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
236	5	3	T	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
237	6	3	T	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
238	7	3	T	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
239	1	2	T	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
240	2	2	T	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
241	3	2	T	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
242	4	2	T	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
243	5	2	T	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
244	6	2	T	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
245	7	2	T	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
246	1	4	T	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
247	2	4	T	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
248	3	4	T	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
249	4	4	T	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
250	5	4	T	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
251	6	4	T	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
252	7	4	T	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
253	1	1	T	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
254	2	1	T	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
255	3	1	T	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
256	4	1	T	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
257	5	1	T	1	1	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt



258	6	1	T	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
259	7	1	T	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
260	1	3	T	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
261	2	3	T	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
262	3	3	T	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
263	4	3	T	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
264	5	3	T	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
265	6	3	T	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
266	7	3	T	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
267	1	2	T	1	1	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
268	2	2	T	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
269	3	2	T	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
270	4	2	T	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
271	5	2	T	1	1	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
272	6	2	T	1	1	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
273	7	2	T	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
274	1	4	T	1	1	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
275	2	4	T	1	1	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
276	3	4	T	1	1	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
277	4	4	T	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
278	5	4	T	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
279	6	4	T	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
280	7	4	T	1	1	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\T_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
281	1	1	D	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
282	2	1	D	1	0	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt

283	3	1	D	1	0	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
284	4	1	D	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
285	5	1	D	1	0	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
286	6	1	D	1	0	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
287	7	1	D	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DM.txt
288	1	3	D	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
289	2	3	D	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
290	3	3	D	1	0	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
291	4	3	D	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
292	5	3	D	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
293	6	3	D	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
294	7	3	D	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DM.txt
295	1	2	D	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
296	2	2	D	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
297	3	2	D	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
298	4	2	D	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
299	5	2	D	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
300	6	2	D	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
301	7	2	D	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DM.txt
302	1	4	D	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
303	2	4	D	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
304	3	4	D	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
305	4	4	D	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
306	5	4	D	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
307	6	4	D	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt

308	7	4	D	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DM.txt
309	1	1	D	1	1	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
310	2	1	D	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
311	3	1	D	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
312	4	1	D	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
313	5	1	D	1	1	2037	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
314	6	1	D	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
315	7	1	D	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_AM_2037_DS.txt
316	1	3	D	1	1	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
317	2	3	D	1	1	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
318	3	3	D	1	1	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
319	4	3	D	1	1	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
320	5	3	D	1	1	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
321	6	3	D	1	1	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
322	7	3	D	1	1	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_IP_2037_DS.txt
323	1	2	D	1	1	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
324	2	2	D	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
325	3	2	D	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
326	4	2	D	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
327	5	2	D	1	1	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
328	6	2	D	1	1	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
329	7	2	D	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_PM_2037_DS.txt
330	1	4	D	1	1	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
331	2	4	D	1	1	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
332	3	4	D	1	1	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt

333	4	4	D	1	1	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
334	5	4	D	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
335	6	4	D	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
336	7	4	D	1	1	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_High_V4.2\D_A614_Kirk_Hill_H_V4_OP_2037_DS.txt
337	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
338	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
339	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
340	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
341	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
342	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt
343	7	X	R	1	X	XXXX	1.00000	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs\D_A614_Kirk_Hill_OP_2037_DS.txt

#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:28:35

ERRORS AND WARNINGS

1052 Warnings found in total (including any above)

Warning (7 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	LGV Personal	Other	All	2037	0.000	0.000	0.316	0.440	0.440
1	3	4	OGV1	Business	All	2037	0.000	0.000	0.316	1.685	1.685
1	3	4	LGV Freight	Business	All	2037	0.000	0.000	0.316	3.223	3.223
1	3	4	Car	Business	All	2037	0.000	0.000	0.316	2.486	2.486
1	3	4	Car	Other	All	2037	0.002	0.005	0.316	38.619	38.619
1	3	4	OGV2	Business	All	2037	0.000	0.000	0.316	3.956	3.956
1	3	4	Car	Commuting	All	2037	0.001	0.002	0.316	16.591	16.591
1	3	3	OGV2	Business	All	2023	0.000	0.000	0.434	22.264	22.264
1	3	3	Car	Commuting	All	2023	0.000	0.001	0.434	61.647	61.647
1	3	3	Car	Business	All	2023	0.000	0.001	0.434	39.289	39.289
1	3	3	LGV Personal	Other	All	2023	0.000	0.000	0.434	10.894	10.894
1	3	3	Car	Other	All	2023	0.003	0.007	0.434	445.503	445.503
1	3	3	OGV1	Business	All	2023	0.000	0.000	0.434	10.506	10.506
1	3	3	LGV Freight	Business	All	2023	0.001	0.001	0.434	79.897	79.897
3	1	3	OGV1	Business	All	2023	0.000	0.000	0.477	11.431	11.431

3	1	3	LGV Freight	Business	All	2023	0.001	0.001	0.477	86.933	86.933
3	1	3	LGV Personal	Other	All	2023	0.000	0.000	0.477	11.854	11.854
3	1	3	OGV2	Business	All	2023	0.000	0.000	0.477	24.225	24.225
3	1	3	Car	Commuting	All	2023	0.000	0.001	0.477	67.075	67.075
3	1	3	Car	Business	All	2023	0.000	0.001	0.477	42.749	42.749

Displayed 20 warnings of a total of 56 of this type.

Warning (175 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	3	2	LGV Freight	Business	All	2023	0.018	0.001	17.250	2.783	2.783
2	1	2	LGV Freight	Business	All	2023	0.018	0.001	17.250	13.912	13.912
2	4	2	LGV Freight	Business	All	2023	0.018	0.001	17.250	4.081	4.081
2	3	2	Car	Other	All	2023	0.105	0.006	17.250	16.185	16.185
2	4	2	Car	Commuting	All	2023	0.055	0.003	17.250	12.412	12.412
2	1	2	Car	Other	All	2023	0.105	0.006	17.250	80.926	80.926
2	3	2	LGV Personal	Other	All	2023	0.002	0.000	17.250	0.380	0.380
2	1	2	OGV2	Business	All	2023	0.004	0.000	17.250	3.332	3.332
2	4	2	OGV2	Business	All	2023	0.004	0.000	17.250	0.977	0.977
2	4	2	Car	Other	All	2023	0.105	0.006	17.250	23.738	23.738
2	3	2	OGV2	Business	All	2023	0.004	0.000	17.250	0.666	0.666
2	3	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.196	0.196
2	1	2	Car	Commuting	All	2023	0.055	0.003	17.250	42.312	42.312
2	4	2	LGV Personal	Other	All	2023	0.002	0.000	17.250	0.557	0.557
2	3	2	Car	Commuting	All	2023	0.055	0.003	17.250	8.462	8.462
2	1	2	LGV Personal	Other	All	2023	0.002	0.000	17.250	1.898	1.898

2	1	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.978	0.978
2	4	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.287	0.287
2	4	2	Car	Business	All	2023	0.009	0.000	17.250	1.948	1.948
2	3	2	Car	Business	All	2023	0.009	0.000	17.250	1.328	1.328

Displayed 20 warnings of a total of 224 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	4	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	0.582	10.000
2	1	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	2.087	10.000
2	3	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	0.380	10.000
2	4	2	Car	Commuting	All	2037	0.564	0.066	8.499	12.976	10.000
2	1	2	Car	Commuting	All	2037	0.564	0.066	8.499	46.543	10.000
2	3	2	Car	Commuting	All	2037	0.564	0.066	8.499	8.462	10.000
2	1	2	Car	Business	All	2037	0.089	0.010	8.499	7.306	10.000
2	3	2	Car	Business	All	2037	0.089	0.010	8.499	1.328	10.000
2	4	2	Car	Business	All	2037	0.089	0.010	8.499	2.037	10.000
2	1	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	15.304	10.000
2	3	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	2.783	10.000
2	4	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	4.266	10.000
2	3	2	OGV2	Business	All	2037	0.044	0.005	8.499	0.666	12.000
2	4	2	OGV2	Business	All	2037	0.044	0.005	8.499	1.022	12.000
2	1	2	OGV1	Business	All	2037	0.013	0.002	8.499	1.076	12.000
2	3	2	OGV1	Business	All	2037	0.013	0.002	8.499	0.196	12.000
2	4	2	OGV1	Business	All	2037	0.013	0.002	8.499	0.300	12.000

2	1	2	OGV2	Business	All	2037	0.044	0.005	8.499	3.665	12.000
2	1	2	Car	Other	All	2037	1.079	0.127	8.499	89.019	10.000
2	3	2	Car	Other	All	2037	1.079	0.127	8.499	16.185	10.000

Displayed 20 warnings of a total of 31 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
4	1	4	Car	Other	All	2037	1.153	0.000	7142.857	2.306	130.000
4	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.729	130.000
4	3	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
3	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.153	130.000
4	3	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.248	130.000
4	3	4	Car	Other	All	2023	1.153	0.000	4761.905	0.576	130.000
4	2	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.743	130.000
4	2	4	Car	Other	All	2023	1.153	0.000	4761.905	1.729	130.000
4	1	4	Car	Other	All	2023	1.153	0.000	4761.905	1.729	130.000
4	1	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.743	130.000
4	1	3	Car	Other	All	2037	1.330	0.000	3773.585	29.922	130.000
4	3	3	Car	Other	All	2037	1.330	0.000	3773.585	5.984	130.000
4	2	3	Car	Other	All	2037	1.330	0.000	3773.585	21.943	130.000
3	2	4	Car	Commuting	All	2023	0.495	0.000	3571.428	0.495	130.000
3	2	4	Car	Other	All	2023	1.153	0.000	3571.428	1.153	130.000
4	2	2	Car	Commuting	All	2037	0.564	0.000	3448.276	16.643	130.000
4	2	2	Car	Other	All	2037	1.079	0.000	3448.276	31.831	130.000
4	3	2	Car	Commuting	All	2037	0.564	0.000	3448.276	1.975	130.000



4	1	2	Car	Other	All	2037	1.079	0.000	3448.276	164.011	130.000
4	3	2	Car	Other	All	2037	1.079	0.000	3448.276	3.777	130.000

Displayed 20 warnings of a total of 221 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	CaL_Speed	DS_trips	VOC_Speed
1	4	4	Car	Business	All	2037	0.074	0.000	561.798	0.185	130.000
1	4	4	Car	Commuting	All	2037	0.495	0.001	561.798	1.238	130.000
1	4	4	Car	Other	All	2037	1.153	0.002	561.798	2.882	130.000
1	4	4	OGV2	Business	All	2037	0.118	0.000	561.798	0.295	85.000
1	4	4	LGV Freight	Business	All	2037	0.096	0.000	561.798	0.241	110.000
3	4	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.000	110.000
2	3	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.144	110.000
1	4	4	LGV Freight	Business	All	2023	0.096	0.000	544.959	0.192	110.000
1	4	4	Car	Business	All	2023	0.074	0.000	544.959	0.148	130.000
2	3	4	Car	Business	All	2037	0.074	0.000	544.959	0.111	130.000
2	4	4	Car	Business	All	2037	0.074	0.000	544.959	0.111	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	544.959	0.000	130.000
2	1	4	Car	Business	All	2037	0.074	0.000	544.959	0.223	130.000
2	1	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.289	110.000
2	4	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.144	110.000
1	4	4	Car	Commuting	All	2023	0.495	0.001	544.959	0.990	130.000
2	1	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.354	85.000
2	3	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.177	85.000
2	4	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.177	85.000

3 4 4 OGV2 Business All 2037 0.118 0.000 544.959 0.000 85.000

Displayed 20 warnings of a total of 324 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin Destination Time\_slice Veh\_type Purpose Person\_type Year DM\_time DS\_time

3	2	1	Car	Business	All	2023	0.000	0.000
4	1	1	Car	Business	All	2023	0.000	0.000
4	2	1	Car	Business	All	2023	0.000	0.000
4	3	1	Car	Business	All	2023	0.000	0.000
3	2	1	Car	Business	All	2037	0.000	0.000
4	1	1	Car	Business	All	2037	0.000	0.000
4	2	1	Car	Business	All	2037	0.000	0.000
4	3	1	Car	Business	All	2037	0.000	0.000
3	2	1	Car	Commuting	All	2023	0.000	0.000
4	1	1	Car	Commuting	All	2023	0.000	0.000
4	2	1	Car	Commuting	All	2023	0.000	0.000
4	3	1	Car	Commuting	All	2023	0.000	0.000
3	2	1	Car	Commuting	All	2037	0.000	0.000
4	1	1	Car	Commuting	All	2037	0.000	0.000
4	2	1	Car	Commuting	All	2037	0.000	0.000
4	3	1	Car	Commuting	All	2037	0.000	0.000
3	2	1	Car	Other	All	2023	0.001	0.000
4	1	1	Car	Other	All	2023	0.000	0.000
4	2	1	Car	Other	All	2023	0.000	0.000
4	3	1	Car	Other	All	2023	0.000	0.000

Displayed 20 warnings of a total of 196 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-7\_Kirk Hill\_V4.2\_High\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.2\_High\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750



Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0

Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0
Road	2021	94	138	4106	17	0	0	0	0

Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	0	398
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0
Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0
Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0
Road	2046	0	0	0	0	2	0	0	0

Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0



Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0
Road	2081	0	0	0	0	2	0	0	0
Road	2082	0	0	0	0	2	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	51	51
Road	2021	0	2983	2983
Road	2022	0	657	657
Road	2023	0	8	8
Road	2024	0	1	1
Road	2025	0	1	1
Road	2026	0	1	1
Road	2027	0	1	1
Road	2028	0	6	6
Road	2029	0	1	1

Road	2030	0	1	1
Road	2031	0	1	1
Road	2032	0	1	1
Road	2033	0	19	19
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	4	4
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10
Road	2054	0	0	0

Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0

Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1546	1546
Car	2023	PM peak	1931	1931
Car	2023	Inter-peak	4212	4212
Car	2023	Off-peak	562	562
Car	2023	All	8250	8250
Car	2037	AM peak	1745	1745
Car	2037	PM peak	2086	2086
Car	2037	Inter-peak	4852	4852
Car	2037	Off-peak	646	646
Car	2037	All	9329	9329
LGV Personal	2023	AM peak	28	28
LGV Personal	2023	PM peak	28	28
LGV Personal	2023	Inter-peak	84	84
LGV Personal	2023	Off-peak	4	4
LGV Personal	2023	All	144	144
LGV Personal	2037	AM peak	32	32
LGV Personal	2037	PM peak	30	30

LGV Personal	2037	Inter-peak	97	97
LGV Personal	2037	Off-peak	5	5
LGV Personal	2037	All	164	164
LGV Freight	2023	AM peak	205	205
LGV Freight	2023	PM peak	207	207
LGV Freight	2023	Inter-peak	616	616
LGV Freight	2023	Off-peak	31	31
LGV Freight	2023	All	1059	1059
LGV Freight	2037	AM peak	231	231
LGV Freight	2037	PM peak	223	223
LGV Freight	2037	Inter-peak	709	709
LGV Freight	2037	Off-peak	36	36
LGV Freight	2037	All	1200	1200
OGV1	2023	AM peak	15	15
OGV1	2023	PM peak	15	15
OGV1	2023	Inter-peak	81	81
OGV1	2023	Off-peak	16	16
OGV1	2023	All	127	127
OGV1	2037	AM peak	17	17
OGV1	2037	PM peak	16	16
OGV1	2037	Inter-peak	93	93
OGV1	2037	Off-peak	19	19
OGV1	2037	All	145	145
OGV2	2023	AM peak	26	26
OGV2	2023	PM peak	50	50

OGV2	2023	Inter-peak	172	172
OGV2	2023	Off-peak	39	39
OGV2	2023	All	286	286
OGV2	2037	AM peak	30	30
OGV2	2037	PM peak	54	54
OGV2	2037	Inter-peak	198	198
OGV2	2037	Off-peak	44	44
OGV2	2037	All	325	325
All	2023	AM peak	1820	1820
All	2023	PM peak	2230	2230
All	2023	Inter-peak	5164	5164
All	2023	Off-peak	652	652
All	2023	All	9866	9866
All	2037	AM peak	2055	2055
All	2037	PM peak	2409	2409
All	2037	Inter-peak	5949	5949
All	2037	Off-peak	750	750
All	2037	All	11163	11163

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	698	0	385	256	373	0	357	255
Road	2037	892	0	219	180	430	0	184	179

FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	263	243	37	241	227	36
Car	2037	223	154	322	183	128	302
LGV Personal	2023	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0
LGV Freight	2023	0	21	0	0	21	0
LGV Freight	2037	0	19	9	0	17	9
OGV1	2023	0	0	0	0	1	0
OGV1	2037	0	0	0	0	1	0
OGV2	2023	0	6	0	0	5	0
OGV2	2037	0	6	0	0	6	0
All	2023	263	271	37	241	254	36
All	2037	223	180	331	184	151	311
Car	Total	11568	8184	24687	9682	6958	23141
LGV Personal	Total	0	12	10	0	16	14
LGV Freight	Total	8	1069	827	7	945	826
OGV1	Total	0	24	0	0	36	0
OGV2	Total	0	373	0	0	339	0
All	Total	11577	9662	25524	9689	8294	23981

CO2\_EMISSIONS\_UNTRADED

Emissions (tonnes)      cost (£000s, low)      cost (£000s, central)      cost (£000s, high)

Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1133	1048	-86	23	21	-2	46	42	-3	69	63	-5
Car	2037	835	690	-145	19	16	-3	38	31	-7	57	47	-10
LGV Personal	2023	0	1	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	1	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	53	51	-2	1	1	-0	2	2	-0	3	3	-0
LGV Freight	2037	47	41	-6	1	1	-0	2	2	-0	3	3	-0
OGV1	2023	1	1	1	0	0	0	0	0	0	0	0	0
OGV1	2037	1	1	0	0	0	0	0	0	0	0	0	0
OGV2	2023	13	12	-1	0	0	-0	1	1	-0	1	1	-0
OGV2	2037	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2023	1200	1113	-88	24	22	-2	49	45	-4	73	67	-5
All	2024	1179	1084	-95	23	22	-2	47	43	-4	70	65	-6
All	2025	1152	1051	-102	23	21	-2	45	41	-4	68	62	-6
All	2026	1129	1021	-108	21	19	-2	43	39	-4	64	58	-6
All	2027	1105	991	-114	21	19	-2	41	37	-4	62	56	-6
All	2028	1078	959	-119	20	17	-2	40	35	-4	59	53	-7
All	2029	1055	931	-124	19	17	-2	38	34	-4	57	51	-7
All	2030	1032	903	-128	18	16	-2	36	32	-5	55	48	-7
All	2031	1006	874	-132	19	16	-2	37	32	-5	56	49	-7
All	2032	986	850	-136	19	17	-3	39	33	-5	58	50	-8
All	2033	968	828	-140	20	17	-3	39	34	-6	59	51	-9
All	2034	947	804	-143	20	17	-3	40	34	-6	60	51	-9
All	2035	931	785	-146	20	17	-3	40	34	-6	61	51	-10
All	2036	916	767	-149	21	17	-3	41	34	-7	62	51	-10



All	2037	899	747	-152	21	17	-3	41	34	-7	62	51	-10
All	2038	879	730	-149	20	17	-3	41	34	-7	61	51	-10
All	2039	860	715	-145	20	17	-3	41	34	-7	61	51	-10
All	2040	839	697	-142	20	17	-3	41	34	-7	61	50	-10
All	2041	820	682	-138	20	17	-3	40	33	-7	60	50	-10
All	2042	803	667	-135	20	16	-3	40	33	-7	59	49	-10
All	2043	783	651	-132	19	16	-3	39	32	-7	59	49	-10
All	2044	767	638	-129	19	16	-3	38	32	-6	58	48	-10
All	2045	753	626	-127	19	16	-3	38	31	-6	57	47	-10
All	2046	736	612	-124	19	15	-3	37	31	-6	56	46	-9
All	2047	722	600	-122	18	15	-3	37	30	-6	55	46	-9
All	2048	709	589	-119	18	15	-3	36	30	-6	54	45	-9
All	2049	693	576	-117	18	15	-3	35	29	-6	53	44	-9
All	2050	679	565	-114	17	14	-3	34	29	-6	52	43	-9
All	2051	679	565	-114	17	14	-3	35	29	-6	52	43	-9
All	2052	679	565	-114	17	14	-3	35	29	-6	52	44	-9
All	2053	679	565	-114	17	14	-3	35	29	-6	53	44	-9
All	2054	679	565	-114	17	14	-3	35	29	-6	53	44	-9
All	2055	679	565	-114	17	14	-3	35	29	-6	53	44	-9
All	2056	679	565	-114	16	14	-3	35	29	-6	53	44	-9
All	2057	679	565	-114	16	13	-3	35	29	-6	53	44	-9
All	2058	679	565	-114	16	13	-3	34	29	-6	53	44	-9
All	2059	679	565	-114	16	13	-3	34	29	-6	53	44	-9
All	2060	679	565	-114	15	13	-3	34	28	-6	53	44	-9
All	2061	679	565	-114	15	12	-3	34	28	-6	52	44	-9

All	2062	679	565	-114	15	12	-2	33	28	-6	52	43	-9
All	2063	679	565	-114	14	12	-2	33	27	-6	51	43	-9
All	2064	679	565	-114	14	12	-2	32	27	-5	51	42	-9
All	2065	679	565	-114	13	11	-2	32	26	-5	50	42	-8
All	2066	679	565	-114	13	11	-2	31	26	-5	49	41	-8
All	2067	679	565	-114	13	11	-2	31	26	-5	49	40	-8
All	2068	679	565	-114	12	10	-2	30	25	-5	48	40	-8
All	2069	679	565	-114	12	10	-2	29	24	-5	47	39	-8
All	2070	679	565	-114	11	10	-2	29	24	-5	46	38	-8
All	2071	679	565	-114	11	9	-2	28	23	-5	45	37	-8
All	2072	679	565	-114	11	9	-2	27	23	-5	44	37	-7
All	2073	679	565	-114	10	9	-2	27	22	-4	43	36	-7
All	2074	679	565	-114	10	8	-2	26	22	-4	42	35	-7
All	2075	679	565	-114	9	8	-2	25	21	-4	41	34	-7
All	2076	679	565	-114	9	8	-2	25	20	-4	40	33	-7
All	2077	679	565	-114	9	7	-1	24	20	-4	39	32	-7
All	2078	679	565	-114	8	7	-1	23	19	-4	38	32	-6
All	2079	679	565	-114	8	7	-1	22	19	-4	37	31	-6
All	2080	679	565	-114	8	6	-1	22	18	-4	36	30	-6
All	2081	679	565	-114	7	6	-1	21	18	-4	35	29	-6
All	2082	679	565	-114	7	6	-1	20	17	-3	34	28	-6
Car	Total	43764	36889	-6875	887	747	-140	1906	1603	-303	2925	2459	-466
LGV Personal	Total	30	38	8	1	1	0	1	2	0	2	3	1
LGV Freight	Total	2605	2302	-302	53	47	-6	114	101	-13	176	155	-21
OGV1	Total	57	87	30	1	2	1	3	4	1	4	6	2

OGV2	Total	903	820	-83	18	17	-2	40	36	-4	61	56	-6
All	Total	47358	40137	-7222	960	813	-147	2063	1745	-318	3168	2678	-490

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	9	9	-0	0	0	-0	0	0	-0	0	0	-0
Car	2037	19	17	-1	0	0	-0	1	1	-0	1	1	-0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	10	9	-0	0	0	-0	0	0	-0	0	0	-0
All	2024	12	11	-0	0	0	-0	0	0	-0	0	0	-0
All	2025	14	14	-1	0	0	-0	0	0	-0	1	1	-0
All	2026	17	16	-1	0	0	-0	0	0	-0	1	1	-0
All	2027	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2028	21	20	-1	0	0	-0	1	1	-0	1	1	-0
All	2029	22	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2030	22	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2031	22	21	-1	0	0	-0	1	1	-0	1	1	-0

All	2032	22	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2033	22	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2034	22	20	-1	0	0	-0	1	1	-0	1	1	-0
All	2035	21	20	-1	0	0	-0	1	1	-0	1	1	-0
All	2036	20	19	-1	0	0	-0	1	1	-0	1	1	-0
All	2037	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2038	18	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2039	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2040	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2041	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2042	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2043	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2044	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2045	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2046	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2047	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2048	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2049	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2050	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2051	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2052	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2053	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2054	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2055	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2056	15	14	-1	0	0	-0	1	1	-0	1	1	-0

All	2057	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2058	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2059	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2060	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2061	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2062	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2063	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2064	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2065	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2066	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2067	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2068	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2069	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2070	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2071	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2072	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2073	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2074	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2075	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2076	15	14	-1	0	0	-0	1	0	-0	1	1	-0
All	2077	15	14	-1	0	0	-0	1	0	-0	1	1	-0
All	2078	15	14	-1	0	0	-0	1	0	-0	1	1	-0
All	2079	15	14	-1	0	0	-0	0	0	-0	1	1	-0
All	2080	15	14	-1	0	0	-0	0	0	-0	1	1	-0
All	2081	15	14	-1	0	0	-0	0	0	-0	1	1	-0

All	2082	15	14	-1	0	0	-0	0	0	-0	1	1	-0
Car	Total	934	878	-56	19	18	-1	40	37	-2	61	58	-4
LGV Personal	Total	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	29	29	-0	1	1	-0	1	1	-0	2	2	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	963	908	-56	20	18	-1	41	39	-2	63	60	-4

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	178	152	-26	4	3	-1	7	6	-1	11	9	-2
AM peak	2037	148	107	-40	3	2	-1	7	5	-2	10	7	-3
PM peak	2023	258	183	-75	5	4	-2	10	7	-3	16	11	-5
PM peak	2037	199	127	-72	5	3	-2	9	6	-3	14	9	-5
Inter-peak	2023	694	713	19	14	14	0	28	29	1	42	43	1
Inter-peak	2037	497	461	-36	11	11	-1	23	21	-2	34	32	-2
Off-peak	2023	71	66	-5	1	1	-0	3	3	-0	4	4	-0
Off-peak	2037	55	51	-4	1	1	-0	2	2	-0	4	3	-0
AM peak	Total	7641	5713	-1928	155	116	-39	334	249	-85	512	382	-131
PM peak	Total	10427	6776	-3651	211	137	-74	455	295	-160	698	452	-245
Inter-peak	Total	26413	24968	-1445	535	506	-30	1150	1085	-65	1765	1664	-101
Off-peak	Total	2876	2679	-197	58	54	-4	125	117	-9	193	179	-13

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	2037	3	3	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	4	3	-0	0	0	-0	0	0	-0	0	0	-0
Inter-peak	2023	6	6	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	11	11	-1	0	0	-0	1	0	-0	1	1	-0
Off-peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
Off-peak	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	Total	143	135	-8	3	3	-0	6	6	-0	9	9	-1
PM peak	Total	189	171	-19	4	3	-0	8	7	-1	12	11	-1
Inter-peak	Total	571	545	-25	12	11	-1	24	23	-1	38	36	-2
Off-peak	Total	60	57	-3	1	1	-0	3	2	-0	4	4	-0

#### MODE

User benefits and changes in revenues by mode, all years. E000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	325	0	28	1	0	-16
Road	2024	336	0	30	1	0	-17
Road	2025	347	0	31	1	0	-18
Road	2026	358	0	33	1	0	-18
Road	2027	369	0	33	1	0	-19
Road	2028	380	0	34	1	0	-19
Road	2029	390	0	35	1	0	-19
Road	2030	400	0	35	1	0	-19
Road	2031	410	0	35	1	0	-19
Road	2032	420	0	36	1	0	-20
Road	2033	429	0	36	1	0	-20
Road	2034	437	0	35	1	0	-19
Road	2035	446	0	35	1	0	-19
Road	2036	454	0	35	1	0	-19
Road	2037	462	0	35	1	0	-19
Road	2038	455	0	33	1	0	-18
Road	2039	449	0	32	1	0	-17
Road	2040	442	0	30	1	0	-16
Road	2041	435	0	28	1	0	-16
Road	2042	429	0	27	1	0	-15
Road	2043	422	0	26	1	0	-14
Road	2044	416	0	24	1	0	-13
Road	2045	409	0	23	1	0	-13
Road	2046	403	0	22	1	0	-12



Road	2047	397	0	21	1	0	-12
Road	2048	391	0	20	1	0	-11
Road	2049	384	0	19	1	0	-10
Road	2050	378	0	18	1	0	-10
Road	2051	375	0	18	1	0	-10
Road	2052	371	0	17	1	0	-10
Road	2053	367	0	17	1	0	-9
Road	2054	364	0	17	1	0	-9
Road	2055	360	0	16	1	0	-9
Road	2056	356	0	16	1	0	-9
Road	2057	353	0	15	1	0	-9
Road	2058	349	0	15	1	0	-8
Road	2059	346	0	15	1	0	-8
Road	2060	342	0	14	1	0	-8
Road	2061	339	0	14	1	0	-8
Road	2062	336	0	13	1	0	-8
Road	2063	333	0	13	0	0	-7
Road	2064	330	0	13	0	0	-7
Road	2065	327	0	12	0	0	-7
Road	2066	324	0	12	0	0	-7
Road	2067	322	0	12	0	0	-7
Road	2068	319	0	12	0	0	-7
Road	2069	316	0	11	0	0	-6
Road	2070	313	0	11	0	0	-6
Road	2071	311	0	11	0	0	-6

Road	2072	308	0	10	0	0	-6
Road	2073	305	0	10	0	0	-6
Road	2074	303	0	10	0	0	-6
Road	2075	300	0	10	0	0	-6
Road	2076	297	0	9	0	0	-6
Road	2077	295	0	9	0	0	-5
Road	2078	292	0	9	0	0	-5
Road	2079	290	0	9	0	0	-5
Road	2080	287	0	8	0	0	-5
Road	2081	285	0	8	0	0	-5
Road	2082	282	0	8	0	0	-5
Road	Total	21772	0	1225	43	0	-684

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	310	0	28	0	0	-16
Car	2037	439	0	33	0	0	-18
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	15	0	1	0	0	-0
LGV Freight	2037	22	0	1	1	0	-1
OGV1	2023	0	0	-0	0	0	0
OGV1	2037	0	0	-0	0	0	0

OGV2	2023	0	0	0	0	0	-0
OGV2	2037	1	0	0	0	0	-0
All	2023	325	0	28	1	0	-16
All	2037	462	0	35	1	0	-19
Car	Total	20694	0	1177	16	0	-656
LGV Personal	Total	9	0	-2	0	0	1
LGV Freight	Total	1041	0	43	21	0	-25
OGV1	Total	3	0	-5	0	0	3
OGV2	Total	26	0	12	6	0	-7
All	Total	21772	0	1225	43	0	-684

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	325	0	28	1	0	-16
All	2037	462	0	35	1	0	-19
All	Total	21772	0	1225	43	0	-684

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	18	0	1	1	0	-0
Business	2037	26	0	2	1	0	-1

Commuting	2023	116	0	8	0	0	-4
Commuting	2037	162	0	6	0	0	-3
Other	2023	192	0	20	0	0	-11
Other	2037	273	0	27	0	0	-15
Business	Total	1233	0	54	43	0	-32
Commuting	Total	7664	0	234	0	0	-133
Other	Total	12875	0	937	0	0	-519

PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	140	0	8	1	0	-5
AM peak	2037	229	0	9	1	0	-5
PM peak	2023	243	0	24	1	0	-14
PM peak	2037	291	0	16	1	0	-9
Inter-peak	2023	-54	0	-6	-0	0	3
Inter-peak	2037	-53	0	9	-0	0	-4
Off-peak	2023	-4	0	2	-0	0	-1
Off-peak	2037	-5	0	1	-0	0	-0
AM peak	Total	10655	0	324	27	0	-185
PM peak	Total	13979	0	638	25	0	-362
Inter-peak	Total	-2608	0	226	-8	0	-116
Off-peak	Total	-254	0	38	-1	0	-20

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	0
Car	Business	2037	0	0	-0	1	0	0
Car	Business	Total	0	0	-10	51	0	0
Car	Commuting	2023	0	0	-2	15	2	0
Car	Commuting	2037	0	0	-3	1	30	0
Car	Commuting	Total	0	0	-159	152	1596	0
Car	Other	2023	0	0	-27	5	65	14
Car	Other	2037	0	0	-34	5	110	22
Car	Other	Total	0	0	-2004	312	6272	1268
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	5	0	0
LGV Freight	Business	2023	0	0	-1	2	0	0
LGV Freight	Business	2037	0	0	-1	4	0	0
LGV Freight	Business	Total	0	0	-42	214	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0

LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-1	1	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-3	7	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	3	0	0
Car	Business	2037	0	0	-1	4	0	0
Car	Business	Total	0	0	-40	203	0	0
Car	Commuting	2023	0	0	-14	111	18	0
Car	Commuting	2037	0	0	-16	4	174	0
Car	Commuting	Total	0	0	-773	951	7486	0
Car	Other	2023	0	0	-91	18	217	48
Car	Other	2037	0	0	-91	14	292	59
Car	Other	Total	0	0	-4464	703	13823	2804
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-2	11	0	0
LGV Freight	Business	2023	0	0	-5	20	0	0
LGV Freight	Business	2037	0	0	-5	27	0	0
LGV Freight	Business	Total	0	0	-259	1300	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0

LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-4	7	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	1	0	0
OGV2	Business	2037	0	0	-0	1	0	0
OGV2	Business	Total	0	0	-20	46	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving



Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	4	0	0
Car	Business	2037	0	0	-1	5	0	0
Car	Business	Total	0	0	-43	227	0	0
Car	Commuting	2023	0	0	-13	117	19	0
Car	Commuting	2037	0	0	-16	6	179	0
Car	Commuting	Total	0	0	-755	1027	7626	0
Car	Other	2023	0	0	-88	22	228	50
Car	Other	2037	0	0	-87	24	303	60
Car	Other	Total	0	0	-4344	1049	14235	2866
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-4	11	0	0
LGV Freight	Business	2023	0	0	-5	21	0	0
LGV Freight	Business	2037	0	0	-5	29	0	0
LGV Freight	Business	Total	0	0	-236	1341	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0

LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-10	9	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	1	0	0
OGV2	Business	2037	0	0	-1	2	0	0
OGV2	Business	Total	0	0	-26	70	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	0	0	0	0	0
OGV1	Business	2037	0	0	0	0	0	0	0	0
OGV1	Business	Total	0	0	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	4	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	2	0	0	0	0	0	0



LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	0	0	0	0	0	0	0
OGV1	Business	2037	0	0	0	0	0	0	0	0
OGV1	Business	Total	0	3	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	26	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	3	0	0	0	0	0	0
Car	Business	2037	0	4	0	0	0	0	0	0



OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-1	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	43	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 26.47% 38.59%



Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	7664	7664
Vehicle operating costs	234	234
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>7898</b>	<b>7898</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	12875	12875
Vehicle operating costs	937	937
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>13812</b>	<b>13812</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	1233	163	1070
Vehicle operating costs	97	20	77
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>1331</b>	<b>183</b>	<b>1147</b>

Private Sector Provider Impacts

Revenue	0	0
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Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-255	-255
NET BUSINESS IMPACT	1076	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	22786
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
NET IMPACT	738	738

Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

Central Government Funding: Non-Transport

Indirect Tax Revenues	684	684
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TOTALS

Broad Transport Budget	3632	3632
Wider Public Finances	684	684

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	318
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Economic Efficiency: Consumer Users (Commuting)	7898
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Economic Efficiency: Consumer Users (Other)	13812
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Economic Efficiency: Business Users and Providers	1076
Wider Public Finances (Indirect Taxation Revenues)	-684
Present Value of Benefits (PVB)	22420
Broad Transport Budget	3632
Present Value of Costs (PVC)	3632
OVERALL IMPACTS	
Net Present Value (NPV)	18788
Benefit to Cost Ratio (BCR)	6.173

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4.2\_High\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.2\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_High\_V4.2\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.2\_High\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_High\_V4.2\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.2\_High\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

ERRORS AND WARNINGS

1052 Warnings found in total (including any above)

Warning (7 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	LGV Personal Other	All	2037	0.000	0.000	0.316	0.440	0.440	
1	3	4	OGV1 Business	All	2037	0.000	0.000	0.316	1.685	1.685	
1	3	4	LGV Freight Business	All	2037	0.000	0.000	0.316	3.223	3.223	
1	3	4	Car Business	All	2037	0.000	0.000	0.316	2.486	2.486	
1	3	4	Car Other	All	2037	0.002	0.005	0.316	38.619	38.619	
1	3	4	OGV2 Business	All	2037	0.000	0.000	0.316	3.956	3.956	
1	3	4	Car Commuting	All	2037	0.001	0.002	0.316	16.591	16.591	
1	3	3	OGV2 Business	All	2023	0.000	0.000	0.434	22.264	22.264	
1	3	3	Car Commuting	All	2023	0.000	0.001	0.434	61.647	61.647	
1	3	3	Car Business	All	2023	0.000	0.001	0.434	39.289	39.289	
1	3	3	LGV Personal Other	All	2023	0.000	0.000	0.434	10.894	10.894	
1	3	3	Car Other	All	2023	0.003	0.007	0.434	445.503	445.503	
1	3	3	OGV1 Business	All	2023	0.000	0.000	0.434	10.506	10.506	
1	3	3	LGV Freight Business	All	2023	0.001	0.001	0.434	79.897	79.897	
3	1	3	OGV1 Business	All	2023	0.000	0.000	0.477	11.431	11.431	
3	1	3	LGV Freight Business	All	2023	0.001	0.001	0.477	86.933	86.933	
3	1	3	LGV Personal Other	All	2023	0.000	0.000	0.477	11.854	11.854	
3	1	3	OGV2 Business	All	2023	0.000	0.000	0.477	24.225	24.225	
3	1	3	Car Commuting	All	2023	0.000	0.001	0.477	67.075	67.075	
3	1	3	Car Business	All	2023	0.000	0.001	0.477	42.749	42.749	

Displayed 20 warnings of a total of 56 of this type.

Warning (175 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	3	2	LGV Freight Business	All	2023	0.018	0.001	17.250	2.783	2.783	
2	1	2	LGV Freight Business	All	2023	0.018	0.001	17.250	13.912	13.912	
2	4	2	LGV Freight Business	All	2023	0.018	0.001	17.250	4.081	4.081	
2	3	2	Car Other	All	2023	0.105	0.006	17.250	16.185	16.185	
2	4	2	Car Commuting	All	2023	0.055	0.003	17.250	12.412	12.412	
2	1	2	Car Other	All	2023	0.105	0.006	17.250	80.926	80.926	
2	3	2	LGV Personal Other	All	2023	0.002	0.000	17.250	0.380	0.380	
2	1	2	OGV2 Business	All	2023	0.004	0.000	17.250	3.332	3.332	
2	4	2	OGV2 Business	All	2023	0.004	0.000	17.250	0.977	0.977	
2	4	2	Car Other	All	2023	0.105	0.006	17.250	23.738	23.738	

2	3	2	OGV2	Business	All	2023	0.004	0.000	17.250	0.666	0.666
2	3	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.196	0.196
2	1	2	Car	Commuting	All	2023	0.055	0.003	17.250	42.312	42.312
2	4	2	LGV Personal	Other	All	2023	0.002	0.000	17.250	0.557	0.557
2	3	2	Car	Commuting	All	2023	0.055	0.003	17.250	8.462	8.462
2	1	2	LGV Personal	Other	All	2023	0.002	0.000	17.250	1.898	1.898
2	1	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.978	0.978
2	4	2	OGV1	Business	All	2023	0.001	0.000	17.250	0.287	0.287
2	4	2	Car	Business	All	2023	0.009	0.000	17.250	1.948	1.948
2	3	2	Car	Business	All	2023	0.009	0.000	17.250	1.328	1.328

Displayed 20 warnings of a total of 224 of this type.

Warning: DM speeds less than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
2	4	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	0.582	10.000
2	1	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	2.087	10.000
2	3	2	LGV Personal	Other	All	2037	0.025	0.003	8.499	0.380	10.000
2	4	2	Car	Commuting	All	2037	0.564	0.066	8.499	12.976	10.000
2	1	2	Car	Commuting	All	2037	0.564	0.066	8.499	46.543	10.000
2	3	2	Car	Commuting	All	2037	0.564	0.066	8.499	8.462	10.000
2	1	2	Car	Business	All	2037	0.089	0.010	8.499	7.306	10.000
2	3	2	Car	Business	All	2037	0.089	0.010	8.499	1.328	10.000
2	4	2	Car	Business	All	2037	0.089	0.010	8.499	2.037	10.000
2	1	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	15.304	10.000
2	3	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	2.783	10.000
2	4	2	LGV Freight	Business	All	2037	0.185	0.022	8.499	4.266	10.000
2	3	2	OGV2	Business	All	2037	0.044	0.005	8.499	0.666	12.000
2	4	2	OGV2	Business	All	2037	0.044	0.005	8.499	1.022	12.000
2	1	2	OGV1	Business	All	2037	0.013	0.002	8.499	1.076	12.000
2	3	2	OGV1	Business	All	2037	0.013	0.002	8.499	0.196	12.000
2	4	2	OGV1	Business	All	2037	0.013	0.002	8.499	0.300	12.000
2	1	2	OGV2	Business	All	2037	0.044	0.005	8.499	3.665	12.000
2	1	2	Car	Other	All	2037	1.079	0.127	8.499	89.019	10.000
2	3	2	Car	Other	All	2037	1.079	0.127	8.499	16.185	10.000

Displayed 20 warnings of a total of 31 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
4	1	4	Car	Other	All	2037	1.153	0.000	7142.857	2.306	130.000
4	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.729	130.000
4	3	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
3	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.153	130.000
4	3	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.248	130.000
4	3	4	Car	Other	All	2023	1.153	0.000	4761.905	0.576	130.000

4	2	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.743	130.000
4	2	4	Car	Other	All	2023	1.153	0.000	4761.905	1.729	130.000
4	1	4	Car	Other	All	2023	1.153	0.000	4761.905	1.729	130.000
4	1	4	Car	Commuting	All	2023	0.495	0.000	4761.905	0.743	130.000
4	1	3	Car	Other	All	2037	1.330	0.000	3773.585	29.922	130.000
4	3	3	Car	Other	All	2037	1.330	0.000	3773.585	5.984	130.000
4	2	3	Car	Other	All	2037	1.330	0.000	3773.585	21.943	130.000
3	2	4	Car	Commuting	All	2023	0.495	0.000	3571.428	0.495	130.000
3	2	4	Car	Other	All	2023	1.153	0.000	3571.428	1.153	130.000
4	2	2	Car	Commuting	All	2037	0.564	0.000	3448.276	16.643	130.000
4	2	2	Car	Other	All	2037	1.079	0.000	3448.276	31.831	130.000
4	3	2	Car	Commuting	All	2037	0.564	0.000	3448.276	1.975	130.000
4	1	2	Car	Other	All	2037	1.079	0.000	3448.276	164.011	130.000
4	3	2	Car	Other	All	2037	1.079	0.000	3448.276	3.777	130.000

Displayed 20 warnings of a total of 221 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Cal_Speed	DS_trips	VOC_Speed
1	4	4	Car	Business	All	2037	0.074	0.000	561.798	0.185	130.000
1	4	4	Car	Commuting	All	2037	0.495	0.001	561.798	1.238	130.000
1	4	4	Car	Other	All	2037	1.153	0.002	561.798	2.882	130.000
1	4	4	OGV2	Business	All	2037	0.118	0.000	561.798	0.295	85.000
1	4	4	LGV Freight	Business	All	2037	0.096	0.000	561.798	0.241	110.000
3	4	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.000	110.000
2	3	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.144	110.000
1	4	4	LGV Freight	Business	All	2023	0.096	0.000	544.959	0.192	110.000
1	4	4	Car	Business	All	2023	0.074	0.000	544.959	0.148	130.000
2	3	4	Car	Business	All	2037	0.074	0.000	544.959	0.111	130.000
2	4	4	Car	Business	All	2037	0.074	0.000	544.959	0.111	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	544.959	0.000	130.000
2	1	4	Car	Business	All	2037	0.074	0.000	544.959	0.223	130.000
2	1	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.289	110.000
2	4	4	LGV Freight	Business	All	2037	0.096	0.000	544.959	0.144	110.000
1	4	4	Car	Commuting	All	2023	0.495	0.001	544.959	0.990	130.000
2	1	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.354	85.000
2	3	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.177	85.000
2	4	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.177	85.000
3	4	4	OGV2	Business	All	2037	0.118	0.000	544.959	0.000	85.000

Displayed 20 warnings of a total of 324 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
3	2	1	Car	Business	All	2023	0.000	0.000
4	1	1	Car	Business	All	2023	0.000	0.000



4	2	1	Car	Business	All	2023	0.000	0.000
4	3	1	Car	Business	All	2023	0.000	0.000
3	2	1	Car	Business	All	2037	0.000	0.000
4	1	1	Car	Business	All	2037	0.000	0.000
4	2	1	Car	Business	All	2037	0.000	0.000
4	3	1	Car	Business	All	2037	0.000	0.000
3	2	1	Car	Commuting	All	2023	0.000	0.000
4	1	1	Car	Commuting	All	2023	0.000	0.000
4	2	1	Car	Commuting	All	2023	0.000	0.000
4	3	1	Car	Commuting	All	2023	0.000	0.000
3	2	1	Car	Commuting	All	2037	0.000	0.000
4	1	1	Car	Commuting	All	2037	0.000	0.000
4	2	1	Car	Commuting	All	2037	0.000	0.000
4	3	1	Car	Commuting	All	2037	0.000	0.000
3	2	1	Car	Other	All	2023	0.001	0.000
4	1	1	Car	Other	All	2023	0.000	0.000
4	2	1	Car	Other	All	2023	0.000	0.000
4	3	1	Car	Other	All	2023	0.000	0.000

Displayed 20 warnings of a total of 196 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463

2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332
2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500

2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500
2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

\*Start\_yr End\_yr VOT\_Gr\_purpose1 VOT\_Gr\_purpose2 VOT\_Gr\_purpose3 ..

2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107

2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881
2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137

2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105
2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352

2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000
2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000

2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000
2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004

2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000
2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000



2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000
2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438

2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000

2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_ylr	End_ylr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000
2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000

2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000
2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000

2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000
2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000

2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000
2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000

2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038



2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000

2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049
2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222

2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172
2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603

2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635
2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116

2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

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*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222

2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000
2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349

2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850
2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114

2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130	10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130	10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120	10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10



4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000
2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518

2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340
2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029

2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324
2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960

2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389
2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351

2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019
2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530

2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170
2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326

2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192
2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766

2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329
2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496



2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581
2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652

2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717
2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091

2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876
2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109

2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005
2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882

2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206
2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301

2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988
2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584

2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932
2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000

2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000
2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065



2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032
2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032

2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014
2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000

2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079
2050	2050	2	1	0.019
2050	2050	2	2	0.009
2050	2050	2	3	0.000
2050	2050	3	1	0.019
2050	2050	3	2	0.009
2050	2050	3	3	0.000
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000

INPUT\_SUMMARY

Run name            TUBA-7\_Kirk Hill\_V4.2\_High\_15OB  
DM scheme            DM  
DS scheme            DS



Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted E000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0
Road	2021	94	138	4106	17	0	0	0	0
Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	0	398
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0
Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0
Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0
Road	2046	0	0	0	0	2	0	0	0
Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0

Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0
Road	2081	0	0	0	0	2	0	0	0
Road	2082	0	0	0	0	2	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	51	51
Road	2021	0	2983	2983
Road	2022	0	657	657
Road	2023	0	8	8
Road	2024	0	1	1
Road	2025	0	1	1
Road	2026	0	1	1
Road	2027	0	1	1
Road	2028	0	6	6
Road	2029	0	1	1
Road	2030	0	1	1
Road	2031	0	1	1
Road	2032	0	1	1
Road	2033	0	19	19
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	4	4
Road	2039	0	1	1

Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887



## TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1546	1546
Car	2023	PM peak	1931	1931
Car	2023	Inter-peak	4212	4212
Car	2023	Off-peak	562	562
Car	2023	All	8250	8250
Car	2037	AM peak	1745	1745
Car	2037	PM peak	2086	2086
Car	2037	Inter-peak	4852	4852
Car	2037	Off-peak	646	646
Car	2037	All	9329	9329
LGV Personal	2023	AM peak	28	28
LGV Personal	2023	PM peak	28	28
LGV Personal	2023	Inter-peak	84	84
LGV Personal	2023	Off-peak	4	4
LGV Personal	2023	All	144	144
LGV Personal	2037	AM peak	32	32
LGV Personal	2037	PM peak	30	30
LGV Personal	2037	Inter-peak	97	97
LGV Personal	2037	Off-peak	5	5
LGV Personal	2037	All	164	164
LGV Freight	2023	AM peak	205	205
LGV Freight	2023	PM peak	207	207
LGV Freight	2023	Inter-peak	616	616
LGV Freight	2023	Off-peak	31	31
LGV Freight	2023	All	1059	1059
LGV Freight	2037	AM peak	231	231
LGV Freight	2037	PM peak	223	223
LGV Freight	2037	Inter-peak	709	709
LGV Freight	2037	Off-peak	36	36
LGV Freight	2037	All	1200	1200
OGV1	2023	AM peak	15	15
OGV1	2023	PM peak	15	15
OGV1	2023	Inter-peak	81	81
OGV1	2023	Off-peak	16	16
OGV1	2023	All	127	127
OGV1	2037	AM peak	17	17
OGV1	2037	PM peak	16	16
OGV1	2037	Inter-peak	93	93
OGV1	2037	Off-peak	19	19
OGV1	2037	All	145	145

OGV2	2023 AM peak	26	26
OGV2	2023 PM peak	50	50
OGV2	2023 Inter-peak	172	172
OGV2	2023 Off-peak	39	39
OGV2	2023 All	286	286
OGV2	2037 AM peak	30	30
OGV2	2037 PM peak	54	54
OGV2	2037 Inter-peak	198	198
OGV2	2037 Off-peak	44	44
OGV2	2037 All	325	325
All	2023 AM peak	1820	1820
All	2023 PM peak	2230	2230
All	2023 Inter-peak	5164	5164
All	2023 Off-peak	652	652
All	2023 All	9866	9866
All	2037 AM peak	2055	2055
All	2037 PM peak	2409	2409
All	2037 Inter-peak	5949	5949
All	2037 Off-peak	750	750
All	2037 All	11163	11163

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	670	0	401	256	357	0	372	255
Road	2037	819	0	203	180	395	0	171	179

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	293	243	38	268	227	36
Car	2037	228	120	415	188	100	388
LGV Personal	2023	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0
LGV Freight	2023	0	21	0	0	21	0
LGV Freight	2037	1	16	6	1	14	6
OGV1	2023	0	0	0	0	1	0
OGV1	2037	0	0	0	0	1	0
OGV2	2023	0	5	0	0	5	0
OGV2	2037	0	5	0	0	4	0
All	2023	294	270	38	269	253	37
All	2037	229	141	421	188	119	394
Car	Total	11788	6551	29636	9882	5592	27782

LGV Personal Total	1	10	6	1	13	9
LGV Freight Total	44	889	535	37	788	534
OGV1 Total	0	20	0	0	30	0
OGV2 Total	0	272	0	0	247	0
All Total	11832	7742	30177	9920	6670	28325

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1196	1105	-91	24	22	-2	48	45	-4	72	67	-6
Car	2037	763	630	-133	18	14	-3	35	29	-6	52	43	-9
LGV Personal	2023	0	1	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	53	51	-2	1	1	-0	2	2	-0	3	3	-0
LGV Freight	2037	41	36	-5	1	1	-0	2	2	-0	3	2	-0
OGV1	2023	1	1	1	0	0	0	0	0	0	0	0	0
OGV1	2037	1	1	0	0	0	0	0	0	0	0	0	0
OGV2	2023	13	12	-1	0	0	-0	1	0	-0	1	1	-0
OGV2	2037	11	10	-1	0	0	-0	1	0	-0	1	1	-0
All	2023	1262	1169	-93	25	23	-2	51	47	-4	76	71	-6
All	2024	1239	1138	-101	25	23	-2	49	45	-4	74	68	-6
All	2025	1209	1102	-108	24	22	-2	47	43	-4	71	65	-6
All	2026	1178	1064	-114	22	20	-2	45	41	-4	67	61	-6
All	2027	1147	1028	-119	22	19	-2	43	38	-4	64	58	-7
All	2028	1116	992	-124	20	18	-2	41	37	-5	62	55	-7
All	2029	1086	958	-128	20	17	-2	39	35	-5	59	52	-7
All	2030	1043	912	-131	18	16	-2	37	32	-5	55	48	-7
All	2031	1002	870	-132	19	16	-2	37	32	-5	56	48	-7
All	2032	964	830	-134	19	16	-3	38	32	-5	57	49	-8
All	2033	929	794	-135	19	16	-3	38	32	-5	57	48	-8
All	2034	896	761	-136	19	16	-3	38	32	-6	57	48	-9
All	2035	867	730	-137	19	16	-3	38	32	-6	57	48	-9
All	2036	841	703	-138	19	16	-3	38	31	-6	56	47	-9
All	2037	817	678	-139	19	16	-3	37	31	-6	56	47	-10
All	2038	789	655	-134	18	15	-3	37	31	-6	55	46	-9
All	2039	765	635	-130	18	15	-3	36	30	-6	55	45	-9
All	2040	740	614	-126	18	15	-3	36	30	-6	54	45	-9
All	2041	715	594	-121	18	15	-3	35	29	-6	52	44	-9
All	2042	696	577	-118	17	14	-3	34	29	-6	51	43	-9
All	2043	678	563	-115	17	14	-3	34	28	-6	51	42	-9
All	2044	662	549	-112	17	14	-3	33	28	-6	50	41	-8
All	2045	647	538	-110	16	14	-3	33	27	-6	49	41	-8
All	2046	634	527	-108	16	13	-3	32	27	-5	48	40	-8
All	2047	622	517	-105	16	13	-3	31	26	-5	47	39	-8

All	2048	611	507	-104	16	13	-3	31	26	-5	47	39	-8
All	2049	600	499	-102	15	13	-3	30	25	-5	46	38	-8
All	2050	590	490	-100	15	12	-3	30	25	-5	45	37	-8
All	2051	590	490	-100	15	12	-3	30	25	-5	45	38	-8
All	2052	590	490	-100	15	12	-3	30	25	-5	46	38	-8
All	2053	590	490	-100	15	12	-2	30	25	-5	46	38	-8
All	2054	590	490	-100	15	12	-2	30	25	-5	46	38	-8
All	2055	590	490	-100	14	12	-2	30	25	-5	46	38	-8
All	2056	590	490	-100	14	12	-2	30	25	-5	46	38	-8
All	2057	590	490	-100	14	12	-2	30	25	-5	46	38	-8
All	2058	590	490	-100	14	11	-2	30	25	-5	46	38	-8
All	2059	590	490	-100	14	11	-2	30	25	-5	46	38	-8
All	2060	590	490	-100	13	11	-2	30	25	-5	46	38	-8
All	2061	590	490	-100	13	11	-2	29	24	-5	45	38	-8
All	2062	590	490	-100	13	11	-2	29	24	-5	45	38	-8
All	2063	590	490	-100	12	10	-2	29	24	-5	45	37	-8
All	2064	590	490	-100	12	10	-2	28	23	-5	44	37	-7
All	2065	590	490	-100	12	10	-2	28	23	-5	43	36	-7
All	2066	590	490	-100	11	9	-2	27	23	-5	43	36	-7
All	2067	590	490	-100	11	9	-2	27	22	-5	42	35	-7
All	2068	590	490	-100	11	9	-2	26	22	-4	41	34	-7
All	2069	590	490	-100	10	9	-2	25	21	-4	41	34	-7
All	2070	590	490	-100	10	8	-2	25	21	-4	40	33	-7
All	2071	590	490	-100	10	8	-2	24	20	-4	39	32	-7
All	2072	590	490	-100	9	8	-2	24	20	-4	38	32	-6
All	2073	590	490	-100	9	7	-2	23	19	-4	37	31	-6
All	2074	590	490	-100	9	7	-1	23	19	-4	37	30	-6
All	2075	590	490	-100	8	7	-1	22	18	-4	36	30	-6
All	2076	590	490	-100	8	7	-1	21	18	-4	35	29	-6
All	2077	590	490	-100	8	6	-1	21	17	-4	34	28	-6
All	2078	590	490	-100	7	6	-1	20	17	-3	33	27	-6
All	2079	590	490	-100	7	6	-1	19	16	-3	32	27	-5
All	2080	590	490	-100	7	5	-1	19	16	-3	31	26	-5
All	2081	590	490	-100	6	5	-1	18	15	-3	30	25	-5
All	2082	590	490	-100	6	5	-1	18	15	-3	29	24	-5
Car	Total	40265	33999	-6266	815	687	-127	1744	1469	-275	2674	2252	-423
LGV Personal	Total	26	33	7	1	1	0	1	1	0	2	2	0
LGV Freight	Total	2242	1983	-258	45	40	-5	98	86	-11	150	133	-18
OGV1	Total	47	73	25	1	1	1	2	3	1	3	5	2
OGV2	Total	659	599	-60	13	12	-1	29	26	-3	44	40	-4
All	Total	43239	36687	-6552	875	741	-133	1874	1586	-288	2874	2432	-442

CO2\_EMISSIONS\_TRADED

Emissions (tonnes)                      cost (E000s, low)                      cost (E000s, central)                      cost (E000s, high)

Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	10	9	-0	0	0	-0	0	0	0	-0	0	0
Car	2037	24	22	-2	1	1	-0	1	1	-0	2	2	-0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2037	0	0	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	10	9	-0	0	0	-0	0	0	-0	0	0	-0
All	2024	13	12	-0	0	0	-0	0	0	-0	0	0	-0
All	2025	17	16	-1	0	0	-0	0	0	-0	1	1	-0
All	2026	21	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2027	25	24	-1	0	0	-0	1	1	-0	1	1	-0
All	2028	27	26	-1	0	0	-0	1	1	-0	1	1	-0
All	2029	29	27	-1	0	0	-0	1	1	-0	1	1	-0
All	2030	29	27	-1	1	0	-0	1	1	-0	2	1	-0
All	2031	29	28	-1	1	1	-0	1	1	-0	2	2	-0
All	2032	29	27	-2	1	1	-0	1	1	-0	2	2	-0
All	2033	29	27	-2	1	1	-0	1	1	-0	2	2	-0
All	2034	28	26	-2	1	1	-0	1	1	-0	2	2	-0
All	2035	27	25	-2	1	1	-0	1	1	-0	2	2	-0
All	2036	26	24	-2	1	1	-0	1	1	-0	2	2	-0
All	2037	24	23	-2	1	1	-0	1	1	-0	2	2	-0
All	2038	23	21	-1	1	1	-0	1	1	-0	2	1	-0
All	2039	21	20	-1	1	0	-0	1	1	-0	2	1	-0
All	2040	20	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2041	20	18	-1	1	0	-0	1	1	-0	1	1	-0
All	2042	20	18	-1	1	0	-0	1	1	-0	1	1	-0
All	2043	20	18	-1	1	0	-0	1	1	-0	1	1	-0
All	2044	19	18	-1	1	0	-0	1	1	-0	1	1	-0
All	2045	19	18	-1	1	0	-0	1	1	-0	1	1	-0
All	2046	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2047	19	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2048	18	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2049	18	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2050	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2051	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2052	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2053	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2054	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2055	17	16	-1	0	0	-0	1	1	-0	1	1	-0

All	2056	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2057	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2058	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2059	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2060	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2061	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2062	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2063	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2064	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2065	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2066	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2067	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2068	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2069	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2070	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2071	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2072	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2073	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2074	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2075	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2076	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2077	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2078	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2079	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2080	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2081	17	16	-1	0	0	-0	1	0	-0	1	1	-0
All	2082	17	16	-1	0	0	-0	1	0	-0	1	1	-0
Car	Total	1140	1073	-68	23	22	-1	48	46	-3	75	70	-5
LGV Personal	Total	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	18	18	-0	0	0	-0	1	1	-0	1	1	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	1159	1091	-68	24	22	-1	49	46	-3	76	71	-5

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	187	160	-27	4	3	-1	8	6	-1	11	10	-2
AM peak	2037	135	98	-37	3	2	-1	6	4	-2	9	7	-3
PM peak	2023	271	192	-79	5	4	-2	11	8	-3	16	12	-5
PM peak	2037	182	116	-66	4	3	-2	8	5	-3	12	8	-5
Inter-peak	2023	729	749	20	15	15	0	30	30	1	44	45	1
Inter-peak	2037	451	418	-33	10	10	-1	21	19	-1	31	29	-2
Off-peak	2023	75	69	-6	1	1	-0	3	3	-0	5	4	-0

Off-peak	2037	49	46	-3	1	1	-0	2	2	-0	3	3	-0
AM peak	Total	6993	5223	-1770	142	106	-36	304	226	-78	466	347	-119
PM peak	Total	9552	6214	-3338	193	126	-68	414	269	-145	635	412	-223
Inter-peak	Total	24093	22830	-1263	487	461	-26	1043	986	-57	1600	1512	-88
Off-peak	Total	2601	2420	-181	53	49	-4	113	105	-8	173	161	-12

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	2037	4	3	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	5	4	-0	0	0	-0	0	0	-0	0	0	-0
Inter-peak	2023	6	6	0	0	0	0	0	0	0	0	0	0
Inter-peak	2037	14	14	-1	0	0	-0	1	1	-0	1	1	-0
Off-peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
Off-peak	2037	2	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	Total	171	161	-10	3	3	-0	7	7	-0	11	11	-1
PM peak	Total	229	206	-23	5	4	-0	10	9	-1	15	13	-2
Inter-peak	Total	686	655	-31	14	13	-1	29	28	-1	45	43	-2
Off-peak	Total	74	70	-4	1	1	-0	3	3	-0	5	5	-0

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost		Operator_Rev		Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes	
Road	2023	312	0	30	1	0	-17	
Road	2024	324	0	31	1	0	-18	
Road	2025	335	0	33	1	0	-18	
Road	2026	345	0	34	1	0	-19	
Road	2027	355	0	35	1	0	-19	
Road	2028	364	0	35	1	0	-19	
Road	2029	373	0	36	1	0	-20	
Road	2030	381	0	36	1	0	-19	
Road	2031	388	0	35	1	0	-19	
Road	2032	395	0	35	1	0	-19	
Road	2033	402	0	34	1	0	-18	

Road	2034	408	0	34	1	0	-18
Road	2035	414	0	33	1	0	-18
Road	2036	419	0	32	1	0	-17
Road	2037	424	0	32	1	0	-17
Road	2038	416	0	30	1	0	-16
Road	2039	408	0	28	1	0	-15
Road	2040	400	0	27	1	0	-14
Road	2041	392	0	25	1	0	-13
Road	2042	383	0	24	1	0	-12
Road	2043	376	0	22	1	0	-12
Road	2044	368	0	21	1	0	-11
Road	2045	360	0	20	1	0	-11
Road	2046	352	0	19	1	0	-10
Road	2047	345	0	18	1	0	-10
Road	2048	337	0	18	1	0	-9
Road	2049	330	0	17	1	0	-9
Road	2050	323	0	16	1	0	-8
Road	2051	318	0	16	1	0	-8
Road	2052	313	0	15	1	0	-8
Road	2053	308	0	15	1	0	-8
Road	2054	303	0	14	1	0	-8
Road	2055	298	0	14	1	0	-7
Road	2056	293	0	14	1	0	-7
Road	2057	288	0	13	1	0	-7
Road	2058	284	0	13	1	0	-7
Road	2059	280	0	13	1	0	-7
Road	2060	275	0	12	1	0	-7
Road	2061	271	0	12	1	0	-6
Road	2062	267	0	12	1	0	-6
Road	2063	263	0	11	0	0	-6
Road	2064	259	0	11	0	0	-6
Road	2065	255	0	11	0	0	-6
Road	2066	252	0	11	0	0	-6
Road	2067	248	0	10	0	0	-6
Road	2068	245	0	10	0	0	-5
Road	2069	241	0	10	0	0	-5
Road	2070	238	0	9	0	0	-5
Road	2071	234	0	9	0	0	-5
Road	2072	231	0	9	0	0	-5
Road	2073	227	0	9	0	0	-5
Road	2074	224	0	9	0	0	-5
Road	2075	221	0	8	0	0	-5
Road	2076	218	0	8	0	0	-4
Road	2077	214	0	8	0	0	-4



Road	2078	211	0	8	0	0	-4
Road	2079	208	0	7	0	0	-4
Road	2080	205	0	7	0	0	-4
Road	2081	202	0	7	0	0	-4
Road	2082	199	0	7	0	0	-4
Road	Total	18522	0	1132	43	0	-608

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Car	2023	297	0	29	0	0	-16
Car	2037	403	0	31	0	0	-16
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	14	0	1	0	0	-0
LGV Freight	2037	20	0	1	1	0	-1
OGV1	2023	0	0	-0	0	0	0
OGV1	2037	0	0	-0	0	0	0
OGV2	2023	0	0	0	0	0	-0
OGV2	2037	0	0	0	0	0	-0
All	2023	312	0	30	1	0	-17
All	2037	424	0	32	1	0	-17
Car	Total	17606	0	1092	16	0	-586
LGV Personal	Total	7	0	-1	0	0	1
LGV Freight	Total	885	0	37	21	0	-21
OGV1	Total	3	0	-4	0	0	2
OGV2	Total	22	0	9	6	0	-5
All	Total	18522	0	1132	43	0	-608

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
All	2023	312	0	30	1	0	-17
All	2037	424	0	32	1	0	-17
All	Total	18522	0	1132	43	0	-608

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	Taxes
Business	2023	17	0	1	1	0	-0
Business	2037	24	0	1	1	0	-1

Commuting	2023	111	0	8	0	0	-5
Commuting	2037	149	0	6	0	0	-3
Other	2023	184	0	21	0	0	-12
Other	2037	251	0	25	0	0	-13
Business	Total	1049	0	45	43	0	-26
Commuting	Total	6521	0	218	0	0	-121
Other	Total	10953	0	868	0	0	-462

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	134	0	9	1	0	-5
AM peak	2037	211	0	8	1	0	-5
PM peak	2023	233	0	25	1	0	-14
PM peak	2037	267	0	15	1	0	-8
Inter-peak	2023	-51	0	-6	-0	0	3
Inter-peak	2037	-49	0	8	-0	0	-4
Off-peak	2023	-4	0	2	-0	0	-1
Off-peak	2037	-5	0	1	-0	0	-0
AM peak	Total	9049	0	300	27	0	-167
PM peak	Total	11920	0	593	25	0	-327
Inter-peak	Total	-2231	0	203	-8	0	-96
Off-peak	Total	-216	0	36	-1	0	-18

#### NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	0
Car	Business	2037	0	0	-0	1	0	0
Car	Business	Total	0	0	-10	51	0	0
Car	Commuting	2023	0	0	-2	15	2	0
Car	Commuting	2037	0	0	-3	1	30	0
Car	Commuting	Total	0	0	-159	152	1596	0
Car	Other	2023	0	0	-27	5	65	14
Car	Other	2037	0	0	-34	5	110	22
Car	Other	Total	0	0	-2004	312	6272	1268
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0

LGV Personal Other	2037	0	0	-0	0	0	0
LGV Personal Other	Total	0	0	-1	5	0	0
LGV Freight Business	2023	0	0	-1	2	0	0
LGV Freight Business	2037	0	0	-1	4	0	0
LGV Freight Business	Total	0	0	-42	214	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	-0	0	0	0
OGV1 Business	2037	0	0	-0	0	0	0
OGV1 Business	Total	0	0	-1	1	0	0
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0
OGV2 Business	2023	0	0	-0	0	0	0
OGV2 Business	2037	0	0	-0	0	0	0
OGV2 Business	Total	0	0	-3	7	0	0
OGV2 Commuting	2023	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	3	0	0
Car	Business	2037	0	0	-1	4	0	0
Car	Business	Total	0	0	-34	173	0	0
Car	Commuting	2023	0	0	-13	107	18	0
Car	Commuting	2037	0	0	-15	4	160	0
Car	Commuting	Total	0	0	-659	888	6292	0
Car	Other	2023	0	0	-88	18	208	46
Car	Other	2037	0	0	-83	13	268	54
Car	Other	Total	0	0	-3818	605	11769	2390
LGV Personal Business	2023	0	0	0	0	0	0	0
LGV Personal Business	2037	0	0	0	0	0	0	0

LGV Personal Business	Total		0	0	0	0	0	0
LGV Personal Commuting	2023		0	0	0	0	0	0
LGV Personal Commuting	2037		0	0	0	0	0	0
LGV Personal Commuting	Total		0	0	0	0	0	0
LGV Personal Other	2023		0	0	-0	0	0	0
LGV Personal Other	2037		0	0	-0	0	0	0
LGV Personal Other	Total		0	0	-2	9	0	0
LGV Freight Business	2023		0	0	-5	19	0	0
LGV Freight Business	2037		0	0	-5	25	0	0
LGV Freight Business	Total		0	0	-222	1107	0	0
LGV Freight Commuting	2023		0	0	0	0	0	0
LGV Freight Commuting	2037		0	0	0	0	0	0
LGV Freight Commuting	Total		0	0	0	0	0	0
LGV Freight Other	2023		0	0	0	0	0	0
LGV Freight Other	2037		0	0	0	0	0	0
LGV Freight Other	Total		0	0	0	0	0	0
OGV1 Business	2023		0	0	-0	0	0	0
OGV1 Business	2037		0	0	-0	0	0	0
OGV1 Business	Total		0	0	-3	6	0	0
OGV1 Commuting	2023		0	0	0	0	0	0
OGV1 Commuting	2037		0	0	0	0	0	0
OGV1 Commuting	Total		0	0	0	0	0	0
OGV1 Other	2023		0	0	0	0	0	0
OGV1 Other	2037		0	0	0	0	0	0
OGV1 Other	Total		0	0	0	0	0	0
OGV2 Business	2023		0	0	-0	1	0	0
OGV2 Business	2037		0	0	-0	1	0	0
OGV2 Business	Total		0	0	-17	39	0	0
OGV2 Commuting	2023		0	0	0	0	0	0
OGV2 Commuting	2037		0	0	0	0	0	0
OGV2 Commuting	Total		0	0	0	0	0	0
OGV2 Other	2023		0	0	0	0	0	0
OGV2 Other	2037		0	0	0	0	0	0
OGV2 Other	Total		0	0	0	0	0	0

#### TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	4	0	0
Car	Business	2037	0	0	-1	5	0	0
Car	Business	Total	0	0	-38	196	0	0
Car	Commuting	2023	0	0	-12	113	18	0
Car	Commuting	2037	0	0	-14	5	164	0
Car	Commuting	Total	0	0	-643	963	6419	0











OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	1	0	0	0	0	0	0
OGV2	Business	2037	0	1	0	0	0	0	0	0
OGV2	Business	Total	0	36	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 25.83% 38.04%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	6521	6521
Vehicle operating costs	218	218
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>6739</b>	<b>6739</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	10953	10953
Vehicle operating costs	868	868
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>11821</b>	<b>11821</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	1049	139	910
Vehicle operating costs	88	19	69
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>1137</b>	<b>158</b>	<b>978</b>

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0

Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-255	-255
NET BUSINESS IMPACT	882	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	19442
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
NET IMPACT	738	738

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

Central Government Funding: Non-Transport

Indirect Tax Revenues	608	608
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TOTALS

Broad Transport Budget	3632	3632
Wider Public Finances	608	608

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	288
Economic Efficiency: Consumer Users (Commuting)	6739
Economic Efficiency: Consumer Users (Other)	11821
Economic Efficiency: Business Users and Providers	882
Wider Public Finances (Indirect Taxation Revenues)	-608
Present Value of Benefits (PVB)	19122
Broad Transport Budget	3632
Present Value of Costs (PVC)	3632
OVERALL IMPACTS	
Net Present Value (NPV)	15490
Benefit to Cost Ratio (BCR)	5.265

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4.2\_High\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.2\_High\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_High\_V4.2\_Sens\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.2\_High\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_High\_V4.2\_Sens\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.2\_High\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

SCHEME SPECIFIC PARAMETERS

PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-7\_Kirk Hill\_V4.1\_Low\_15OB

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2082

modelled\_yrs 2023 2037

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

1 2021 2022 SI

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

M	1	LOC	803.31	F	119.37	1
C	1	CEN	4085.24	F	119.37	1
L	1	CEN	60.12	F	119.37	1
S	1	CEN	118.9	F	119.37	1
P	1	LOC	149.5	F	119.37	1

C	1	LOC	865.096	F	119.37	1
L	1	LOC	12.7325	F	119.37	1
S	1	LOC	157.468	F	119.37	1
D	1	LOC	399.3835	F	119.37	1

DO\_SOM\_PROFILE

*Year	Mode	%Const	%Land	%Prep	%Super	%Maint	%Op	%Grant	%Dev
2020	1	0.00	23.50	36.90	0.00	0.00	0.00	0.00	0.00
2021	1	83.20	23.50	63.10	50.00	0.00	0.00	0.00	0.00
2022	1	16.80	35.40	0.00	50.00	0.00	0.00	0.00	0.00
2023	1	0.00	17.60	0.00	0.00	0.00	0.00	0.00	100.00
2024	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2025	1	0.00	0.00	0.00	0.00	0.209	0.00	0.00	0.00
2026	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2027	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2028	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2029	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2030	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2031	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2032	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2033	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2034	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2035	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2036	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2037	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2038	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2039	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2040	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2041	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2042	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2043	1	0.0	0.0	0.0	0.0	18.532	0.0	0.0	0.0
2044	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2045	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2046	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2047	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2048	1	0.0	0.0	0.0	0.0	3.668	0.0	0.0	0.0
2049	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2050	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2051	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2052	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2053	1	0.0	0.0	0.0	0.0	5.292	0.0	0.0	0.0
2054	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2055	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2056	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2057	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2058	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2059	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2060	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2061	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0

2062	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2063	1	0.0	0.0	0.0	0.0	40.266	0.0	0.0	0.0
2064	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2065	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2066	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2067	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2068	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2069	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2070	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2071	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2072	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2073	1	0.0	0.0	0.0	0.0	9.773	0.0	0.0	0.0
2074	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2075	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2076	1	0.0	0.0	0.0	0.0	0.209	0.0	0.0	0.0
2077	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2078	1	0.0	0.0	0.0	0.0	1.428	0.0	0.0	0.0
2079	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2080	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2081	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0
2082	1	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.0

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight



BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
2	2	1	V	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
3	3	1	V	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
5	5	1	V	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
6	6	1	V	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt
7	7	1	V	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2023_DM.txt

8	1	3	V	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
9	2	3	V	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
10	3	3	V	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
11	4	3	V	1	0	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
12	5	3	V	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
13	6	3	V	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
14	7	3	V	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
15	1	2	V	1	0	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
16	2	2	V	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
17	3	2	V	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
18	4	2	V	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
19	5	2	V	1	0	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
20	6	2	V	1	0	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
21	7	2	V	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
22	1	4	V	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
23	2	4	V	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
24	3	4	V	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
25	4	4	V	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
26	5	4	V	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
27	6	4	V	1	0	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
28	7	4	V	1	0	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
29	1	1	V	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
30	2	1	V	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
31	3	1	V	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2023_DS.txt

33	5	1	V	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
34	6	1	V	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
35	7	1	V	1	1	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
36	1	3	V	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
37	2	3	V	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
38	3	3	V	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
39	4	3	V	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
40	5	3	V	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
41	6	3	V	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
42	7	3	V	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
43	1	2	V	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
44	2	2	V	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
45	3	2	V	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
46	4	2	V	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
47	5	2	V	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
48	6	2	V	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
49	7	2	V	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
50	1	4	V	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
51	2	4	V	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
52	3	4	V	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
53	4	4	V	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
54	5	4	V	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
55	6	4	V	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
56	7	4	V	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\W_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
57	1	1	T	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt

58	2	1	T	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
59	3	1	T	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
60	4	1	T	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
61	5	1	T	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
62	6	1	T	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
63	7	1	T	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
64	1	3	T	1	0	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
65	2	3	T	1	0	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
66	3	3	T	1	0	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
67	4	3	T	1	0	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
68	5	3	T	1	0	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
69	6	3	T	1	0	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
70	7	3	T	1	0	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
71	1	2	T	1	0	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
72	2	2	T	1	0	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
73	3	2	T	1	0	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
74	4	2	T	1	0	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
75	5	2	T	1	0	2023	0.09275	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
76	6	2	T	1	0	2023	0.00652	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
77	7	2	T	1	0	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
78	1	4	T	1	0	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
79	2	4	T	1	0	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
80	3	4	T	1	0	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
81	4	4	T	1	0	2023	0.00656	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
82	5	4	T	1	0	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt

83	6	4	T	1	0	2023	0.02515	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
84	7	4	T	1	0	2023	0.05905	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
85	1	1	T	1	1	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
86	2	1	T	1	1	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
87	3	1	T	1	1	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
88	4	1	T	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
89	5	1	T	1	1	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
90	6	1	T	1	1	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
91	7	1	T	1	1	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
92	1	3	T	1	1	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
93	2	3	T	1	1	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
94	3	3	T	1	1	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
95	4	3	T	1	1	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
96	5	3	T	1	1	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
97	6	3	T	1	1	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
98	7	3	T	1	1	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
99	1	2	T	1	1	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
100	2	2	T	1	1	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
101	3	2	T	1	1	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
102	4	2	T	1	1	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
103	5	2	T	1	1	2023	0.09275	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
104	6	2	T	1	1	2023	0.00652	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
105	7	2	T	1	1	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
106	1	4	T	1	1	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
107	2	4	T	1	1	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt

108	3	4	T	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
109	4	4	T	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
110	5	4	T	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
111	6	4	T	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
112	7	4	T	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
113	1	1	D	1	0	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
114	2	1	D	1	0	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
115	3	1	D	1	0	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
116	4	1	D	1	0	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
117	5	1	D	1	0	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
118	6	1	D	1	0	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
119	7	1	D	1	0	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DM.txt
120	1	3	D	1	0	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
121	2	3	D	1	0	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
122	3	3	D	1	0	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
123	4	3	D	1	0	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
124	5	3	D	1	0	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
125	6	3	D	1	0	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
126	7	3	D	1	0	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DM.txt
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128	2	2	D	1	0	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
129	3	2	D	1	0	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
130	4	2	D	1	0	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
131	5	2	D	1	0	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
132	6	2	D	1	0	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt

133	7	2	D	1	0	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DM.txt
134	1	4	D	1	0	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
135	2	4	D	1	0	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
136	3	4	D	1	0	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
137	4	4	D	1	0	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
138	5	4	D	1	0	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
139	6	4	D	1	0	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
140	7	4	D	1	0	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DM.txt
141	1	1	D	1	1	2023	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
142	2	1	D	1	1	2023	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
143	3	1	D	1	1	2023	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
144	4	1	D	1	1	2023	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
145	5	1	D	1	1	2023	0.11257	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
146	6	1	D	1	1	2023	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
147	7	1	D	1	1	2023	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_AM_2023_DS.txt
148	1	3	D	1	1	2023	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
149	2	3	D	1	1	2023	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
150	3	3	D	1	1	2023	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
151	4	3	D	1	1	2023	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
152	5	3	D	1	1	2023	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
153	6	3	D	1	1	2023	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
154	7	3	D	1	1	2023	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_IP_2023_DS.txt
155	1	2	D	1	1	2023	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
156	2	2	D	1	1	2023	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
157	3	2	D	1	1	2023	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt

158	4	2	D	1	1	2023	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
159	5	2	D	1	1	2023	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
160	6	2	D	1	1	2023	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
161	7	2	D	1	1	2023	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_PM_2023_DS.txt
162	1	4	D	1	1	2023	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
163	2	4	D	1	1	2023	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
164	3	4	D	1	1	2023	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
165	4	4	D	1	1	2023	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
166	5	4	D	1	1	2023	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
167	6	4	D	1	1	2023	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
168	7	4	D	1	1	2023	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\D_A614_Kirk_Hill_L_V4_OP_2023_DS.txt
169	1	1	V	1	0	2037	0.05903	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2037_DM.txt
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172	4	1	V	1	0	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2037_DM.txt
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174	6	1	V	1	0	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2037_DM.txt
175	7	1	V	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_AM_2037_DM.txt
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177	2	3	V	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
178	3	3	V	1	0	2037	0.66493	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
179	4	3	V	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
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181	6	3	V	1	0	2037	0.01568	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
182	7	3	V	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_IP_2037_DM.txt



183	1	2	V	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_PM_2037_DM.txt
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185	3	2	V	1	0	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_PM_2037_DM.txt
186	4	2	V	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_PM_2037_DM.txt
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198	2	1	V	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2037_DS.txt
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202	6	1	V	1	1	2037	0.00845	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2037_DS.txt
203	7	1	V	1	1	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\A614_Kirk_Hill_L_V4_AM_2037_DS.txt
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212	2	2	V	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
213	3	2	V	1	1	2037	0.53951	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
214	4	2	V	1	1	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
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222	5	4	V	1	1	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2037_DS.txt
223	6	4	V	1	1	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2037_DS.txt
224	7	4	V	1	1	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\V_A614_Kirk_Hill_L_V4_OP_2037_DS.txt
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231	7	1	T	1	0	2037	0.01451	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2037_DM.txt
232	1	3	T	1	0	2037	0.05864	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2037_DM.txt

233	2	3	T	1	0	2037	0.09201	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
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235	4	3	T	1	0	2037	0.01626	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
236	5	3	T	1	0	2037	0.11925	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
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238	7	3	T	1	0	2037	0.03323	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_IP_2037_DM.txt
239	1	2	T	1	0	2037	0.04428	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
240	2	2	T	1	0	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
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242	4	2	T	1	0	2037	0.01265	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
243	5	2	T	1	0	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
244	6	2	T	1	0	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
245	7	2	T	1	0	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DM.txt
246	1	4	T	1	0	2037	0.03710	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
247	2	4	T	1	0	2037	0.24762	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
248	3	4	T	1	0	2037	0.57640	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
249	4	4	T	1	0	2037	0.00656	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
250	5	4	T	1	0	2037	0.04811	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
251	6	4	T	1	0	2037	0.02515	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
252	7	4	T	1	0	2037	0.05905	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_OP_2037_DM.txt
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254	2	1	T	1	1	2037	0.32523	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2037_DS.txt
255	3	1	T	1	1	2037	0.46486	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2037_DS.txt
256	4	1	T	1	1	2037	0.01535	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_AM_2037_DS.txt
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268	2	2	T	1	1	2037	0.28208	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
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271	5	2	T	1	1	2037	0.09275	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
272	6	2	T	1	1	2037	0.00652	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
273	7	2	T	1	1	2037	0.02221	L:\60625845_A614 MRN DFT responses\08_Models\TUBA\7-Kirk Hill\Outputs_Low_V4.1\T_A614_Kirk_Hill_L_V4_PM_2037_DS.txt
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#### SECTORS

\*mode Sector\_file\_name

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Feb 18, 2021 at 10:33:50

ERRORS AND WARNINGS

990 Warnings found in total (including any above)

Warning (14 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	OGV2	Business	All	2023	0.000	0.001	0.312	3.071	3.071
1	3	4	OGV1	Business	All	2023	0.000	0.000	0.312	1.308	1.308
1	3	4	Car	Other	All	2023	0.002	0.005	0.312	29.973	29.973
1	3	4	Car	Business	All	2023	0.000	0.000	0.312	1.929	1.929
1	3	4	LGV Freight	Business	All	2023	0.000	0.000	0.312	2.502	2.502
1	3	4	Car	Commuting	All	2023	0.001	0.002	0.312	12.876	12.876
1	3	4	LGV Personal	Other	All	2023	0.000	0.000	0.312	0.341	0.341
1	3	4	Car	Business	All	2037	0.000	0.000	0.328	2.115	2.115
1	3	4	OGV2	Business	All	2037	0.000	0.000	0.328	3.366	3.366
1	3	4	LGV Personal	Other	All	2037	0.000	0.000	0.328	0.374	0.374
1	3	4	OGV1	Business	All	2037	0.000	0.000	0.328	1.434	1.434
1	3	4	LGV Freight	Business	All	2037	0.000	0.000	0.328	2.742	2.742
1	3	4	Car	Commuting	All	2037	0.001	0.002	0.328	14.114	14.114
1	3	4	Car	Other	All	2037	0.002	0.005	0.328	32.855	32.855
1	3	3	Car	Other	All	2023	0.003	0.007	0.416	408.267	408.267



1	3	3	LGV Personal Other	All	2023	0.000	0.000	0.416	9.984	9.984
1	3	3	OGV2 Business	All	2023	0.000	0.000	0.416	20.403	20.403
1	3	3	Car Business	All	2023	0.000	0.001	0.416	36.005	36.005
1	3	3	OGV1 Business	All	2023	0.000	0.000	0.416	9.628	9.628
1	3	3	Car Commuting	All	2023	0.000	0.001	0.416	56.494	56.494

Displayed 20 warnings of a total of 42 of this type.

Warning (168 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	4	2	LGV Personal Other	All	2023	0.002	0.000	16.907	0.506	0.506	
2	1	2	LGV Freight Business	All	2023	0.014	0.001	16.907	12.614	12.614	
2	3	2	LGV Freight Business	All	2023	0.014	0.001	16.907	2.597	2.597	
2	4	2	LGV Freight Business	All	2023	0.014	0.001	16.907	3.710	3.710	
2	1	2	LGV Personal Other	All	2023	0.002	0.000	16.907	1.720	1.720	
2	1	2	OGV1 Business	All	2023	0.001	0.000	16.907	0.887	0.887	
2	4	2	OGV1 Business	All	2023	0.001	0.000	16.907	0.261	0.261	
2	3	2	OGV1 Business	All	2023	0.001	0.000	16.907	0.183	0.183	
2	4	2	Car Commuting	All	2023	0.043	0.003	16.907	11.283	11.283	
2	1	2	Car Business	All	2023	0.007	0.000	16.907	6.022	6.022	
2	3	2	Car Commuting	All	2023	0.043	0.003	16.907	7.898	7.898	
2	3	2	Car Business	All	2023	0.007	0.000	16.907	1.240	1.240	
2	1	2	Car Commuting	All	2023	0.043	0.003	16.907	38.363	38.363	
2	4	2	Car Business	All	2023	0.007	0.000	16.907	1.771	1.771	
2	3	2	LGV Personal Other	All	2023	0.002	0.000	16.907	0.354	0.354	
2	3	2	Car Other	All	2023	0.082	0.005	16.907	15.106	15.106	

2	1	2	Car	Other	All	2023	0.082	0.005	16.907	73.373	73.373
2	4	2	Car	Other	All	2023	0.082	0.005	16.907	21.580	21.580
2	1	2	OGV2	Business	All	2023	0.003	0.000	16.907	3.021	3.021
2	3	2	OGV2	Business	All	2023	0.003	0.000	16.907	0.622	0.622

Displayed 20 warnings of a total of 196 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Cal_Speed	DM_trips	VOC_Speed
4	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.153	130.000
4	1	4	Car	Other	All	2037	1.153	0.000	7142.857	1.729	130.000
3	2	4	Car	Other	All	2023	1.153	0.000	7142.857	1.153	130.000
4	1	4	Car	Other	All	2023	1.153	0.000	7142.857	1.729	130.000
4	3	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
3	2	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
4	2	4	Car	Other	All	2023	1.153	0.000	7142.857	1.153	130.000
4	3	4	Car	Other	All	2023	1.153	0.000	7142.857	0.576	130.000
4	1	3	Car	Other	All	2037	1.330	0.000	4545.455	24.602	130.000
4	2	3	Car	Other	All	2023	1.330	0.000	4545.455	18.618	130.000
4	3	3	Car	Other	All	2023	1.330	0.000	4545.455	3.990	130.000
4	2	3	Car	Other	All	2037	1.330	0.000	4545.455	17.953	130.000
4	3	3	Car	Other	All	2037	1.330	0.000	4545.455	4.655	130.000
4	1	3	Car	Other	All	2023	1.330	0.000	4545.455	23.937	130.000
3	2	3	Car	Other	All	2023	1.330	0.000	4000.000	11.969	130.000
3	2	3	Car	Other	All	2037	1.330	0.000	3773.585	11.304	130.000
4	3	2	Car	Commuting	All	2023	0.564	0.000	3278.689	1.975	130.000

4	1	2	Car	Commuting	All	2023	0.564	0.000	3278.689	68.263	130.000
4	2	2	Car	Commuting	All	2023	0.564	0.000	3278.689	14.104	130.000
4	3	2	Car	Commuting	All	2037	0.564	0.000	3278.689	1.410	130.000

Displayed 20 warnings of a total of 229 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Cal_Speed	DS_trips	VOC_Speed
1	4	4	Car	Business	All	2037	0.074	0.000	584.795	0.148	130.000
1	4	4	OGV2	Business	All	2037	0.118	0.000	584.795	0.236	85.000
1	4	4	Car	Other	All	2037	1.153	0.002	584.795	2.306	130.000
1	4	4	Car	Commuting	All	2037	0.495	0.001	584.795	0.990	130.000
1	4	4	LGV Freight	Business	All	2037	0.096	0.000	584.795	0.192	110.000
2	3	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.096	110.000
3	4	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.000	110.000
2	1	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.241	110.000
2	4	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.144	110.000
2	4	4	Car	Business	All	2037	0.074	0.000	566.572	0.111	130.000
2	1	4	Car	Commuting	All	2037	0.495	0.001	566.572	1.238	130.000
2	3	4	Car	Business	All	2037	0.074	0.000	566.572	0.074	130.000
2	4	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.743	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	566.572	0.000	130.000
3	4	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.000	130.000
2	3	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.495	130.000
2	1	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.295	85.000
2	3	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.118	85.000

2	4	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.177	85.000
3	4	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.000	85.000

Displayed 20 warnings of a total of 299 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time
3	2	1	Car	Business	All	2023	0.000	0.000
4	1	1	Car	Business	All	2023	0.000	0.000
4	2	1	Car	Business	All	2023	0.000	0.000
4	3	1	Car	Business	All	2023	0.000	0.000
3	2	1	Car	Business	All	2037	0.000	0.000
4	1	1	Car	Business	All	2037	0.000	0.000
4	2	1	Car	Business	All	2037	0.000	0.000
4	3	1	Car	Business	All	2037	0.000	0.000
3	2	1	Car	Commuting	All	2023	0.000	0.000
4	1	1	Car	Commuting	All	2023	0.000	0.000
4	2	1	Car	Commuting	All	2023	0.000	0.000
4	3	1	Car	Commuting	All	2023	0.000	0.000
3	2	1	Car	Commuting	All	2037	0.000	0.000
4	1	1	Car	Commuting	All	2037	0.000	0.000
4	2	1	Car	Commuting	All	2037	0.000	0.000
4	3	1	Car	Commuting	All	2037	0.000	0.000
3	2	1	Car	Other	All	2023	0.000	0.000
4	1	1	Car	Other	All	2023	0.000	0.000
4	2	1	Car	Other	All	2023	0.000	0.000

4 3 1 Car Other All 2023 0.000 0.000

Displayed 20 warnings of a total of 224 of this type.

#### TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-7\_Kirk Hill\_V4.1\_Low\_15OB

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.1\_Low\_15OB.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2082

Modelled years 2023 2037

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750



Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0

Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0
Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0



Road	2021	94	138	4106	17	0	0	0	0
Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	0	398
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0
Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0
Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0

Road	2046	0	0	0	0	2	0	0	0
Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0

Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0
Road	2081	0	0	0	0	2	0	0	0
Road	2082	0	0	0	0	2	0	0	0

PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
Road	2020	0	51	51
Road	2021	0	2983	2983
Road	2022	0	657	657
Road	2023	0	8	8
Road	2024	0	1	1
Road	2025	0	1	1
Road	2026	0	1	1
Road	2027	0	1	1
Road	2028	0	6	6

Road	2029	0	1	1
Road	2030	0	1	1
Road	2031	0	1	1
Road	2032	0	1	1
Road	2033	0	19	19
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	4	4
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10

Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55
Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1

Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887

TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1415	1415
Car	2023	PM peak	1762	1762
Car	2023	Inter-peak	3855	3855
Car	2023	Off-peak	516	516
Car	2023	All	7547	7547
Car	2037	AM peak	1415	1415
Car	2037	PM peak	1729	1729
Car	2037	Inter-peak	4089	4089
Car	2037	Off-peak	543	543
Car	2037	All	7776	7776
LGV Personal	2023	AM peak	26	26
LGV Personal	2023	PM peak	26	26
LGV Personal	2023	Inter-peak	77	77
LGV Personal	2023	Off-peak	4	4
LGV Personal	2023	All	132	132
LGV Personal	2037	AM peak	26	26

LGV Personal	2037	PM peak	25	25
LGV Personal	2037	Inter-peak	82	82
LGV Personal	2037	Off-peak	4	4
LGV Personal	2037	All	136	136
LGV Freight	2023	AM peak	188	188
LGV Freight	2023	PM peak	189	189
LGV Freight	2023	Inter-peak	564	564
LGV Freight	2023	Off-peak	29	29
LGV Freight	2023	All	969	969
LGV Freight	2037	AM peak	188	188
LGV Freight	2037	PM peak	185	185
LGV Freight	2037	Inter-peak	598	598
LGV Freight	2037	Off-peak	30	30
LGV Freight	2037	All	1001	1001
OGV1	2023	AM peak	14	14
OGV1	2023	PM peak	13	13
OGV1	2023	Inter-peak	74	74
OGV1	2023	Off-peak	15	15
OGV1	2023	All	117	117
OGV1	2037	AM peak	14	14
OGV1	2037	PM peak	13	13
OGV1	2037	Inter-peak	79	79
OGV1	2037	Off-peak	16	16
OGV1	2037	All	122	122
OGV2	2023	AM peak	24	24

OGV2	2023 PM peak	45	45
OGV2	2023 Inter-peak	157	157
OGV2	2023 Off-peak	35	35
OGV2	2023 All	262	262
OGV2	2037 AM peak	24	24
OGV2	2037 PM peak	44	44
OGV2	2037 Inter-peak	167	167
OGV2	2037 Off-peak	37	37
OGV2	2037 All	272	272
All	2023 AM peak	1666	1666
All	2023 PM peak	2035	2035
All	2023 Inter-peak	4726	4726
All	2023 Off-peak	599	599
All	2023 All	9026	9026
All	2037 AM peak	1666	1666
All	2037 PM peak	1997	1997
All	2037 Inter-peak	5014	5014
All	2037 Off-peak	630	630
All	2037 All	9307	9307

DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	505	0	325	234	392	0	296	233
Road	2037	438	0	173	149	318	0	157	149



FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	222	206	34	200	188	32
Car	2037	175	122	269	156	110	252
LGV Personal	2023	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0
LGV Freight	2023	0	18	0	0	17	0
LGV Freight	2037	0	15	8	0	14	8
OGV1	2023	0	0	0	0	0	0
OGV1	2037	0	0	0	0	1	0
OGV2	2023	0	5	0	0	5	0
OGV2	2037	0	5	0	0	5	0
All	2023	222	229	34	200	210	32
All	2037	175	142	277	156	130	260
Car	Total	9191	6547	20684	8217	5923	19397
LGV Personal	Total	0	10	8	0	13	11
LGV Freight	Total	6	855	692	6	801	691
OGV1	Total	0	19	0	0	30	0
OGV2	Total	0	298	0	0	285	0
All	Total	9198	7728	21384	8223	7052	20100

CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	958	869	-89	19	17	-2	39	35	-4	58	53	-5
Car	2037	657	589	-68	15	14	-2	30	27	-3	45	40	-5
LGV Personal	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	1	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	43	41	-2	1	1	-0	2	2	-0	3	2	-0
LGV Freight	2037	37	35	-2	1	1	-0	2	2	-0	3	2	-0
OGV1	2023	1	1	0	0	0	0	0	0	0	0	0	0
OGV1	2037	1	1	0	0	0	0	0	0	0	0	0	0
OGV2	2023	11	11	-0	0	0	-0	0	0	-0	1	1	-0
OGV2	2037	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2023	1014	923	-91	20	18	-2	41	37	-4	61	56	-6
All	2024	991	901	-89	20	18	-2	39	36	-4	59	54	-5
All	2025	963	875	-88	19	17	-2	37	34	-3	56	51	-5
All	2026	938	852	-86	18	16	-2	36	32	-3	54	49	-5
All	2027	914	829	-84	17	16	-2	34	31	-3	51	47	-5
All	2028	887	804	-83	16	15	-2	33	30	-3	49	44	-5
All	2029	863	782	-81	16	14	-1	31	28	-3	47	42	-4
All	2030	840	761	-79	15	13	-1	30	27	-3	44	40	-4
All	2031	815	738	-78	15	14	-1	30	27	-3	45	41	-4
All	2032	795	719	-76	16	14	-1	31	28	-3	47	42	-4
All	2033	777	702	-75	16	14	-2	32	28	-3	47	43	-5
All	2034	756	683	-73	16	14	-2	32	29	-3	48	43	-5
All	2035	740	668	-72	16	14	-2	32	29	-3	48	44	-5

All	2036	725	654	-71	16	15	-2	32	29	-3	49	44	-5
All	2037	708	638	-70	16	15	-2	32	29	-3	49	44	-5
All	2038	692	624	-68	16	14	-2	32	29	-3	48	44	-5
All	2039	677	610	-67	16	14	-2	32	29	-3	48	44	-5
All	2040	660	595	-65	16	14	-2	32	29	-3	48	43	-5
All	2041	646	582	-64	16	14	-2	31	28	-3	47	43	-5
All	2042	632	570	-62	16	14	-2	31	28	-3	47	42	-5
All	2043	617	556	-61	15	14	-2	31	28	-3	46	42	-5
All	2044	604	545	-60	15	14	-1	30	27	-3	45	41	-4
All	2045	593	534	-58	15	14	-1	30	27	-3	45	40	-4
All	2046	579	522	-57	15	13	-1	29	26	-3	44	40	-4
All	2047	569	513	-56	14	13	-1	29	26	-3	43	39	-4
All	2048	558	503	-55	14	13	-1	28	26	-3	43	38	-4
All	2049	546	492	-54	14	13	-1	28	25	-3	42	37	-4
All	2050	535	482	-53	14	12	-1	27	24	-3	41	37	-4
All	2051	535	482	-53	13	12	-1	27	25	-3	41	37	-4
All	2052	535	482	-53	13	12	-1	27	25	-3	41	37	-4
All	2053	535	482	-53	13	12	-1	27	25	-3	41	37	-4
All	2054	535	482	-53	13	12	-1	27	25	-3	42	38	-4
All	2055	535	482	-53	13	12	-1	27	25	-3	42	38	-4
All	2056	535	482	-53	13	12	-1	27	25	-3	42	38	-4
All	2057	535	482	-53	13	11	-1	27	25	-3	42	38	-4
All	2058	535	482	-53	13	11	-1	27	24	-3	42	38	-4
All	2059	535	482	-53	12	11	-1	27	24	-3	42	38	-4
All	2060	535	482	-53	12	11	-1	27	24	-3	42	38	-4

All	2061	535	482	-53	12	11	-1	27	24	-3	41	37	-4
All	2062	535	482	-53	12	10	-1	26	24	-3	41	37	-4
All	2063	535	482	-53	11	10	-1	26	23	-3	40	36	-4
All	2064	535	482	-53	11	10	-1	25	23	-2	40	36	-4
All	2065	535	482	-53	11	10	-1	25	23	-2	39	36	-4
All	2066	535	482	-53	10	9	-1	25	22	-2	39	35	-4
All	2067	535	482	-53	10	9	-1	24	22	-2	38	34	-4
All	2068	535	482	-53	10	9	-1	24	21	-2	38	34	-4
All	2069	535	482	-53	9	8	-1	23	21	-2	37	33	-4
All	2070	535	482	-53	9	8	-1	23	20	-2	36	33	-4
All	2071	535	482	-53	9	8	-1	22	20	-2	35	32	-3
All	2072	535	482	-53	8	8	-1	22	19	-2	35	31	-3
All	2073	535	482	-53	8	7	-1	21	19	-2	34	31	-3
All	2074	535	482	-53	8	7	-1	20	18	-2	33	30	-3
All	2075	535	482	-53	7	7	-1	20	18	-2	32	29	-3
All	2076	535	482	-53	7	6	-1	19	17	-2	32	28	-3
All	2077	535	482	-53	7	6	-1	19	17	-2	31	28	-3
All	2078	535	482	-53	7	6	-1	18	16	-2	30	27	-3
All	2079	535	482	-53	6	6	-1	18	16	-2	29	26	-3
All	2080	535	482	-53	6	5	-1	17	15	-2	28	25	-3
All	2081	535	482	-53	6	5	-1	17	15	-2	27	25	-3
All	2082	535	482	-53	5	5	-1	16	14	-2	27	24	-3
Car	Total	34880	31351	-3529	707	635	-72	1517	1363	-154	2327	2091	-236
LGV Personal	Total	24	32	7	0	1	0	1	1	0	2	2	0
LGV Freight	Total	2082	1950	-132	42	40	-3	91	85	-6	140	131	-9

OGV1	Total	46	73	28	1	1	1	2	3	1	3	5	2
OGV2	Total	720	689	-31	15	14	-1	32	30	-1	49	47	-2
All	Total	37752	34095	-3657	765	691	-74	1643	1483	-159	2521	2276	-245

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	9	8	-1	0	0	-0	0	0	-0	0	0	-0
Car	2037	16	15	-1	0	0	-0	1	1	-0	1	1	-0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2037	0	0	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	9	8	-1	0	0	-0	0	0	-0	0	0	-0
All	2024	11	10	-1	0	0	-0	0	0	-0	0	0	-0
All	2025	13	12	-1	0	0	-0	0	0	-0	0	0	-0
All	2026	15	14	-1	0	0	-0	0	0	-0	1	1	-0
All	2027	17	16	-1	0	0	-0	1	0	-0	1	1	-0
All	2028	19	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2029	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2030	19	18	-1	0	0	-0	1	1	-0	1	1	-0

All	2031	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2032	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2033	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2034	18	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2035	18	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2036	17	16	-1	0	0	-0	1	1	-0	1	1	-0
All	2037	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2038	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2039	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2040	13	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2041	13	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2042	13	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2043	13	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2044	13	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2045	13	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2046	13	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2047	13	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2048	13	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2049	13	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2050	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2051	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2052	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2053	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2054	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2055	12	12	-1	0	0	-0	1	1	-0	1	1	-0

All	2056	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2057	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2058	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2059	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2060	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2061	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2062	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2063	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2064	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2065	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2066	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2067	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2068	12	12	-1	0	0	-0	1	1	-0	1	1	-0
All	2069	12	12	-1	0	0	-0	1	0	-0	1	1	-0
All	2070	12	12	-1	0	0	-0	1	0	-0	1	1	-0
All	2071	12	12	-1	0	0	-0	1	0	-0	1	1	-0
All	2072	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2073	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2074	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2075	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2076	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2077	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2078	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2079	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2080	12	12	-1	0	0	-0	0	0	-0	1	1	-0

All	2081	12	12	-1	0	0	-0	0	0	-0	1	1	-0
All	2082	12	12	-1	0	0	-0	0	0	-0	1	1	-0
Car	Total	789	740	-49	16	15	-1	34	31	-2	52	48	-3
LGV Personal	Total	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	24	24	-0	1	1	-0	1	1	-0	2	2	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	814	765	-49	17	16	-1	35	32	-2	53	50	-3

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	142	140	-2	3	3	-0	6	6	-0	9	8	-0
AM peak	2037	103	93	-10	2	2	-0	5	4	-0	7	6	-1
PM peak	2023	213	174	-39	4	3	-1	9	7	-2	13	11	-2
PM peak	2037	138	111	-27	3	3	-1	6	5	-1	10	8	-2
Inter-peak	2023	595	549	-46	12	11	-1	24	22	-2	36	33	-3
Inter-peak	2037	421	390	-31	10	9	-1	19	18	-1	29	27	-2
Off-peak	2023	65	60	-5	1	1	-0	3	2	-0	4	4	-0
Off-peak	2037	46	43	-3	1	1	-0	2	2	-0	3	3	-0
AM peak	Total	5445	5006	-439	110	101	-9	237	218	-19	364	334	-30
PM peak	Total	7463	6025	-1438	151	122	-29	324	262	-63	497	401	-96
Inter-peak	Total	22385	20756	-1630	454	421	-33	974	903	-71	1495	1387	-109
Off-peak	Total	2458	2308	-150	50	47	-3	107	101	-7	164	154	-10



NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	1	1	-0	0	0	-0	0	0	0	0	0	-0
AM peak	2037	2	2	-0	0	0	-0	0	0	0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	0	0	0	-0
PM peak	2037	3	3	-0	0	0	-0	0	0	0	0	0	-0
Inter-peak	2023	5	5	-0	0	0	-0	0	0	0	0	0	-0
Inter-peak	2037	10	9	-0	0	0	-0	0	0	-0	1	1	-0
Off-peak	2023	1	1	-0	0	0	-0	0	0	0	0	0	-0
Off-peak	2037	1	1	-0	0	0	-0	0	0	0	0	0	-0
AM peak	Total	118	111	-7	2	2	-0	5	5	-0	8	7	-0
PM peak	Total	159	143	-16	3	3	-0	7	6	-1	10	9	-1
Inter-peak	Total	486	462	-24	10	9	-0	21	20	-1	32	30	-2
Off-peak	Total	51	49	-2	1	1	-0	2	2	0	3	3	-0

#### MODE

User benefits and changes in revenues by mode, all years. E000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	114	0	29	0	0	-16
Road	2024	114	0	28	0	0	-16
Road	2025	114	0	27	0	0	-15
Road	2026	115	0	26	0	0	-14
Road	2027	115	0	25	0	0	-14
Road	2028	116	0	24	0	0	-13
Road	2029	116	0	23	0	0	-13
Road	2030	117	0	22	0	0	-12
Road	2031	117	0	21	0	0	-11
Road	2032	118	0	20	0	0	-11
Road	2033	118	0	20	0	0	-10
Road	2034	119	0	19	0	0	-10
Road	2035	119	0	18	0	0	-10
Road	2036	120	0	17	0	0	-9
Road	2037	120	0	17	0	0	-9
Road	2038	118	0	16	0	0	-8
Road	2039	116	0	15	0	0	-8
Road	2040	115	0	14	0	0	-8
Road	2041	113	0	14	0	0	-7
Road	2042	111	0	13	0	0	-7
Road	2043	110	0	12	0	0	-6
Road	2044	108	0	12	0	0	-6
Road	2045	106	0	11	0	0	-6

Road	2046	105	0	11	0	0	-6
Road	2047	103	0	10	0	0	-5
Road	2048	101	0	10	0	0	-5
Road	2049	100	0	9	0	0	-5
Road	2050	98	0	9	0	0	-5
Road	2051	97	0	9	0	0	-4
Road	2052	96	0	8	0	0	-4
Road	2053	95	0	8	0	0	-4
Road	2054	94	0	8	0	0	-4
Road	2055	93	0	8	0	0	-4
Road	2056	92	0	8	0	0	-4
Road	2057	92	0	7	0	0	-4
Road	2058	91	0	7	0	0	-4
Road	2059	90	0	7	0	0	-4
Road	2060	89	0	7	0	0	-4
Road	2061	88	0	7	0	0	-4
Road	2062	87	0	7	0	0	-3
Road	2063	86	0	6	0	0	-3
Road	2064	86	0	6	0	0	-3
Road	2065	85	0	6	0	0	-3
Road	2066	84	0	6	0	0	-3
Road	2067	83	0	6	0	0	-3
Road	2068	83	0	6	0	0	-3
Road	2069	82	0	5	0	0	-3
Road	2070	81	0	5	0	0	-3

Road	2071	81	0	5	0	0	-3
Road	2072	80	0	5	0	0	-3
Road	2073	79	0	5	0	0	-3
Road	2074	79	0	5	0	0	-3
Road	2075	78	0	5	0	0	-3
Road	2076	77	0	5	0	0	-3
Road	2077	76	0	4	0	0	-2
Road	2078	76	0	4	0	0	-2
Road	2079	75	0	4	0	0	-2
Road	2080	74	0	4	0	0	-2
Road	2081	74	0	4	0	0	-2
Road	2082	73	0	4	0	0	-2
Road	Total	5853	0	684	10	0	-367

SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	109	0	29	0	0	-16
Car	2037	114	0	16	0	0	-9
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	5	0	1	0	0	-0
LGV Freight	2037	6	0	1	0	0	-0
OGV1	2023	-0	0	-0	-0	0	0

OGV1	2037	-0	0	-0	-0	0	0
OGV2	2023	0	0	0	0	0	-0
OGV2	2037	0	0	0	0	0	-0
All	2023	114	0	29	0	0	-16
All	2037	120	0	17	0	0	-9
Car	Total	5576	0	664	4	0	-356
LGV Personal	Total	2	0	-1	0	0	1
LGV Freight	Total	274	0	20	6	0	-11
OGV1	Total	-1	0	-4	-0	0	2
OGV2	Total	1	0	5	0	0	-3
All	Total	5853	0	684	10	0	-367

PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri			PT_fares_(pri		Taxes
All	2023	114	0	29	0	0		-16
All	2037	120	0	17	0	0		-9
All	Total	5853	0	684	10	0		-367

PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel	Operator_Rev	Indirect
		Time	PT_fares_(pri			PT_fares_(pri		Taxes
Business	2023	5	0	1	0	0		-0

Business	2037	7	0	1	0	0	-0
Commuting	2023	50	0	3	0	0	-2
Commuting	2037	51	0	2	0	0	-1
Other	2023	59	0	26	0	0	-14
Other	2037	62	0	14	0	0	-7
Business	Total	318	0	21	10	0	-12
Commuting	Total	2518	0	83	0	0	-45
Other	Total	3017	0	580	0	0	-310

PERIOD

User benefits and changes in revenues by time period, modelled years and total. E000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	50	0	1	0	0	-0
AM peak	2037	74	0	2	0	0	-1
PM peak	2023	126	0	13	0	0	-7
PM peak	2037	95	0	6	0	0	-3
Inter-peak	2023	-56	0	15	-0	0	-8
Inter-peak	2037	-45	0	7	-0	0	-4
Off-peak	2023	-6	0	2	-0	0	-1
Off-peak	2037	-4	0	1	-0	0	-0
AM peak	Total	3458	0	76	9	0	-40
PM peak	Total	4889	0	269	9	0	-147
Inter-peak	Total	-2275	0	310	-7	0	-164
Off-peak	Total	-220	0	29	-1	0	-16

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	0	0	0
Car	Business	2037	0	0	-0	0	0	0
Car	Business	Total	0	0	-7	18	0	0
Car	Commuting	2023	0	0	-2	7	2	0
Car	Commuting	2037	0	0	-2	9	2	0
Car	Commuting	Total	0	0	-92	509	100	0
Car	Other	2023	0	0	-24	31	10	0
Car	Other	2037	0	0	-24	38	9	0
Car	Other	Total	0	0	-1452	2237	572	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	2	0	0
LGV Freight	Business	2023	0	0	-1	1	0	0
LGV Freight	Business	2037	0	0	-1	1	0	0
LGV Freight	Business	Total	0	0	-31	76	0	0

LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-2	2	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0



MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	1	0	0
Car	Business	2037	0	0	-1	1	0	0
Car	Business	Total	0	0	-29	72	0	0
Car	Commuting	2023	0	0	-11	48	13	0
Car	Commuting	2037	0	0	-9	51	10	0
Car	Commuting	Total	0	0	-452	2478	492	0
Car	Other	2023	0	0	-81	105	34	0
Car	Other	2037	0	0	-64	101	25	0
Car	Other	Total	0	0	-3266	4990	1291	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-2	4	0	0
LGV Freight	Business	2023	0	0	-5	9	0	0
LGV Freight	Business	2037	0	0	-4	9	0	0
LGV Freight	Business	Total	0	0	-190	464	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0

LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-3	3	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-16	17	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	2	0	0
Car	Business	2037	0	0	-1	2	0	0
Car	Business	Total	0	0	-32	79	0	0
Car	Commuting	2023	0	0	-10	50	13	0
Car	Commuting	2037	0	0	-8	52	10	0
Car	Commuting	Total	0	0	-431	2533	500	0
Car	Other	2023	0	0	-73	122	36	0
Car	Other	2037	0	0	-61	111	26	0
Car	Other	Total	0	0	-3115	5394	1318	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-3	4	0	0
LGV Freight	Business	2023	0	0	-4	9	0	0
LGV Freight	Business	2037	0	0	-3	10	0	0
LGV Freight	Business	Total	0	0	-166	465	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0

LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-8	4	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	1	0	0
OGV2	Business	2037	0	0	-0	1	0	0
OGV2	Business	Total	0	0	-20	26	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance



LGV Freight	Other	2023	0	0	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-0	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	0	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type Purpose Year < 1 kms 1 to 5 kms 5 to 10 kms 10 to 25 kms 25 to 50 kms 50 to 100 kms 100 to 200 kms >200 kms



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-1	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	1	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	1	0	0	0	0	0	0





LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-5	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	6	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023 2037

Road 13.47% 17.97%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	2518	2518
Vehicle operating costs	83	83
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>2601</b>	<b>2601</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	3017	3017
Vehicle operating costs	580	580
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>3597</b>	<b>3597</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	318	43	275
Vehicle operating costs	31	5	26
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>349</b>	<b>48</b>	<b>301</b>

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	-255	-255
NET BUSINESS IMPACT	94	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	6292
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
NET IMPACT	738	738

Central Government Funding: Transport ALL MODES Road

Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

Central Government Funding: Non-Transport

Indirect Tax Revenues	367	367
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TOTALS

Broad Transport Budget	3632	3632
Wider Public Finances	367	367

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	159
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Economic Efficiency: Consumer Users (Commuting)	2601
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Economic Efficiency: Consumer Users (Other)	3597
Economic Efficiency: Business Users and Providers	94
Wider Public Finances (Indirect Taxation Revenues)	-367
Present Value of Benefits (PVB)	6084
Broad Transport Budget	3632
Present Value of Costs (PVC)	3632
OVERALL IMPACTS	
Net Present Value (NPV)	2452
Benefit to Cost Ratio (BCR)	1.675

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4.1\_Low\_150B

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.1\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Low\_V4.1\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.1\_Low\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Low\_V4.1\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.1\_Low\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 4secs

ERRORS AND WARNINGS

990 Warnings found in total (including any above)

Warning (14 serious): Ratio of DM to DS travel time lower than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
1	3	4	OGV2	Business	All	2023	0.000	0.001	0.312	3.071	3.071
1	3	4	OGV1	Business	All	2023	0.000	0.000	0.312	1.308	1.308
1	3	4	Car	Other	All	2023	0.002	0.005	0.312	29.973	29.973
1	3	4	Car	Business	All	2023	0.000	0.000	0.312	1.929	1.929
1	3	4	LGV Freight	Business	All	2023	0.000	0.000	0.312	2.502	2.502
1	3	4	Car	Commuting	All	2023	0.001	0.002	0.312	12.876	12.876
1	3	4	LGV Personal	Other	All	2023	0.000	0.000	0.312	0.341	0.341
1	3	4	Car	Business	All	2037	0.000	0.000	0.328	2.115	2.115
1	3	4	OGV2	Business	All	2037	0.000	0.000	0.328	3.366	3.366
1	3	4	LGV Personal	Other	All	2037	0.000	0.000	0.328	0.374	0.374
1	3	4	OGV1	Business	All	2037	0.000	0.000	0.328	1.434	1.434
1	3	4	LGV Freight	Business	All	2037	0.000	0.000	0.328	2.742	2.742
1	3	4	Car	Commuting	All	2037	0.001	0.002	0.328	14.114	14.114
1	3	4	Car	Other	All	2037	0.002	0.005	0.328	32.855	32.855
1	3	3	Car	Other	All	2023	0.003	0.007	0.416	408.267	408.267
1	3	3	LGV Personal	Other	All	2023	0.000	0.000	0.416	9.984	9.984
1	3	3	OGV2	Business	All	2023	0.000	0.000	0.416	20.403	20.403
1	3	3	Car	Business	All	2023	0.000	0.001	0.416	36.005	36.005
1	3	3	OGV1	Business	All	2023	0.000	0.000	0.416	9.628	9.628
1	3	3	Car	Commuting	All	2023	0.000	0.001	0.416	56.494	56.494

Displayed 20 warnings of a total of 42 of this type.

Warning (168 serious): Ratio of DM to DS travel time higher than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_time	DS_time	Ratio	DM_trips	DS_trips
2	4	2	LGV Personal	Other	All	2023	0.002	0.000	16.907	0.506	0.506
2	1	2	LGV Freight	Business	All	2023	0.014	0.001	16.907	12.614	12.614
2	3	2	LGV Freight	Business	All	2023	0.014	0.001	16.907	2.597	2.597
2	4	2	LGV Freight	Business	All	2023	0.014	0.001	16.907	3.710	3.710
2	1	2	LGV Personal	Other	All	2023	0.002	0.000	16.907	1.720	1.720
2	1	2	OGV1	Business	All	2023	0.001	0.000	16.907	0.887	0.887
2	4	2	OGV1	Business	All	2023	0.001	0.000	16.907	0.261	0.261
2	3	2	OGV1	Business	All	2023	0.001	0.000	16.907	0.183	0.183
2	4	2	Car	Commuting	All	2023	0.043	0.003	16.907	11.283	11.283
2	1	2	Car	Business	All	2023	0.007	0.000	16.907	6.022	6.022



2	3	2	Car	Commuting	All	2023	0.043	0.003	16.907	7.898	7.898	
2	3	2	Car	Business	All	2023	0.007	0.000	16.907	1.240	1.240	
2	1	2	Car	Commuting	All	2023	0.043	0.003	16.907	38.363	38.363	
2	4	2	Car	Business	All	2023	0.007	0.000	16.907	1.771	1.771	
2	3	2	LGV	Personal	Other	All	2023	0.002	0.000	16.907	0.354	0.354
2	3	2	Car	Other	All	2023	0.082	0.005	16.907	15.106	15.106	
2	1	2	Car	Other	All	2023	0.082	0.005	16.907	73.373	73.373	
2	4	2	Car	Other	All	2023	0.082	0.005	16.907	21.580	21.580	
2	1	2	OGV2	Business	All	2023	0.003	0.000	16.907	3.021	3.021	
2	3	2	OGV2	Business	All	2023	0.003	0.000	16.907	0.622	0.622	

Displayed 20 warnings of a total of 196 of this type.

Warning: DM speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DM_dist	DM_time	Ca_Speed	DM_trips	VOC_Speed
4	2	4	Car	Other	All	2037	1.153	0.000	7142.857	1.153	130.000
4	1	4	Car	Other	All	2037	1.153	0.000	7142.857	1.729	130.000
3	2	4	Car	Other	All	2023	1.153	0.000	7142.857	1.153	130.000
4	1	4	Car	Other	All	2023	1.153	0.000	7142.857	1.729	130.000
4	3	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
3	2	4	Car	Other	All	2037	1.153	0.000	7142.857	0.576	130.000
4	2	4	Car	Other	All	2023	1.153	0.000	7142.857	1.153	130.000
4	3	4	Car	Other	All	2023	1.153	0.000	7142.857	0.576	130.000
4	1	3	Car	Other	All	2037	1.330	0.000	4545.455	24.602	130.000
4	2	3	Car	Other	All	2023	1.330	0.000	4545.455	18.618	130.000
4	3	3	Car	Other	All	2023	1.330	0.000	4545.455	3.990	130.000
4	2	3	Car	Other	All	2037	1.330	0.000	4545.455	17.953	130.000
4	3	3	Car	Other	All	2037	1.330	0.000	4545.455	4.655	130.000
4	1	3	Car	Other	All	2023	1.330	0.000	4545.455	23.937	130.000
3	2	3	Car	Other	All	2023	1.330	0.000	4000.000	11.969	130.000
3	2	3	Car	Other	All	2037	1.330	0.000	3773.585	11.304	130.000
4	3	2	Car	Commuting	All	2023	0.564	0.000	3278.689	1.975	130.000
4	1	2	Car	Commuting	All	2023	0.564	0.000	3278.689	68.263	130.000
4	2	2	Car	Commuting	All	2023	0.564	0.000	3278.689	14.104	130.000
4	3	2	Car	Commuting	All	2037	0.564	0.000	3278.689	1.410	130.000

Displayed 20 warnings of a total of 229 of this type.

Warning: DS speeds greater than limit for the following:

Origin	Destination	Time_slice	Veh_type	Purpose	Person_type	Year	DS_dist	DS_time	Ca_Speed	DS_trips	VOC_Speed	
1	4	4	Car	Business	All	2037	0.074	0.000	584.795	0.148	130.000	
1	4	4	OGV2	Business	All	2037	0.118	0.000	584.795	0.236	85.000	
1	4	4	Car	Other	All	2037	1.153	0.002	584.795	2.306	130.000	
1	4	4	Car	Commuting	All	2037	0.495	0.001	584.795	0.990	130.000	
1	4	4	LGV	Freight	Business	All	2037	0.096	0.000	584.795	0.192	110.000
2	3	4	LGV	Freight	Business	All	2037	0.096	0.000	566.572	0.096	110.000

3	4	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.000	110.000
2	1	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.241	110.000
2	4	4	LGV Freight	Business	All	2037	0.096	0.000	566.572	0.144	110.000
2	4	4	Car	Business	All	2037	0.074	0.000	566.572	0.111	130.000
2	1	4	Car	Commuting	All	2037	0.495	0.001	566.572	1.238	130.000
2	3	4	Car	Business	All	2037	0.074	0.000	566.572	0.074	130.000
2	4	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.743	130.000
3	4	4	Car	Business	All	2037	0.074	0.000	566.572	0.000	130.000
3	4	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.000	130.000
2	3	4	Car	Commuting	All	2037	0.495	0.001	566.572	0.495	130.000
2	1	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.295	85.000
2	3	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.118	85.000
2	4	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.177	85.000
3	4	4	OGV2	Business	All	2037	0.118	0.000	566.572	0.000	85.000

Displayed 20 warnings of a total of 299 of this type.

Serious Warning: Possible introduction of new mode one of DM and DS time is zero, but not both, for the following:

Origin Destination Time\_slice Veh\_type Purpose Person\_type Year DM\_time DS\_time

3	2	1	Car	Business	All	2023	0.000	0.000
4	1	1	Car	Business	All	2023	0.000	0.000
4	2	1	Car	Business	All	2023	0.000	0.000
4	3	1	Car	Business	All	2023	0.000	0.000
3	2	1	Car	Business	All	2037	0.000	0.000
4	1	1	Car	Business	All	2037	0.000	0.000
4	2	1	Car	Business	All	2037	0.000	0.000
4	3	1	Car	Business	All	2037	0.000	0.000
3	2	1	Car	Commuting	All	2023	0.000	0.000
4	1	1	Car	Commuting	All	2023	0.000	0.000
4	2	1	Car	Commuting	All	2023	0.000	0.000
4	3	1	Car	Commuting	All	2023	0.000	0.000
3	2	1	Car	Commuting	All	2037	0.000	0.000
4	1	1	Car	Commuting	All	2037	0.000	0.000
4	2	1	Car	Commuting	All	2037	0.000	0.000
4	3	1	Car	Commuting	All	2037	0.000	0.000
3	2	1	Car	Other	All	2023	0.000	0.000
4	1	1	Car	Other	All	2023	0.000	0.000
4	2	1	Car	Other	All	2023	0.000	0.000
4	3	1	Car	Other	All	2023	0.000	0.000

Displayed 20 warnings of a total of 224 of this type.

TUBA ECONOMICS FILE DIFFERENCES

VALUE\_OF\_TIME\_GROWTH - (used)

\*\*\* change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.806	0.806	0.806
2020	2020	-12.854	-12.854	-12.854
2021	2021	8.276	8.276	8.276
2022	2022	4.090	4.090	4.090
2023	2023	1.778	1.778	1.778
2024	2024	1.604	1.604	1.604
2025	2025	1.484	1.484	1.484
2026	2026	1.484	1.484	1.484
2027	2027	1.480	1.480	1.480
2028	2028	1.480	1.480	1.480
2029	2029	1.463	1.463	1.463
2030	2030	1.440	1.440	1.440
2031	2031	1.413	1.413	1.413
2032	2032	1.390	1.390	1.390
2033	2033	1.387	1.387	1.387
2034	2034	1.371	1.371	1.371
2035	2035	1.345	1.345	1.345
2036	2036	1.478	1.478	1.478
2037	2037	1.475	1.475	1.475
2038	2038	1.467	1.467	1.467
2039	2039	1.442	1.442	1.442
2040	2040	1.416	1.416	1.416
2041	2041	1.397	1.397	1.397
2042	2042	1.375	1.375	1.375
2043	2043	1.350	1.350	1.350
2044	2044	1.332	1.332	1.332
2045	2045	1.320	1.320	1.320
2046	2046	1.310	1.310	1.310
2047	2047	1.291	1.291	1.291
2048	2048	1.282	1.282	1.282
2049	2049	1.281	1.281	1.281
2050	2050	1.291	1.291	1.291
2051	2051	1.307	1.307	1.307
2052	2052	1.320	1.320	1.320
2053	2053	1.332	1.332	1.332

2054	2054	1.338	1.338	1.338
2055	2055	1.358	1.358	1.358
2056	2056	1.370	1.370	1.370
2057	2057	1.385	1.385	1.385
2058	2058	1.398	1.398	1.398
2059	2059	1.406	1.406	1.406
2060	2060	1.417	1.417	1.417
2061	2061	1.437	1.437	1.437
2062	2062	1.444	1.444	1.444
2063	2063	1.456	1.456	1.456
2064	2064	1.466	1.466	1.466
2065	2065	1.482	1.482	1.482
2066	2066	1.540	1.540	1.540
2067	2067	1.608	1.608	1.608
2068	2068	1.531	1.531	1.531
2069	2069	1.521	1.521	1.521
2070	2070	1.500	1.500	1.500
2071	2071	1.500	1.500	1.500
2072	2072	1.500	1.500	1.500
2073	2073	1.500	1.500	1.500
2074	2074	1.500	1.500	1.500
2075	2075	1.500	1.500	1.500
2076	2076	1.500	1.500	1.500
2077	2077	1.500	1.500	1.500
2078	2078	1.500	1.500	1.500
2079	2079	1.500	1.500	1.500
2080	2080	1.500	1.500	1.500
2081	2081	1.500	1.500	1.500
2082	2082	1.500	1.500	1.500
2083	2083	1.500	1.500	1.500
2084	2084	1.500	1.500	1.500
2085	2085	1.500	1.500	1.500
2086	2086	1.500	1.500	1.500
2087	2087	1.500	1.500	1.500
2088	2088	1.500	1.500	1.500
2089	2089	1.500	1.500	1.500
2090	2090	1.500	1.500	1.500
2091	2091	1.500	1.500	1.500
2092	2092	1.500	1.500	1.500
2093	2093	1.500	1.500	1.500
2094	2094	1.500	1.500	1.500
2095	2095	1.500	1.500	1.500
2096	2096	1.500	1.500	1.500
2097	2097	1.500	1.500	1.500

2098	2098	1.500	1.500	1.500
2099	2099	1.500	1.500	1.500
2100	2100	1.500	1.500	1.500

VALUE\_OF\_TIME\_GROWTH - (std)

\*% change p.a.

*Start_yr	End_yr	VOT_Gr_purpose1	VOT_Gr_purpose2	VOT_Gr_purpose3 ..
2011	2011	0.697	0.697	0.697
2012	2012	0.810	0.810	0.810
2013	2013	1.501	1.501	1.501
2014	2014	1.828	1.828	1.828
2015	2015	1.549	1.549	1.549
2016	2016	1.083	1.083	1.083
2017	2017	1.287	1.287	1.287
2018	2018	0.738	0.738	0.738
2019	2019	0.799	0.799	0.799
2020	2020	0.863	0.863	0.863
2021	2021	1.052	1.052	1.052
2022	2022	1.085	1.085	1.085
2023	2023	1.107	1.107	1.107
2024	2024	1.275	1.275	1.275
2025	2025	1.422	1.422	1.422
2026	2026	1.545	1.545	1.545
2027	2027	1.656	1.656	1.656
2028	2028	1.758	1.758	1.758
2029	2029	1.805	1.805	1.805
2030	2030	1.900	1.900	1.900
2031	2031	1.894	1.894	1.894
2032	2032	1.885	1.885	1.885
2033	2033	1.869	1.869	1.869
2034	2034	1.880	1.880	1.880
2035	2035	1.910	1.910	1.910
2036	2036	1.970	1.970	1.970
2037	2037	1.983	1.983	1.983
2038	2038	1.985	1.985	1.985
2039	2039	1.970	1.970	1.970
2040	2040	1.946	1.946	1.946
2041	2041	1.951	1.951	1.951
2042	2042	1.952	1.952	1.952
2043	2043	1.938	1.938	1.938
2044	2044	1.916	1.916	1.916
2045	2045	1.906	1.906	1.906
2046	2046	1.900	1.900	1.900
2047	2047	1.881	1.881	1.881

2048	2048	1.870	1.870	1.870
2049	2049	1.873	1.873	1.873
2050	2050	1.894	1.894	1.894
2051	2051	1.978	1.978	1.978
2052	2052	1.987	1.987	1.987
2053	2053	1.990	1.990	1.990
2054	2054	1.976	1.976	1.976
2055	2055	1.948	1.948	1.948
2056	2056	1.961	1.961	1.961
2057	2057	1.965	1.965	1.965
2058	2058	1.973	1.973	1.973
2059	2059	1.972	1.972	1.972
2060	2060	1.985	1.985	1.985
2061	2061	2.008	2.008	2.008
2062	2062	2.022	2.022	2.022
2063	2063	2.038	2.038	2.038
2064	2064	2.064	2.064	2.064
2065	2065	2.133	2.133	2.133
2066	2066	2.145	2.145	2.145
2067	2067	2.137	2.137	2.137
2068	2068	2.125	2.125	2.125
2069	2069	2.120	2.120	2.120
2070	2070	2.115	2.115	2.115
2071	2071	2.111	2.111	2.111
2072	2072	2.108	2.108	2.108
2073	2073	2.105	2.105	2.105
2074	2074	2.103	2.103	2.103
2075	2075	2.102	2.102	2.102
2076	2076	2.101	2.101	2.101
2077	2077	2.101	2.101	2.101
2078	2078	2.102	2.102	2.102
2079	2079	2.103	2.103	2.103
2080	2080	2.104	2.104	2.104
2081	2081	2.105	2.105	2.105
2082	2082	2.106	2.106	2.106
2083	2083	2.107	2.107	2.107
2084	2084	2.108	2.108	2.108
2085	2085	2.109	2.109	2.109
2086	2086	2.109	2.109	2.109
2087	2087	2.109	2.109	2.109
2088	2088	2.108	2.108	2.108
2089	2089	2.108	2.108	2.108
2090	2090	2.107	2.107	2.107
2091	2091	2.105	2.105	2.105

2092	2092	2.104	2.104	2.104
2093	2093	2.102	2.102	2.102
2094	2094	2.101	2.101	2.101
2095	2095	2.099	2.099	2.099
2096	2096	2.098	2.098	2.098
2097	2097	2.097	2.097	2.097
2098	2098	2.097	2.097	2.097
2099	2099	2.097	2.097	2.097
2100	2100	2.097	2.097	2.097

FUEL\_COST\_CHANGES - (used)

\*% change p.a.

*Start_yr	End_yr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.648	0.391	0.000	-1.409
2021	2021	1	-0.418	0.736	0.000	0.000
2022	2022	1	0.668	0.825	0.000	0.000
2023	2023	1	1.233	0.827	0.000	0.000
2024	2024	1	1.186	0.724	0.000	0.000
2025	2025	1	0.983	0.698	0.000	0.000
2026	2026	1	1.947	0.685	0.000	0.000
2027	2027	1	0.955	0.674	0.000	0.000
2028	2028	1	0.946	0.665	0.000	0.000
2029	2029	1	1.874	0.656	0.000	0.000
2030	2030	1	0.920	0.649	0.000	0.000
2031	2031	1	0.000	0.642	0.000	0.000
2032	2032	1	0.000	0.636	0.000	0.000
2033	2033	1	0.000	0.630	0.000	0.000
2034	2034	1	0.000	0.625	0.000	0.000
2035	2035	1	0.000	0.620	0.000	0.000
2036	2036	1	0.000	0.629	0.000	0.000
2037	2037	1	0.000	0.625	0.000	0.000
2038	2038	1	0.000	0.622	0.000	0.000
2039	2039	1	0.000	0.587	0.000	0.000
2040	2040	1	0.000	0.587	0.000	0.000
2041	2041	1	0.000	0.587	0.000	0.000

2042	2042	1	0.000	0.586	0.000	0.000
2043	2043	1	0.000	0.587	0.000	0.000
2044	2044	1	0.000	0.587	0.000	0.000
2045	2045	1	0.000	0.586	0.000	0.000
2046	2046	1	0.000	0.587	0.000	0.000
2047	2047	1	0.000	0.587	0.000	0.000
2048	2048	1	0.000	0.587	0.000	0.000
2049	2049	1	0.000	0.587	0.000	0.000
2050	2050	1	0.000	0.587	0.000	0.000
2051	2051	1	0.000	0.587	0.000	0.000
2052	2052	1	0.000	0.587	0.000	0.000
2053	2053	1	0.000	0.587	0.000	0.000
2054	2054	1	0.000	0.587	0.000	0.000
2055	2055	1	0.000	0.587	0.000	0.000
2056	2056	1	0.000	0.587	0.000	0.000
2057	2057	1	0.000	0.587	0.000	0.000
2058	2058	1	0.000	0.587	0.000	0.000
2059	2059	1	0.000	0.586	0.000	0.000
2060	2060	1	0.000	0.587	0.000	0.000
2061	2061	1	0.000	0.587	0.000	0.000
2062	2062	1	0.000	0.587	0.000	0.000
2063	2063	1	0.000	0.587	0.000	0.000
2064	2064	1	0.000	0.587	0.000	0.000
2065	2065	1	0.000	0.587	0.000	0.000
2066	2066	1	0.000	0.587	0.000	0.000
2067	2067	1	0.000	0.587	0.000	0.000
2068	2068	1	0.000	0.587	0.000	0.000
2069	2069	1	0.000	0.587	0.000	0.000
2070	2070	1	0.000	0.587	0.000	0.000
2071	2071	1	0.000	0.587	0.000	0.000
2072	2072	1	0.000	0.587	0.000	0.000
2073	2073	1	0.000	0.587	0.000	0.000
2074	2074	1	0.000	0.587	0.000	0.000
2075	2075	1	0.000	0.587	0.000	0.000
2076	2076	1	0.000	0.587	0.000	0.000
2077	2077	1	0.000	0.587	0.000	0.000
2078	2078	1	0.000	0.587	0.000	0.000
2079	2079	1	0.000	0.587	0.000	0.000
2080	2080	1	0.000	0.587	0.000	0.000
2081	2081	1	0.000	0.587	0.000	0.000
2082	2082	1	0.000	0.587	0.000	0.000
2083	2083	1	0.000	0.587	0.000	0.000
2084	2084	1	0.000	0.587	0.000	0.000
2085	2085	1	0.000	0.587	0.000	0.000



2086	2086	1	0.000	0.587	0.000	0.000
2087	2087	1	0.000	0.587	0.000	0.000
2088	2088	1	0.000	0.587	0.000	0.000
2089	2089	1	0.000	0.587	0.000	0.000
2090	2090	1	0.000	0.587	0.000	0.000
2091	2091	1	0.000	0.587	0.000	0.000
2092	2092	1	0.000	0.587	0.000	0.000
2093	2093	1	0.000	0.587	0.000	0.000
2094	2094	1	0.000	0.587	0.000	0.000
2095	2095	1	0.000	0.587	0.000	0.000
2096	2096	1	0.000	0.587	0.000	0.000
2097	2097	1	0.000	0.587	0.000	0.000
2098	2098	1	0.000	0.587	0.000	0.000
2099	2099	1	0.000	0.587	0.000	0.000
2100	2100	1	0.000	0.587	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.662	0.391	0.000	-1.841
2021	2021	2	-0.425	0.736	0.000	0.000
2022	2022	2	0.723	0.825	0.000	0.000
2023	2023	2	1.288	0.827	0.000	0.000
2024	2024	2	1.240	0.724	0.000	0.000
2025	2025	2	1.036	0.698	0.000	0.000
2026	2026	2	2.051	0.685	0.000	0.000
2027	2027	2	1.005	0.674	0.000	0.000
2028	2028	2	0.995	0.665	0.000	0.000
2029	2029	2	1.970	0.656	0.000	0.000
2030	2030	2	0.966	0.649	0.000	0.000
2031	2031	2	0.000	0.642	0.000	0.000
2032	2032	2	0.000	0.636	0.000	0.000
2033	2033	2	0.000	0.630	0.000	0.000
2034	2034	2	0.000	0.625	0.000	0.000
2035	2035	2	0.000	0.620	0.000	0.000
2036	2036	2	0.000	0.629	0.000	0.000
2037	2037	2	0.000	0.625	0.000	0.000
2038	2038	2	0.000	0.622	0.000	0.000
2039	2039	2	0.000	0.587	0.000	0.000

2040	2040	2	0.000	0.587	0.000	0.000
2041	2041	2	0.000	0.587	0.000	0.000
2042	2042	2	0.000	0.586	0.000	0.000
2043	2043	2	0.000	0.587	0.000	0.000
2044	2044	2	0.000	0.587	0.000	0.000
2045	2045	2	0.000	0.586	0.000	0.000
2046	2046	2	0.000	0.587	0.000	0.000
2047	2047	2	0.000	0.587	0.000	0.000
2048	2048	2	0.000	0.587	0.000	0.000
2049	2049	2	0.000	0.587	0.000	0.000
2050	2050	2	0.000	0.587	0.000	0.000
2051	2051	2	0.000	0.587	0.000	0.000
2052	2052	2	0.000	0.587	0.000	0.000
2053	2053	2	0.000	0.587	0.000	0.000
2054	2054	2	0.000	0.587	0.000	0.000
2055	2055	2	0.000	0.587	0.000	0.000
2056	2056	2	0.000	0.587	0.000	0.000
2057	2057	2	0.000	0.587	0.000	0.000
2058	2058	2	0.000	0.587	0.000	0.000
2059	2059	2	0.000	0.586	0.000	0.000
2060	2060	2	0.000	0.587	0.000	0.000
2061	2061	2	0.000	0.587	0.000	0.000
2062	2062	2	0.000	0.587	0.000	0.000
2063	2063	2	0.000	0.587	0.000	0.000
2064	2064	2	0.000	0.587	0.000	0.000
2065	2065	2	0.000	0.587	0.000	0.000
2066	2066	2	0.000	0.587	0.000	0.000
2067	2067	2	0.000	0.587	0.000	0.000
2068	2068	2	0.000	0.587	0.000	0.000
2069	2069	2	0.000	0.587	0.000	0.000
2070	2070	2	0.000	0.587	0.000	0.000
2071	2071	2	0.000	0.587	0.000	0.000
2072	2072	2	0.000	0.587	0.000	0.000
2073	2073	2	0.000	0.587	0.000	0.000
2074	2074	2	0.000	0.587	0.000	0.000
2075	2075	2	0.000	0.587	0.000	0.000
2076	2076	2	0.000	0.587	0.000	0.000
2077	2077	2	0.000	0.587	0.000	0.000
2078	2078	2	0.000	0.587	0.000	0.000
2079	2079	2	0.000	0.587	0.000	0.000
2080	2080	2	0.000	0.587	0.000	0.000
2081	2081	2	0.000	0.587	0.000	0.000
2082	2082	2	0.000	0.587	0.000	0.000
2083	2083	2	0.000	0.587	0.000	0.000

2084	2084	2	0.000	0.587	0.000	0.000
2085	2085	2	0.000	0.587	0.000	0.000
2086	2086	2	0.000	0.587	0.000	0.000
2087	2087	2	0.000	0.587	0.000	0.000
2088	2088	2	0.000	0.587	0.000	0.000
2089	2089	2	0.000	0.587	0.000	0.000
2090	2090	2	0.000	0.587	0.000	0.000
2091	2091	2	0.000	0.587	0.000	0.000
2092	2092	2	0.000	0.587	0.000	0.000
2093	2093	2	0.000	0.587	0.000	0.000
2094	2094	2	0.000	0.587	0.000	0.000
2095	2095	2	0.000	0.587	0.000	0.000
2096	2096	2	0.000	0.587	0.000	0.000
2097	2097	2	0.000	0.587	0.000	0.000
2098	2098	2	0.000	0.587	0.000	0.000
2099	2099	2	0.000	0.587	0.000	0.000
2100	2100	2	0.000	0.587	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593
2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898

2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000
2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000

2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FUEL\_COST\_CHANGES - (std)

\*% change p.a.

*Start_ylr	End_ylr	fuel_type	resource	duty	VAT	CO2_Den_change
2011	2011	1	22.259	-0.269	14.286	-0.844
2012	2012	1	2.035	-2.054	0.000	-0.023
2013	2013	1	-3.554	-1.859	0.000	-0.438
2014	2014	1	-11.852	-1.797	0.000	-0.537
2015	2015	1	-28.462	-0.581	0.000	0.000
2016	2016	1	-7.303	-2.058	0.000	0.000
2017	2017	1	19.789	-1.867	0.000	-1.352
2018	2018	1	10.736	-2.392	0.000	-1.370
2019	2019	1	-3.671	0.148	0.000	-1.389
2020	2020	1	-0.444	1.194	0.000	-1.409
2021	2021	1	-0.335	1.096	0.000	0.000
2022	2022	1	0.869	1.043	0.000	0.000
2023	2023	1	1.314	1.018	0.000	0.000
2024	2024	1	0.993	0.789	0.000	0.000
2025	2025	1	0.983	0.873	0.000	0.000
2026	2026	1	1.947	0.871	0.000	0.000
2027	2027	1	0.955	0.871	0.000	0.000
2028	2028	1	0.946	0.872	0.000	0.000
2029	2029	1	1.874	0.874	0.000	0.000
2030	2030	1	0.920	0.877	0.000	0.000
2031	2031	1	0.000	0.870	0.000	0.000

2032	2032	1	0.000	0.864	0.000	0.000
2033	2033	1	0.000	0.858	0.000	0.000
2034	2034	1	0.000	0.853	0.000	0.000
2035	2035	1	0.000	0.848	0.000	0.000
2036	2036	1	0.000	0.844	0.000	0.000
2037	2037	1	0.000	0.840	0.000	0.000
2038	2038	1	0.000	0.837	0.000	0.000
2039	2039	1	0.000	0.756	0.000	0.000
2040	2040	1	0.000	0.684	0.000	0.000
2041	2041	1	0.000	0.684	0.000	0.000
2042	2042	1	0.000	0.684	0.000	0.000
2043	2043	1	0.000	0.684	0.000	0.000
2044	2044	1	0.000	0.684	0.000	0.000
2045	2045	1	0.000	0.684	0.000	0.000
2046	2046	1	0.000	0.684	0.000	0.000
2047	2047	1	0.000	0.684	0.000	0.000
2048	2048	1	0.000	0.684	0.000	0.000
2049	2049	1	0.000	0.684	0.000	0.000
2050	2050	1	0.000	0.684	0.000	0.000
2051	2051	1	0.000	0.684	0.000	0.000
2052	2052	1	0.000	0.684	0.000	0.000
2053	2053	1	0.000	0.684	0.000	0.000
2054	2054	1	0.000	0.684	0.000	0.000
2055	2055	1	0.000	0.684	0.000	0.000
2056	2056	1	0.000	0.684	0.000	0.000
2057	2057	1	0.000	0.684	0.000	0.000
2058	2058	1	0.000	0.684	0.000	0.000
2059	2059	1	0.000	0.684	0.000	0.000
2060	2060	1	0.000	0.684	0.000	0.000
2061	2061	1	0.000	0.684	0.000	0.000
2062	2062	1	0.000	0.684	0.000	0.000
2063	2063	1	0.000	0.684	0.000	0.000
2064	2064	1	0.000	0.684	0.000	0.000
2065	2065	1	0.000	0.684	0.000	0.000
2066	2066	1	0.000	0.684	0.000	0.000
2067	2067	1	0.000	0.684	0.000	0.000
2068	2068	1	0.000	0.684	0.000	0.000
2069	2069	1	0.000	0.684	0.000	0.000
2070	2070	1	0.000	0.684	0.000	0.000
2071	2071	1	0.000	0.684	0.000	0.000
2072	2072	1	0.000	0.684	0.000	0.000
2073	2073	1	0.000	0.684	0.000	0.000
2074	2074	1	0.000	0.684	0.000	0.000
2075	2075	1	0.000	0.684	0.000	0.000

2076	2076	1	0.000	0.684	0.000	0.000
2077	2077	1	0.000	0.684	0.000	0.000
2078	2078	1	0.000	0.684	0.000	0.000
2079	2079	1	0.000	0.684	0.000	0.000
2080	2080	1	0.000	0.684	0.000	0.000
2081	2081	1	0.000	0.684	0.000	0.000
2082	2082	1	0.000	0.684	0.000	0.000
2083	2083	1	0.000	0.684	0.000	0.000
2084	2084	1	0.000	0.684	0.000	0.000
2085	2085	1	0.000	0.684	0.000	0.000
2086	2086	1	0.000	0.684	0.000	0.000
2087	2087	1	0.000	0.684	0.000	0.000
2088	2088	1	0.000	0.684	0.000	0.000
2089	2089	1	0.000	0.684	0.000	0.000
2090	2090	1	0.000	0.684	0.000	0.000
2091	2091	1	0.000	0.684	0.000	0.000
2092	2092	1	0.000	0.684	0.000	0.000
2093	2093	1	0.000	0.684	0.000	0.000
2094	2094	1	0.000	0.684	0.000	0.000
2095	2095	1	0.000	0.684	0.000	0.000
2096	2096	1	0.000	0.684	0.000	0.000
2097	2097	1	0.000	0.684	0.000	0.000
2098	2098	1	0.000	0.684	0.000	0.000
2099	2099	1	0.000	0.684	0.000	0.000
2100	2100	1	0.000	0.684	0.000	0.000
2011	2011	2	26.953	-0.269	14.286	0.188
2012	2012	2	3.242	-2.054	0.000	1.643
2013	2013	2	-3.791	-1.859	0.000	-0.436
2014	2014	2	-11.424	-1.797	0.000	0.153
2015	2015	2	-29.447	-0.581	0.000	0.004
2016	2016	2	-12.389	-2.058	0.000	0.003
2017	2017	2	22.372	-1.867	0.000	-1.744
2018	2018	2	15.585	-2.392	0.000	-1.775
2019	2019	2	-3.851	0.148	0.000	-1.807
2020	2020	2	-0.458	1.194	0.000	-1.841
2021	2021	2	-0.342	1.096	0.000	0.000
2022	2022	2	0.925	1.043	0.000	0.000
2023	2023	2	1.369	1.018	0.000	0.000
2024	2024	2	1.047	0.789	0.000	0.000
2025	2025	2	1.036	0.873	0.000	0.000
2026	2026	2	2.051	0.871	0.000	0.000
2027	2027	2	1.005	0.871	0.000	0.000
2028	2028	2	0.995	0.872	0.000	0.000
2029	2029	2	1.970	0.874	0.000	0.000

2030	2030	2	0.966	0.877	0.000	0.000
2031	2031	2	0.000	0.870	0.000	0.000
2032	2032	2	0.000	0.864	0.000	0.000
2033	2033	2	0.000	0.858	0.000	0.000
2034	2034	2	0.000	0.853	0.000	0.000
2035	2035	2	0.000	0.848	0.000	0.000
2036	2036	2	0.000	0.844	0.000	0.000
2037	2037	2	0.000	0.840	0.000	0.000
2038	2038	2	0.000	0.837	0.000	0.000
2039	2039	2	0.000	0.756	0.000	0.000
2040	2040	2	0.000	0.684	0.000	0.000
2041	2041	2	0.000	0.684	0.000	0.000
2042	2042	2	0.000	0.684	0.000	0.000
2043	2043	2	0.000	0.684	0.000	0.000
2044	2044	2	0.000	0.684	0.000	0.000
2045	2045	2	0.000	0.684	0.000	0.000
2046	2046	2	0.000	0.684	0.000	0.000
2047	2047	2	0.000	0.684	0.000	0.000
2048	2048	2	0.000	0.684	0.000	0.000
2049	2049	2	0.000	0.684	0.000	0.000
2050	2050	2	0.000	0.684	0.000	0.000
2051	2051	2	0.000	0.684	0.000	0.000
2052	2052	2	0.000	0.684	0.000	0.000
2053	2053	2	0.000	0.684	0.000	0.000
2054	2054	2	0.000	0.684	0.000	0.000
2055	2055	2	0.000	0.684	0.000	0.000
2056	2056	2	0.000	0.684	0.000	0.000
2057	2057	2	0.000	0.684	0.000	0.000
2058	2058	2	0.000	0.684	0.000	0.000
2059	2059	2	0.000	0.684	0.000	0.000
2060	2060	2	0.000	0.684	0.000	0.000
2061	2061	2	0.000	0.684	0.000	0.000
2062	2062	2	0.000	0.684	0.000	0.000
2063	2063	2	0.000	0.684	0.000	0.000
2064	2064	2	0.000	0.684	0.000	0.000
2065	2065	2	0.000	0.684	0.000	0.000
2066	2066	2	0.000	0.684	0.000	0.000
2067	2067	2	0.000	0.684	0.000	0.000
2068	2068	2	0.000	0.684	0.000	0.000
2069	2069	2	0.000	0.684	0.000	0.000
2070	2070	2	0.000	0.684	0.000	0.000
2071	2071	2	0.000	0.684	0.000	0.000
2072	2072	2	0.000	0.684	0.000	0.000
2073	2073	2	0.000	0.684	0.000	0.000



2074	2074	2	0.000	0.684	0.000	0.000
2075	2075	2	0.000	0.684	0.000	0.000
2076	2076	2	0.000	0.684	0.000	0.000
2077	2077	2	0.000	0.684	0.000	0.000
2078	2078	2	0.000	0.684	0.000	0.000
2079	2079	2	0.000	0.684	0.000	0.000
2080	2080	2	0.000	0.684	0.000	0.000
2081	2081	2	0.000	0.684	0.000	0.000
2082	2082	2	0.000	0.684	0.000	0.000
2083	2083	2	0.000	0.684	0.000	0.000
2084	2084	2	0.000	0.684	0.000	0.000
2085	2085	2	0.000	0.684	0.000	0.000
2086	2086	2	0.000	0.684	0.000	0.000
2087	2087	2	0.000	0.684	0.000	0.000
2088	2088	2	0.000	0.684	0.000	0.000
2089	2089	2	0.000	0.684	0.000	0.000
2090	2090	2	0.000	0.684	0.000	0.000
2091	2091	2	0.000	0.684	0.000	0.000
2092	2092	2	0.000	0.684	0.000	0.000
2093	2093	2	0.000	0.684	0.000	0.000
2094	2094	2	0.000	0.684	0.000	0.000
2095	2095	2	0.000	0.684	0.000	0.000
2096	2096	2	0.000	0.684	0.000	0.000
2097	2097	2	0.000	0.684	0.000	0.000
2098	2098	2	0.000	0.684	0.000	0.000
2099	2099	2	0.000	0.684	0.000	0.000
2100	2100	2	0.000	0.684	0.000	0.000
2011	2011	3	6.232	0.000	0.000	-1.438
2012	2012	3	3.932	0.000	0.000	-1.878
2013	2013	3	4.687	0.000	0.000	-2.438
2014	2014	3	0.741	0.000	0.000	-1.891
2015	2015	3	-1.870	0.000	0.000	-2.836
2016	2016	3	-1.634	0.000	0.000	-3.030
2017	2017	3	3.727	0.000	0.000	-2.848
2018	2018	3	7.588	0.000	0.000	-3.282
2019	2019	3	2.073	0.000	0.000	-3.587
2020	2020	3	2.031	0.000	0.000	-3.931
2021	2021	3	-1.703	0.000	0.000	-4.324
2022	2022	3	-0.122	0.000	0.000	-4.776
2023	2023	3	0.771	0.000	0.000	-5.300
2024	2024	3	0.351	0.000	0.000	-5.915
2025	2025	3	1.471	0.000	0.000	-6.643
2026	2026	3	0.767	0.000	0.000	-7.520
2027	2027	3	-0.605	0.000	0.000	-8.593

2028	2028	3	-2.016	0.000	0.000	-9.935
2029	2029	3	-0.163	0.000	0.000	-11.657
2030	2030	3	1.813	0.000	0.000	-13.943
2031	2031	3	0.000	0.000	0.000	-10.898
2032	2032	3	0.000	0.000	0.000	-10.897
2033	2033	3	0.000	0.000	0.000	-10.898
2034	2034	3	0.000	0.000	0.000	-10.897
2035	2035	3	0.000	0.000	0.000	-10.899
2036	2036	3	0.000	0.000	0.000	-10.897
2037	2037	3	0.000	0.000	0.000	-10.898
2038	2038	3	0.000	0.000	0.000	-10.898
2039	2039	3	0.000	0.000	0.000	-10.898
2040	2040	3	0.000	0.000	0.000	-10.897
2041	2041	3	0.000	0.000	0.000	-3.252
2042	2042	3	0.000	0.000	0.000	-3.359
2043	2043	3	0.000	0.000	0.000	-3.479
2044	2044	3	0.000	0.000	0.000	-3.601
2045	2045	3	0.000	0.000	0.000	-3.736
2046	2046	3	0.000	0.000	0.000	-3.884
2047	2047	3	0.000	0.000	0.000	-4.038
2048	2048	3	0.000	0.000	0.000	-4.211
2049	2049	3	0.000	0.000	0.000	-4.392
2050	2050	3	0.000	0.000	0.000	-4.598
2051	2051	3	0.000	0.000	0.000	0.000
2052	2052	3	0.000	0.000	0.000	0.000
2053	2053	3	0.000	0.000	0.000	0.000
2054	2054	3	0.000	0.000	0.000	0.000
2055	2055	3	0.000	0.000	0.000	0.000
2056	2056	3	0.000	0.000	0.000	0.000
2057	2057	3	0.000	0.000	0.000	0.000
2058	2058	3	0.000	0.000	0.000	0.000
2059	2059	3	0.000	0.000	0.000	0.000
2060	2060	3	0.000	0.000	0.000	0.000
2061	2061	3	0.000	0.000	0.000	0.000
2062	2062	3	0.000	0.000	0.000	0.000
2063	2063	3	0.000	0.000	0.000	0.000
2064	2064	3	0.000	0.000	0.000	0.000
2065	2065	3	0.000	0.000	0.000	0.000
2066	2066	3	0.000	0.000	0.000	0.000
2067	2067	3	0.000	0.000	0.000	0.000
2068	2068	3	0.000	0.000	0.000	0.000
2069	2069	3	0.000	0.000	0.000	0.000
2070	2070	3	0.000	0.000	0.000	0.000
2071	2071	3	0.000	0.000	0.000	0.000

2072	2072	3	0.000	0.000	0.000	0.000
2073	2073	3	0.000	0.000	0.000	0.000
2074	2074	3	0.000	0.000	0.000	0.000
2075	2075	3	0.000	0.000	0.000	0.000
2076	2076	3	0.000	0.000	0.000	0.000
2077	2077	3	0.000	0.000	0.000	0.000
2078	2078	3	0.000	0.000	0.000	0.000
2079	2079	3	0.000	0.000	0.000	0.000
2080	2080	3	0.000	0.000	0.000	0.000
2081	2081	3	0.000	0.000	0.000	0.000
2082	2082	3	0.000	0.000	0.000	0.000
2083	2083	3	0.000	0.000	0.000	0.000
2084	2084	3	0.000	0.000	0.000	0.000
2085	2085	3	0.000	0.000	0.000	0.000
2086	2086	3	0.000	0.000	0.000	0.000
2087	2087	3	0.000	0.000	0.000	0.000
2088	2088	3	0.000	0.000	0.000	0.000
2089	2089	3	0.000	0.000	0.000	0.000
2090	2090	3	0.000	0.000	0.000	0.000
2091	2091	3	0.000	0.000	0.000	0.000
2092	2092	3	0.000	0.000	0.000	0.000
2093	2093	3	0.000	0.000	0.000	0.000
2094	2094	3	0.000	0.000	0.000	0.000
2095	2095	3	0.000	0.000	0.000	0.000
2096	2096	3	0.000	0.000	0.000	0.000
2097	2097	3	0.000	0.000	0.000	0.000
2098	2098	3	0.000	0.000	0.000	0.000
2099	2099	3	0.000	0.000	0.000	0.000
2100	2100	3	0.000	0.000	0.000	0.000

FLEET - (used)

*veh_type	%Petrol	%Diesel	%Electric
1	59.6299	40.3625	0.0076
2	3.4505	96.4583	0.0912
3	3.4505	96.4583	0.0912
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET - (std)

*veh_type	%Petrol	%Diesel	%Electric
1	59.9940	40.0011	0.0049

2	3.6784	96.3156	0.0060
3	3.6784	96.3156	0.0060
4	0.0000	100.0000	0.0000
5	0.0000	100.0000	0.0000
6	0.0000	100.0000	0.0000
7	0.0000	100.0000	0.0000
8	0.0000	100.0000	0.0000

FLEET\_CHANGES - (used)

\*\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.5474	5.2271	72.3684
2012	2012	1	-3.6255	4.8862	75.5725
2013	2013	1	-3.7045	4.5823	52.6087
2014	2014	1	-3.5372	3.9494	137.0370
2015	2015	1	-3.3037	3.3379	101.4423
2016	2016	1	-2.7361	2.5097	63.3652
2017	2017	1	-0.8923	0.5861	47.9912
2018	2018	1	1.1991	-1.4201	38.8203
2019	2019	1	1.7017	-1.9941	33.4222
2020	2020	1	1.8536	-2.2461	27.1952
2021	2021	1	1.6150	-2.5074	42.8975
2022	2022	1	1.4618	-2.7336	40.4296
2023	2023	1	1.3175	-3.0441	37.7636
2024	2024	1	0.9803	-3.5199	40.2425
2025	2025	1	0.2872	-4.2813	45.8903
2026	2026	1	-0.0235	-4.6731	36.0447
2027	2027	1	-0.1975	-4.8289	27.3620
2028	2028	1	-0.3930	-4.9178	21.9646
2029	2029	1	-0.6139	-4.9385	18.2947
2030	2030	1	-0.9186	-4.8594	15.7936
2031	2031	1	-1.1396	-4.5854	13.2690
2032	2032	1	-1.3598	-4.2639	11.3740
2033	2033	1	-1.5543	-3.9092	9.8508
2034	2034	1	-1.7099	-3.6116	8.6724
2035	2035	1	-1.8177	-3.2999	7.6247
2036	2036	1	-1.8688	-3.0327	6.7218
2037	2037	1	-1.8936	-2.8160	5.9844
2038	2038	1	-1.8686	-2.5621	5.2552
2039	2039	1	-1.8261	-2.3161	4.6228
2040	2040	1	-2.0337	-2.4757	4.7437
2041	2041	1	-1.9404	-2.3503	4.2169
2042	2042	1	-1.8614	-2.2344	3.7873
2043	2043	1	-1.7986	-2.0982	3.4172

2044	2044	1	-1.8062	-2.0617	3.2286
2045	2045	1	-1.7138	-1.9060	2.8834
2046	2046	1	-1.6902	-1.8698	2.7094
2047	2047	1	-1.6879	-1.8470	2.5779
2048	2048	1	-1.6589	-1.8011	2.4200
2049	2049	1	-1.6009	-1.7231	2.2342
2050	2050	1	-1.5935	-1.7035	2.1344
2011	2011	2	-9.9551	0.3589	-2.9605
2012	2012	2	-8.0850	0.2503	10.1695
2013	2013	2	-8.1413	0.2417	-2.2564
2014	2014	2	-8.3635	0.2034	22.5603
2015	2015	2	-7.9288	0.1755	16.6952
2016	2016	2	-8.3676	0.1677	15.7007
2017	2017	2	-1.9723	0.0123	17.7552
2018	2018	2	4.0994	-0.1225	20.6247
2019	2019	2	-1.5414	-0.0689	44.2857
2020	2020	2	-1.2465	0.0340	-2.4134
2021	2021	2	-0.1690	-0.0505	16.7089
2022	2022	2	0.1344	-0.0690	17.5767
2023	2023	2	0.9644	-0.1262	23.9603
2024	2024	2	2.0384	-0.2103	30.4753
2025	2025	2	4.5262	-0.4417	47.9714
2026	2026	2	3.4807	-0.4261	32.5352
2027	2027	2	3.9436	-0.5348	31.1116
2028	2028	2	4.5536	-0.6795	30.2961
2029	2029	2	4.8684	-0.7989	27.3836
2030	2030	2	4.9673	-0.9096	24.5096
2031	2031	2	5.0865	-0.9474	20.1742
2032	2032	2	4.8793	-1.0056	17.7808
2033	2033	2	4.6320	-1.0543	15.7803
2034	2034	2	4.3655	-1.0969	14.1249
2035	2035	2	4.0807	-1.1390	12.8123
2036	2036	2	3.8076	-1.1648	11.5496
2037	2037	2	3.5417	-1.1887	10.5057
2038	2038	2	3.2793	-1.2049	9.5762
2039	2039	2	3.0357	-1.2185	8.7799
2040	2040	2	2.8032	-1.2286	8.0825
2041	2041	2	2.5647	-1.2034	7.2582
2042	2042	2	2.4018	-1.2091	6.7416
2043	2043	2	2.2033	-1.2237	6.3558
2044	2044	2	2.0402	-1.2164	5.8890
2045	2045	2	1.8815	-1.2057	5.4663
2046	2046	2	1.6834	-1.1668	4.9758
2047	2047	2	1.5551	-1.1570	4.6635

2048	2048	2	1.4237	-1.1416	4.3618
2049	2049	2	1.2542	-1.1392	4.1548
2050	2050	2	1.1467	-1.1150	3.8719
2011	2011	3	-9.9551	0.3589	-2.9605
2012	2012	3	-8.0850	0.2503	10.1695
2013	2013	3	-8.1413	0.2417	-2.2564
2014	2014	3	-8.3635	0.2034	22.5603
2015	2015	3	-7.9288	0.1755	16.6952
2016	2016	3	-8.3676	0.1677	15.7007
2017	2017	3	-1.9723	0.0123	17.7552
2018	2018	3	4.0994	-0.1225	20.6247
2019	2019	3	-1.5414	-0.0689	44.2857
2020	2020	3	-1.2465	0.0340	-2.4134
2021	2021	3	-0.1690	-0.0505	16.7089
2022	2022	3	0.1344	-0.0690	17.5767
2023	2023	3	0.9644	-0.1262	23.9603
2024	2024	3	2.0384	-0.2103	30.4753
2025	2025	3	4.5262	-0.4417	47.9714
2026	2026	3	3.4807	-0.4261	32.5352
2027	2027	3	3.9436	-0.5348	31.1116
2028	2028	3	4.5536	-0.6795	30.2961
2029	2029	3	4.8684	-0.7989	27.3836
2030	2030	3	4.9673	-0.9096	24.5096
2031	2031	3	5.0865	-0.9474	20.1742
2032	2032	3	4.8793	-1.0056	17.7808
2033	2033	3	4.6320	-1.0543	15.7803
2034	2034	3	4.3655	-1.0969	14.1249
2035	2035	3	4.0807	-1.1390	12.8123
2036	2036	3	3.8076	-1.1648	11.5496
2037	2037	3	3.5417	-1.1887	10.5057
2038	2038	3	3.2793	-1.2049	9.5762
2039	2039	3	3.0357	-1.2185	8.7799
2040	2040	3	2.8032	-1.2286	8.0825
2041	2041	3	2.5647	-1.2034	7.2582
2042	2042	3	2.4018	-1.2091	6.7416
2043	2043	3	2.2033	-1.2237	6.3558
2044	2044	3	2.0402	-1.2164	5.8890
2045	2045	3	1.8815	-1.2057	5.4663
2046	2046	3	1.6834	-1.1668	4.9758
2047	2047	3	1.5551	-1.1570	4.6635
2048	2048	3	1.4237	-1.1416	4.3618
2049	2049	3	1.2542	-1.1392	4.1548
2050	2050	3	1.1467	-1.1150	3.8719

FLEET\_CHANGES - (std)

\*% p.a.

*Start_yr	End_yr	Veh_type	%Change_Petrol	%Change_Diesel	%Change_Electric
2011	2011	1	-3.7492	5.6228	0.0000
2012	2012	1	-3.7659	5.1266	177.5510
2013	2013	1	-3.9701	4.9410	85.2941
2014	2014	1	-3.6759	4.1162	170.6349
2015	2015	1	-3.2699	3.3046	113.0499
2016	2016	1	-3.6103	3.4307	51.7550
2017	2017	1	-2.9570	2.4938	56.2812
2018	2018	1	3.4161	-3.6550	102.6407
2019	2019	1	0.5108	-0.9419	33.8680
2020	2020	1	0.7232	-1.1985	27.6316
2021	2021	1	0.5676	-1.5806	43.2319
2022	2022	1	0.5791	-1.8686	37.3340
2023	2023	1	0.5681	-2.2035	33.5208
2024	2024	1	0.5314	-2.5517	30.1442
2025	2025	1	0.3542	-2.9953	29.5523
2026	2026	1	0.0618	-3.3754	27.9990
2027	2027	1	-0.2326	-3.6761	25.2222
2028	2028	1	-0.4270	-3.8346	21.3724
2029	2029	1	-0.6921	-3.9236	18.6325
2030	2030	1	-1.0799	-4.0763	17.2315
2031	2031	1	-1.2869	-3.9022	14.4685
2032	2032	1	-1.4947	-3.6955	12.4105
2033	2033	1	-1.6835	-3.4819	10.8088
2034	2034	1	-1.8405	-3.3457	9.6249
2035	2035	1	-1.9503	-3.1612	8.5050
2036	2036	1	-2.0250	-3.0071	7.5777
2037	2037	1	-2.1218	-2.8728	6.8756
2038	2038	1	-2.1572	-2.7063	6.1545
2039	2039	1	-2.1373	-2.5956	5.5240
2040	2040	1	-2.1248	-2.5217	5.0308
2041	2041	1	-2.2762	-2.6354	4.9584
2042	2042	1	-2.2195	-2.5262	4.4616
2043	2043	1	-2.1687	-2.4221	4.0421
2044	2044	1	-2.1733	-2.3769	3.7720
2045	2045	1	-2.0755	-2.2008	3.3490
2046	2046	1	-2.0343	-2.1354	3.0959
2047	2047	1	-2.0412	-2.1157	2.9355
2048	2048	1	-2.0607	-2.1157	2.8085
2049	2049	1	-2.0136	-2.0469	2.6034
2050	2050	1	-2.0030	-2.0355	2.4726
2011	2011	2	-11.1020	0.4178	100.0000

2012	2012	2	-9.3964	0.3301	99.1667
2013	2013	2	-12.2827	0.3397	43.5146
2014	2014	2	-9.8699	0.2290	97.6676
2015	2015	2	-7.8086	0.1521	50.8850
2016	2016	2	-11.5125	0.1855	65.7869
2017	2017	2	-10.2523	0.1011	57.1344
2018	2018	2	-9.2892	0.1976	-12.9081
2019	2019	2	-7.9519	0.1382	-5.1702
2020	2020	2	-6.5228	0.0851	4.4071
2021	2021	2	-5.2895	0.0241	20.4526
2022	2022	2	-4.0230	-0.0850	48.6994
2023	2023	2	-3.9040	-0.1944	58.0175
2024	2024	2	-3.0790	-0.3757	62.2386
2025	2025	2	-3.4592	-0.6657	65.4189
2026	2026	2	-3.4461	-0.6389	37.7256
2027	2027	2	-20.0606	-0.5519	30.9817
2028	2028	2	-0.9119	-0.8176	25.1683
2029	2029	2	-1.0518	-0.9329	22.7641
2030	2030	2	-1.3528	-1.0726	21.1429
2031	2031	2	-1.3959	-1.0577	17.0349
2032	2032	2	-1.4529	-1.0780	14.6822
2033	2033	2	-1.5121	-1.0926	12.8368
2034	2034	2	-1.5225	-1.1305	11.6389
2035	2035	2	-1.5071	-1.1423	10.4114
2036	2036	2	-1.4906	-1.1051	9.0220
2037	2037	2	-1.4863	-1.1029	8.1664
2038	2038	2	-1.4680	-1.0914	7.3879
2039	2039	2	-1.4347	-1.0781	6.7202
2040	2040	2	-1.3576	-1.0568	6.1049
2041	2041	2	-1.4047	-1.0891	5.8665
2042	2042	2	-1.4534	-1.1257	5.6642
2043	2043	2	-1.4749	-1.1428	5.3805
2044	2044	2	-1.4673	-1.1573	5.1112
2045	2045	2	-1.4741	-1.1709	4.8622
2046	2046	2	-1.4809	-1.1847	4.6357
2047	2047	2	-1.5032	-1.1984	4.4285
2048	2048	2	-1.4947	-1.1919	4.1671
2049	2049	2	-1.5014	-1.1920	3.9530
2050	2050	2	-1.5080	-1.1876	3.7438
2011	2011	3	-11.1020	0.4178	100.0000
2012	2012	3	-9.3964	0.3301	99.1667
2013	2013	3	-12.2827	0.3397	43.5146
2014	2014	3	-9.8699	0.2290	97.6676
2015	2015	3	-7.8086	0.1521	50.8850



2016	2016	3	-11.5125	0.1855	65.7869
2017	2017	3	-10.2523	0.1011	57.1344
2018	2018	3	-9.2892	0.1976	-12.9081
2019	2019	3	-7.9519	0.1382	-5.1702
2020	2020	3	-6.5228	0.0851	4.4071
2021	2021	3	-5.2895	0.0241	20.4526
2022	2022	3	-4.0230	-0.0850	48.6994
2023	2023	3	-3.9040	-0.1944	58.0175
2024	2024	3	-3.0790	-0.3757	62.2386
2025	2025	3	-3.4592	-0.6657	65.4189
2026	2026	3	-3.4461	-0.6389	37.7256
2027	2027	3	-20.0606	-0.5519	30.9817
2028	2028	3	-0.9119	-0.8176	25.1683
2029	2029	3	-1.0518	-0.9329	22.7641
2030	2030	3	-1.3528	-1.0726	21.1429
2031	2031	3	-1.3959	-1.0577	17.0349
2032	2032	3	-1.4529	-1.0780	14.6822
2033	2033	3	-1.5121	-1.0926	12.8368
2034	2034	3	-1.5225	-1.1305	11.6389
2035	2035	3	-1.5071	-1.1423	10.4114
2036	2036	3	-1.4906	-1.1051	9.0220
2037	2037	3	-1.4863	-1.1029	8.1664
2038	2038	3	-1.4680	-1.0914	7.3879
2039	2039	3	-1.4347	-1.0781	6.7202
2040	2040	3	-1.3576	-1.0568	6.1049
2041	2041	3	-1.4047	-1.0891	5.8665
2042	2042	3	-1.4534	-1.1257	5.6642
2043	2043	3	-1.4749	-1.1428	5.3805
2044	2044	3	-1.4673	-1.1573	5.1112
2045	2045	3	-1.4741	-1.1709	4.8622
2046	2046	3	-1.4809	-1.1847	4.6357
2047	2047	3	-1.5032	-1.1984	4.4285
2048	2048	3	-1.4947	-1.1919	4.1671
2049	2049	3	-1.5014	-1.1920	3.9530
2050	2050	3	-1.5080	-1.1876	3.7438

FUEL\_CONSUMPTION - (used)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)
		max	min			
1	1	0.4707	0.10003	-0.11394E-02	0.75462E-05	130 10
1	2	0.5069	0.07268	-0.69920E-03	0.55097E-05	130 10
1	3	0.0000	0.21366	0.00000E+00	0.00000E+00	120 10
2	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120 10
2	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110 10

2	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
3	1	0.3487	0.19552	-0.30690E-02	0.19819E-04	120	10
3	2	0.4688	0.11457	-0.16529E-02	0.13993E-04	110	10
3	3	0.0000	0.23232	0.00000E+00	0.00000E+00	120	10
4	2	2.6115	0.13856	-0.10015E-02	0.10938E-04	85	12
5	2	5.7221	0.29716	-0.19688E-02	0.11735E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_CONSUMPTION - (std)

*veh_type	fuel_type	a_fuel	b_fuel	c_fuel	d_fuel	cut-off_speeds(km/h)	
		max		min			
1	1	0.4760	0.10116	-0.11523E-02	0.76319E-05	130	10
1	2	0.5110	0.07326	-0.70477E-03	0.55536E-05	130	10
1	3	0.0000	0.15077	0.00000E+00	0.00000E+00	120	10
2	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
2	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
2	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
3	1	0.3409	0.19117	-0.30007E-02	0.19379E-04	120	10
3	2	0.4692	0.11468	-0.16544E-02	0.14006E-04	110	10
3	3	0.0000	0.33636	0.00000E+00	0.00000E+00	120	10
4	2	2.6963	0.14306	-0.10340E-02	0.11293E-04	85	12
5	2	5.6656	0.29422	-0.19494E-02	0.11619E-04	85	12
6	2	3.3602	0.29525	-0.32091E-02	0.23540E-04	85	12

FUEL\_EFFICIENCY - (used)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.604
2011	2011	1	2	0.874
2011	2011	1	3	0.032
2011	2011	2	1	-0.168
2011	2011	2	2	0.177
2011	2011	2	3	0.000
2011	2011	3	1	-0.168
2011	2011	3	2	0.177
2011	2011	3	3	0.000
2011	2011	4	2	-0.113
2011	2011	5	2	0.011
2012	2012	1	1	0.285
2012	2012	1	2	0.975
2012	2012	1	3	-0.707
2012	2012	2	1	-0.630
2012	2012	2	2	0.468
2012	2012	2	3	0.000

2012	2012	3	1	-0.630
2012	2012	3	2	0.468
2012	2012	3	3	0.000
2012	2012	4	2	-2.932
2012	2012	5	2	0.288
2013	2013	1	1	0.891
2013	2013	1	2	0.920
2013	2013	1	3	0.085
2013	2013	2	1	0.031
2013	2013	2	2	0.107
2013	2013	2	3	0.000
2013	2013	3	1	0.031
2013	2013	3	2	0.107
2013	2013	3	3	0.000
2013	2013	4	2	0.475
2013	2013	5	2	0.068
2014	2014	1	1	0.979
2014	2014	1	2	0.945
2014	2014	1	3	-1.015
2014	2014	2	1	-0.518
2014	2014	2	2	0.057
2014	2014	2	3	-0.042
2014	2014	3	1	-0.518
2014	2014	3	2	0.057
2014	2014	3	3	-0.042
2014	2014	4	2	-1.038
2014	2014	5	2	0.144
2015	2015	1	1	1.281
2015	2015	1	2	1.319
2015	2015	1	3	-0.927
2015	2015	2	1	2.498
2015	2015	2	2	0.323
2015	2015	2	3	-0.454
2015	2015	3	1	2.498
2015	2015	3	2	0.323
2015	2015	3	3	-0.454
2015	2015	4	2	0.361
2015	2015	5	2	0.480
2016	2016	1	1	1.406
2016	2016	1	2	1.207
2016	2016	1	3	1.034
2016	2016	2	1	-0.062
2016	2016	2	2	0.705
2016	2016	2	3	0.340

2016	2016	3	1	-0.062
2016	2016	3	2	0.705
2016	2016	3	3	0.340
2016	2016	4	2	0.747
2016	2016	5	2	0.239
2017	2017	1	1	1.270
2017	2017	1	2	0.783
2017	2017	1	3	1.188
2017	2017	2	1	1.646
2017	2017	2	2	1.249
2017	2017	2	3	0.804
2017	2017	3	1	1.646
2017	2017	3	2	1.249
2017	2017	3	3	0.804
2017	2017	4	2	-0.771
2017	2017	5	2	0.316
2018	2018	1	1	1.029
2018	2018	1	2	0.063
2018	2018	1	3	1.035
2018	2018	2	1	3.029
2018	2018	2	2	0.770
2018	2018	2	3	0.708
2018	2018	3	1	3.029
2018	2018	3	2	0.770
2018	2018	3	3	0.708
2018	2018	4	2	-0.058
2018	2018	5	2	0.407
2019	2019	1	1	0.990
2019	2019	1	2	-0.041
2019	2019	1	3	2.359
2019	2019	2	1	1.141
2019	2019	2	2	0.522
2019	2019	2	3	2.118
2019	2019	3	1	1.141
2019	2019	3	2	0.522
2019	2019	3	3	2.118
2019	2019	4	2	0.247
2019	2019	5	2	0.388
2020	2020	1	1	2.680
2020	2020	1	2	1.323
2020	2020	1	3	2.699
2020	2020	2	1	1.842
2020	2020	2	2	1.432
2020	2020	2	3	-2.324

2020	2020	3	1	1.842
2020	2020	3	2	1.432
2020	2020	3	3	-2.324
2020	2020	4	2	0.341
2020	2020	5	2	0.470
2021	2021	1	1	2.289
2021	2021	1	2	1.469
2021	2021	1	3	5.660
2021	2021	2	1	1.283
2021	2021	2	2	1.165
2021	2021	2	3	-0.804
2021	2021	3	1	1.283
2021	2021	3	2	1.165
2021	2021	3	3	-0.804
2021	2021	4	2	0.484
2021	2021	5	2	0.523
2022	2022	1	1	2.080
2022	2022	1	2	1.497
2022	2022	1	3	3.960
2022	2022	2	1	2.960
2022	2022	2	2	1.102
2022	2022	2	3	-0.880
2022	2022	3	1	2.960
2022	2022	3	2	1.102
2022	2022	3	3	-0.880
2022	2022	4	2	0.491
2022	2022	5	2	0.531
2023	2023	1	1	1.895
2023	2023	1	2	1.393
2023	2023	1	3	2.637
2023	2023	2	1	1.045
2023	2023	2	2	0.925
2023	2023	2	3	-1.450
2023	2023	3	1	1.045
2023	2023	3	2	0.925
2023	2023	3	3	-1.450
2023	2023	4	2	0.500
2023	2023	5	2	0.548
2024	2024	1	1	1.891
2024	2024	1	2	1.258
2024	2024	1	3	2.035
2024	2024	2	1	1.277
2024	2024	2	2	0.822
2024	2024	2	3	-1.389

2024	2024	3	1	1.277
2024	2024	3	2	0.822
2024	2024	3	3	-1.389
2024	2024	4	2	0.490
2024	2024	5	2	0.544
2025	2025	1	1	1.650
2025	2025	1	2	1.164
2025	2025	1	3	1.843
2025	2025	2	1	2.913
2025	2025	2	2	1.999
2025	2025	2	3	-1.541
2025	2025	3	1	2.913
2025	2025	3	2	1.999
2025	2025	3	3	-1.541
2025	2025	4	2	0.918
2025	2025	5	2	1.864
2026	2026	1	1	1.468
2026	2026	1	2	1.107
2026	2026	1	3	1.211
2026	2026	2	1	2.351
2026	2026	2	2	1.780
2026	2026	2	3	-0.553
2026	2026	3	1	2.351
2026	2026	3	2	1.780
2026	2026	3	3	-0.553
2026	2026	4	2	0.900
2026	2026	5	2	1.854
2027	2027	1	1	1.372
2027	2027	1	2	1.130
2027	2027	1	3	0.922
2027	2027	2	1	3.660
2027	2027	2	2	1.600
2027	2027	2	3	-0.253
2027	2027	3	1	3.660
2027	2027	3	2	1.600
2027	2027	3	3	-0.253
2027	2027	4	2	0.874
2027	2027	5	2	1.767
2028	2028	1	1	1.234
2028	2028	1	2	1.148
2028	2028	1	3	0.747
2028	2028	2	1	1.853
2028	2028	2	2	1.433
2028	2028	2	3	0.019

2028	2028	3	1	1.853
2028	2028	3	2	1.433
2028	2028	3	3	0.019
2028	2028	4	2	0.846
2028	2028	5	2	1.644
2029	2029	1	1	1.110
2029	2029	1	2	1.140
2029	2029	1	3	0.694
2029	2029	2	1	1.699
2029	2029	2	2	1.299
2029	2029	2	3	0.258
2029	2029	3	1	1.699
2029	2029	3	2	1.299
2029	2029	3	3	0.258
2029	2029	4	2	0.808
2029	2029	5	2	1.531
2030	2030	1	1	2.306
2030	2030	1	2	2.305
2030	2030	1	3	0.690
2030	2030	2	1	3.530
2030	2030	2	2	2.726
2030	2030	2	3	0.398
2030	2030	3	1	3.530
2030	2030	3	2	2.726
2030	2030	3	3	0.398
2030	2030	4	2	1.394
2030	2030	5	2	3.225
2031	2031	1	1	2.230
2031	2031	1	2	2.375
2031	2031	1	3	0.571
2031	2031	2	1	1.740
2031	2031	2	2	2.564
2031	2031	2	3	0.251
2031	2031	3	1	1.740
2031	2031	3	2	2.564
2031	2031	3	3	0.251
2031	2031	4	2	1.307
2031	2031	5	2	3.126
2032	2032	1	1	2.088
2032	2032	1	2	2.387
2032	2032	1	3	0.492
2032	2032	2	1	2.870
2032	2032	2	2	2.133
2032	2032	2	3	0.170

2032	2032	3	1	2.870
2032	2032	3	2	2.133
2032	2032	3	3	0.170
2032	2032	4	2	1.294
2032	2032	5	2	2.946
2033	2033	1	1	2.021
2033	2033	1	2	2.185
2033	2033	1	3	0.435
2033	2033	2	1	2.820
2033	2033	2	2	2.016
2033	2033	2	3	0.145
2033	2033	3	1	2.820
2033	2033	3	2	2.016
2033	2033	3	3	0.145
2033	2033	4	2	1.240
2033	2033	5	2	2.667
2034	2034	1	1	1.933
2034	2034	1	2	1.998
2034	2034	1	3	0.405
2034	2034	2	1	3.326
2034	2034	2	2	1.646
2034	2034	2	3	0.151
2034	2034	3	1	3.326
2034	2034	3	2	1.646
2034	2034	3	3	0.151
2034	2034	4	2	1.176
2034	2034	5	2	2.450
2035	2035	1	1	1.795
2035	2035	1	2	1.826
2035	2035	1	3	0.374
2035	2035	2	1	-0.177
2035	2035	2	2	1.517
2035	2035	2	3	0.162
2035	2035	3	1	-0.177
2035	2035	3	2	1.517
2035	2035	3	3	0.162
2035	2035	4	2	1.110
2035	2035	5	2	2.072
2036	2036	1	1	1.602
2036	2036	1	2	1.723
2036	2036	1	3	0.362
2036	2036	2	1	1.873
2036	2036	2	2	1.401
2036	2036	2	3	0.192



2036	2036	3	1	1.873
2036	2036	3	2	1.401
2036	2036	3	3	0.192
2036	2036	4	2	1.026
2036	2036	5	2	1.652
2037	2037	1	1	1.499
2037	2037	1	2	1.565
2037	2037	1	3	0.374
2037	2037	2	1	1.484
2037	2037	2	2	1.325
2037	2037	2	3	0.232
2037	2037	3	1	1.484
2037	2037	3	2	1.325
2037	2037	3	3	0.232
2037	2037	4	2	0.935
2037	2037	5	2	1.356
2038	2038	1	1	1.372
2038	2038	1	2	1.357
2038	2038	1	3	0.386
2038	2038	2	1	2.766
2038	2038	2	2	1.280
2038	2038	2	3	0.263
2038	2038	3	1	2.766
2038	2038	3	2	1.280
2038	2038	3	3	0.263
2038	2038	4	2	0.848
2038	2038	5	2	1.046
2039	2039	1	1	1.233
2039	2039	1	2	1.098
2039	2039	1	3	0.402
2039	2039	2	1	0.398
2039	2039	2	2	0.831
2039	2039	2	3	0.296
2039	2039	3	1	0.398
2039	2039	3	2	0.831
2039	2039	3	3	0.296
2039	2039	4	2	0.758
2039	2039	5	2	0.806
2040	2040	1	1	1.198
2040	2040	1	2	1.161
2040	2040	1	3	0.342
2040	2040	2	1	0.753
2040	2040	2	2	0.771
2040	2040	2	3	0.329

2040	2040	3	1	0.753
2040	2040	3	2	0.771
2040	2040	3	3	0.329
2040	2040	4	2	0.660
2040	2040	5	2	0.599
2041	2041	1	1	1.300
2041	2041	1	2	1.581
2041	2041	1	3	0.360
2041	2041	2	1	1.010
2041	2041	2	2	1.026
2041	2041	2	3	0.390
2041	2041	3	1	1.010
2041	2041	3	2	1.026
2041	2041	3	3	0.390
2041	2041	4	2	0.582
2041	2041	5	2	0.436
2042	2042	1	1	0.879
2042	2042	1	2	0.843
2042	2042	1	3	0.374
2042	2042	2	1	0.496
2042	2042	2	2	0.525
2042	2042	2	3	0.477
2042	2042	3	1	0.496
2042	2042	3	2	0.525
2042	2042	3	3	0.477
2042	2042	4	2	0.512
2042	2042	5	2	0.335
2043	2043	1	1	0.765
2043	2043	1	2	0.693
2043	2043	1	3	0.385
2043	2043	2	1	0.415
2043	2043	2	2	0.437
2043	2043	2	3	0.533
2043	2043	3	1	0.415
2043	2043	3	2	0.437
2043	2043	3	3	0.533
2043	2043	4	2	0.451
2043	2043	5	2	0.259
2044	2044	1	1	0.624
2044	2044	1	2	0.557
2044	2044	1	3	0.405
2044	2044	2	1	0.345
2044	2044	2	2	0.357
2044	2044	2	3	0.581

2044	2044	3	1	0.345
2044	2044	3	2	0.357
2044	2044	3	3	0.581
2044	2044	4	2	0.404
2044	2044	5	2	0.202
2045	2045	1	1	0.483
2045	2045	1	2	0.421
2045	2045	1	3	0.407
2045	2045	2	1	0.285
2045	2045	2	2	0.288
2045	2045	2	3	0.623
2045	2045	3	1	0.285
2045	2045	3	2	0.288
2045	2045	3	3	0.623
2045	2045	4	2	0.365
2045	2045	5	2	0.160
2046	2046	1	1	0.320
2046	2046	1	2	0.344
2046	2046	1	3	0.428
2046	2046	2	1	0.652
2046	2046	2	2	0.858
2046	2046	2	3	0.645
2046	2046	3	1	0.652
2046	2046	3	2	0.858
2046	2046	3	3	0.645
2046	2046	4	2	0.374
2046	2046	5	2	0.157
2047	2047	1	1	0.238
2047	2047	1	2	0.257
2047	2047	1	3	0.441
2047	2047	2	1	0.150
2047	2047	2	2	0.136
2047	2047	2	3	0.686
2047	2047	3	1	0.150
2047	2047	3	2	0.136
2047	2047	3	3	0.686
2047	2047	4	2	0.304
2047	2047	5	2	0.087
2048	2048	1	1	0.179
2048	2048	1	2	0.195
2048	2048	1	3	0.452
2048	2048	2	1	0.126
2048	2048	2	2	0.108
2048	2048	2	3	0.717

2048	2048	3	1	0.126
2048	2048	3	2	0.108
2048	2048	3	3	0.717
2048	2048	4	2	0.288
2048	2048	5	2	0.074
2049	2049	1	1	0.135
2049	2049	1	2	0.148
2049	2049	1	3	0.461
2049	2049	2	1	0.106
2049	2049	2	2	0.087
2049	2049	2	3	0.745
2049	2049	3	1	0.106
2049	2049	3	2	0.087
2049	2049	3	3	0.745
2049	2049	4	2	0.275
2049	2049	5	2	0.062
2050	2050	1	1	0.103
2050	2050	1	2	0.114
2050	2050	1	3	0.472
2050	2050	2	1	0.091
2050	2050	2	2	0.072
2050	2050	2	3	0.770
2050	2050	3	1	0.091
2050	2050	3	2	0.072
2050	2050	3	3	0.770
2050	2050	4	2	0.266
2050	2050	5	2	0.055
2051	2100	1	1	0.000
2051	2100	1	2	0.000
2051	2100	1	3	0.000
2051	2100	2	1	0.000
2051	2100	2	2	0.000
2051	2100	2	3	0.000
2051	2100	3	1	0.000
2051	2100	3	2	0.000
2051	2100	3	3	0.000
2051	2100	4	2	0.000
2051	2100	5	2	0.000

FUEL\_EFFICIENCY - (std)

\*% p.a.

*Start_yr	End_yr	veh_type	fuel_type	change
2011	2011	1	1	0.471
2011	2011	1	2	0.876

2011	2011	1	3	0.000
2011	2011	2	1	-0.352
2011	2011	2	2	0.156
2011	2011	2	3	0.000
2011	2011	3	1	-0.352
2011	2011	3	2	0.156
2011	2011	3	3	0.000
2012	2012	1	1	0.734
2012	2012	1	2	1.042
2012	2012	1	3	-0.166
2012	2012	2	1	-0.244
2012	2012	2	2	0.320
2012	2012	2	3	0.000
2012	2012	3	1	-0.244
2012	2012	3	2	0.320
2012	2012	3	3	0.000
2013	2013	1	1	1.001
2013	2013	1	2	1.190
2013	2013	1	3	0.348
2013	2013	2	1	-0.109
2013	2013	2	2	0.099
2013	2013	2	3	0.205
2013	2013	3	1	-0.109
2013	2013	3	2	0.099
2013	2013	3	3	0.205
2014	2014	1	1	1.383
2014	2014	1	2	1.184
2014	2014	1	3	-0.530
2014	2014	2	1	-0.154
2014	2014	2	2	0.259
2014	2014	2	3	0.207
2014	2014	3	1	-0.154
2014	2014	3	2	0.259
2014	2014	3	3	0.207
2015	2015	1	1	1.569
2015	2015	1	2	1.526
2015	2015	1	3	-0.785
2015	2015	2	1	-0.143
2015	2015	2	2	0.392
2015	2015	2	3	0.207
2015	2015	3	1	-0.143
2015	2015	3	2	0.392
2015	2015	3	3	0.207
2016	2016	1	1	2.005

2016	2016	1	2	1.628
2016	2016	1	3	0.073
2016	2016	2	1	0.816
2016	2016	2	2	0.261
2016	2016	2	3	0.208
2016	2016	3	1	0.816
2016	2016	3	2	0.261
2016	2016	3	3	0.208
2017	2017	1	1	2.059
2017	2017	1	2	1.658
2017	2017	1	3	0.755
2017	2017	2	1	1.172
2017	2017	2	2	0.187
2017	2017	2	3	0.208
2017	2017	3	1	1.172
2017	2017	3	2	0.187
2017	2017	3	3	0.208
2018	2018	1	1	1.991
2018	2018	1	2	1.645
2018	2018	1	3	0.882
2018	2018	2	1	1.661
2018	2018	2	2	0.059
2018	2018	2	3	0.208
2018	2018	3	1	1.661
2018	2018	3	2	0.059
2018	2018	3	3	0.208
2019	2019	1	1	2.589
2019	2019	1	2	2.095
2019	2019	1	3	0.478
2019	2019	2	1	1.804
2019	2019	2	2	0.642
2019	2019	2	3	0.207
2019	2019	3	1	1.804
2019	2019	3	2	0.642
2019	2019	3	3	0.207
2020	2020	1	1	2.340
2020	2020	1	2	1.564
2020	2020	1	3	0.299
2020	2020	2	1	2.793
2020	2020	2	2	2.114
2020	2020	2	3	0.206
2020	2020	3	1	2.793
2020	2020	3	2	2.114
2020	2020	3	3	0.206

2021	2021	1	1	2.589
2021	2021	1	2	1.545
2021	2021	1	3	0.358
2021	2021	2	1	2.711
2021	2021	2	2	1.763
2021	2021	2	3	3.053
2021	2021	3	1	2.711
2021	2021	3	2	1.763
2021	2021	3	3	3.053
2022	2022	1	1	2.664
2022	2022	1	2	1.645
2022	2022	1	3	0.582
2022	2022	2	1	2.418
2022	2022	2	2	1.491
2022	2022	2	3	2.808
2022	2022	3	1	2.418
2022	2022	3	2	1.491
2022	2022	3	3	2.808
2023	2023	1	1	2.274
2023	2023	1	2	1.301
2023	2023	1	3	0.678
2023	2023	2	1	2.353
2023	2023	2	2	1.281
2023	2023	2	3	2.595
2023	2023	3	1	2.353
2023	2023	3	2	1.281
2023	2023	3	3	2.595
2024	2024	1	1	2.133
2024	2024	1	2	1.237
2024	2024	1	3	0.766
2024	2024	2	1	2.067
2024	2024	2	2	1.123
2024	2024	2	3	2.407
2024	2024	3	1	2.067
2024	2024	3	2	1.123
2024	2024	3	3	2.407
2025	2025	1	1	2.281
2025	2025	1	2	1.481
2025	2025	1	3	0.855
2025	2025	2	1	2.061
2025	2025	2	2	0.988
2025	2025	2	3	2.240
2025	2025	3	1	2.061
2025	2025	3	2	0.988

2025	2025	3	3	2.240
2026	2026	1	1	1.670
2026	2026	1	2	0.976
2026	2026	1	3	1.031
2026	2026	2	1	2.099
2026	2026	2	2	0.899
2026	2026	2	3	0.000
2026	2026	3	1	2.099
2026	2026	3	2	0.899
2026	2026	3	3	0.000
2027	2027	1	1	1.432
2027	2027	1	2	0.830
2027	2027	1	3	1.153
2027	2027	2	1	9.797
2027	2027	2	2	0.826
2027	2027	2	3	0.000
2027	2027	3	1	9.797
2027	2027	3	2	0.826
2027	2027	3	3	0.000
2028	2028	1	1	1.584
2028	2028	1	2	1.065
2028	2028	1	3	1.284
2028	2028	2	1	1.264
2028	2028	2	2	0.725
2028	2028	2	3	0.000
2028	2028	3	1	1.264
2028	2028	3	2	0.725
2028	2028	3	3	0.000
2029	2029	1	1	1.013
2029	2029	1	2	0.568
2029	2029	1	3	1.388
2029	2029	2	1	1.076
2029	2029	2	2	0.629
2029	2029	2	3	0.000
2029	2029	3	1	1.076
2029	2029	3	2	0.629
2029	2029	3	3	0.000
2030	2030	1	1	0.830
2030	2030	1	2	0.458
2030	2030	1	3	1.480
2030	2030	2	1	0.932
2030	2030	2	2	0.524
2030	2030	2	3	0.000
2030	2030	3	1	0.932



2030	2030	3	2	0.524
2030	2030	3	3	0.000
2031	2031	1	1	1.053
2031	2031	1	2	0.750
2031	2031	1	3	1.267
2031	2031	2	1	0.766
2031	2031	2	2	0.417
2031	2031	2	3	0.000
2031	2031	3	1	0.766
2031	2031	3	2	0.417
2031	2031	3	3	0.000
2032	2032	1	1	0.507
2032	2032	1	2	0.269
2032	2032	1	3	1.094
2032	2032	2	1	0.616
2032	2032	2	2	0.313
2032	2032	2	3	0.000
2032	2032	3	1	0.616
2032	2032	3	2	0.313
2032	2032	3	3	0.000
2033	2033	1	1	0.359
2033	2033	1	2	0.165
2033	2033	1	3	0.972
2033	2033	2	1	0.490
2033	2033	2	2	0.242
2033	2033	2	3	0.000
2033	2033	3	1	0.490
2033	2033	3	2	0.242
2033	2033	3	3	0.000
2034	2034	1	1	0.628
2034	2034	1	2	0.487
2034	2034	1	3	0.874
2034	2034	2	1	0.366
2034	2034	2	2	0.172
2034	2034	2	3	0.000
2034	2034	3	1	0.366
2034	2034	3	2	0.172
2034	2034	3	3	0.000
2035	2035	1	1	0.120
2035	2035	1	2	0.019
2035	2035	1	3	0.778
2035	2035	2	1	0.255
2035	2035	2	2	0.122
2035	2035	2	3	0.000

2035	2035	3	1	0.255
2035	2035	3	2	0.122
2035	2035	3	3	0.000
2036	2036	1	1	0.043
2036	2036	1	2	-0.027
2036	2036	1	3	0.691
2036	2036	2	1	0.197
2036	2036	2	2	0.087
2036	2036	2	3	0.000
2036	2036	3	1	0.197
2036	2036	3	2	0.087
2036	2036	3	3	0.000
2037	2037	1	1	0.399
2037	2037	1	2	0.352
2037	2037	1	3	0.616
2037	2037	2	1	0.146
2037	2037	2	2	0.065
2037	2037	2	3	0.000
2037	2037	3	1	0.146
2037	2037	3	2	0.065
2037	2037	3	3	0.000
2038	2038	1	1	-0.059
2038	2038	1	2	-0.092
2038	2038	1	3	0.539
2038	2038	2	1	0.111
2038	2038	2	2	0.050
2038	2038	2	3	0.000
2038	2038	3	1	0.111
2038	2038	3	2	0.050
2038	2038	3	3	0.000
2039	2039	1	1	-0.086
2039	2039	1	2	-0.109
2039	2039	1	3	0.462
2039	2039	2	1	0.081
2039	2039	2	2	0.039
2039	2039	2	3	0.000
2039	2039	3	1	0.081
2039	2039	3	2	0.039
2039	2039	3	3	0.000
2040	2040	1	1	0.326
2040	2040	1	2	0.310
2040	2040	1	3	0.395
2040	2040	2	1	0.050
2040	2040	2	2	0.032

2040	2040	2	3	0.000
2040	2040	3	1	0.050
2040	2040	3	2	0.032
2040	2040	3	3	0.000
2041	2041	1	1	-0.121
2041	2041	1	2	-0.131
2041	2041	1	3	0.333
2041	2041	2	1	0.040
2041	2041	2	2	0.027
2041	2041	2	3	0.000
2041	2041	3	1	0.040
2041	2041	3	2	0.027
2041	2041	3	3	0.000
2042	2042	1	1	-0.127
2042	2042	1	2	-0.135
2042	2042	1	3	0.266
2042	2042	2	1	0.032
2042	2042	2	2	0.021
2042	2042	2	3	0.000
2042	2042	3	1	0.032
2042	2042	3	2	0.021
2042	2042	3	3	0.000
2043	2043	1	1	0.313
2043	2043	1	2	0.307
2043	2043	1	3	0.215
2043	2043	2	1	0.024
2043	2043	2	2	0.017
2043	2043	2	3	0.000
2043	2043	3	1	0.024
2043	2043	3	2	0.017
2043	2043	3	3	0.000
2044	2044	1	1	-0.138
2044	2044	1	2	-0.144
2044	2044	1	3	0.178
2044	2044	2	1	0.021
2044	2044	2	2	0.014
2044	2044	2	3	0.000
2044	2044	3	1	0.021
2044	2044	3	2	0.014
2044	2044	3	3	0.000
2045	2045	1	1	-0.139
2045	2045	1	2	-0.144
2045	2045	1	3	0.150
2045	2045	2	1	0.014

2045	2045	2	2	0.013
2045	2045	2	3	0.000
2045	2045	3	1	0.014
2045	2045	3	2	0.013
2045	2045	3	3	0.000
2046	2046	1	1	0.313
2046	2046	1	2	0.307
2046	2046	1	3	0.129
2046	2046	2	1	0.013
2046	2046	2	2	0.011
2046	2046	2	3	0.000
2046	2046	3	1	0.013
2046	2046	3	2	0.011
2046	2046	3	3	0.000
2047	2047	1	1	-0.142
2047	2047	1	2	-0.148
2047	2047	1	3	0.112
2047	2047	2	1	0.012
2047	2047	2	2	0.010
2047	2047	2	3	0.000
2047	2047	3	1	0.012
2047	2047	3	2	0.010
2047	2047	3	3	0.000
2048	2048	1	1	-0.140
2048	2048	1	2	-0.147
2048	2048	1	3	0.099
2048	2048	2	1	0.014
2048	2048	2	2	0.010
2048	2048	2	3	0.000
2048	2048	3	1	0.014
2048	2048	3	2	0.010
2048	2048	3	3	0.000
2049	2049	1	1	0.313
2049	2049	1	2	0.307
2049	2049	1	3	0.088
2049	2049	2	1	0.015
2049	2049	2	2	0.010
2049	2049	2	3	0.000
2049	2049	3	1	0.015
2049	2049	3	2	0.010
2049	2049	3	3	0.000
2050	2050	1	1	-0.142
2050	2050	1	2	0.304
2050	2050	1	3	0.079



Road	2022	0	0	0	0	0	0	0	0
Road	2023	0	0	0	0	0	0	0	0
Road	2024	0	0	0	0	0	0	0	0
Road	2025	0	0	0	0	0	0	0	0
Road	2026	0	0	0	0	0	0	0	0
Road	2027	0	0	0	0	0	0	0	0
Road	2028	0	0	0	0	0	0	0	0
Road	2029	0	0	0	0	0	0	0	0
Road	2030	0	0	0	0	0	0	0	0
Road	2031	0	0	0	0	0	0	0	0
Road	2032	0	0	0	0	0	0	0	0
Road	2033	0	0	0	0	0	0	0	0
Road	2034	0	0	0	0	0	0	0	0
Road	2035	0	0	0	0	0	0	0	0
Road	2036	0	0	0	0	0	0	0	0
Road	2037	0	0	0	0	0	0	0	0
Road	2038	0	0	0	0	0	0	0	0
Road	2039	0	0	0	0	0	0	0	0
Road	2040	0	0	0	0	0	0	0	0
Road	2041	0	0	0	0	0	0	0	0
Road	2042	0	0	0	0	0	0	0	0
Road	2043	0	0	0	0	0	0	0	0
Road	2044	0	0	0	0	0	0	0	0
Road	2045	0	0	0	0	0	0	0	0
Road	2046	0	0	0	0	0	0	0	0
Road	2047	0	0	0	0	0	0	0	0
Road	2048	0	0	0	0	0	0	0	0
Road	2049	0	0	0	0	0	0	0	0
Road	2050	0	0	0	0	0	0	0	0
Road	2051	0	0	0	0	0	0	0	0
Road	2052	0	0	0	0	0	0	0	0
Road	2053	0	0	0	0	0	0	0	0
Road	2054	0	0	0	0	0	0	0	0
Road	2055	0	0	0	0	0	0	0	0
Road	2056	0	0	0	0	0	0	0	0
Road	2057	0	0	0	0	0	0	0	0
Road	2058	0	0	0	0	0	0	0	0
Road	2059	0	0	0	0	0	0	0	0
Road	2060	0	0	0	0	0	0	0	0
Road	2061	0	0	0	0	0	0	0	0
Road	2062	0	0	0	0	0	0	0	0
Road	2063	0	0	0	0	0	0	0	0
Road	2064	0	0	0	0	0	0	0	0
Road	2065	0	0	0	0	0	0	0	0

Road	2066	0	0	0	0	0	0	0	0
Road	2067	0	0	0	0	0	0	0	0
Road	2068	0	0	0	0	0	0	0	0
Road	2069	0	0	0	0	0	0	0	0
Road	2070	0	0	0	0	0	0	0	0
Road	2071	0	0	0	0	0	0	0	0
Road	2072	0	0	0	0	0	0	0	0
Road	2073	0	0	0	0	0	0	0	0
Road	2074	0	0	0	0	0	0	0	0
Road	2075	0	0	0	0	0	0	0	0
Road	2076	0	0	0	0	0	0	0	0
Road	2077	0	0	0	0	0	0	0	0
Road	2078	0	0	0	0	0	0	0	0
Road	2079	0	0	0	0	0	0	0	0
Road	2080	0	0	0	0	0	0	0	0
Road	2081	0	0	0	0	0	0	0	0
Road	2082	0	0	0	0	0	0	0	0

DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.	Dev_Cont
Road	2020	55	0	0	17	0	0	0	0
Road	2021	94	138	4106	17	0	0	0	0
Road	2022	0	138	829	26	0	0	0	0
Road	2023	0	0	0	13	0	0	0	398
Road	2024	0	0	0	0	2	0	0	0
Road	2025	0	0	0	0	2	0	0	0
Road	2026	0	0	0	0	2	0	0	0
Road	2027	0	0	0	0	2	0	0	0
Road	2028	0	0	0	0	11	0	0	0
Road	2029	0	0	0	0	2	0	0	0
Road	2030	0	0	0	0	2	0	0	0
Road	2031	0	0	0	0	2	0	0	0
Road	2032	0	0	0	0	2	0	0	0
Road	2033	0	0	0	0	42	0	0	0
Road	2034	0	0	0	0	2	0	0	0
Road	2035	0	0	0	0	2	0	0	0
Road	2036	0	0	0	0	2	0	0	0
Road	2037	0	0	0	0	2	0	0	0
Road	2038	0	0	0	0	11	0	0	0
Road	2039	0	0	0	0	2	0	0	0
Road	2040	0	0	0	0	2	0	0	0
Road	2041	0	0	0	0	2	0	0	0
Road	2042	0	0	0	0	2	0	0	0

Road	2043	0	0	0	0	148	0	0	0
Road	2044	0	0	0	0	2	0	0	0
Road	2045	0	0	0	0	2	0	0	0
Road	2046	0	0	0	0	2	0	0	0
Road	2047	0	0	0	0	2	0	0	0
Road	2048	0	0	0	0	29	0	0	0
Road	2049	0	0	0	0	2	0	0	0
Road	2050	0	0	0	0	2	0	0	0
Road	2051	0	0	0	0	2	0	0	0
Road	2052	0	0	0	0	2	0	0	0
Road	2053	0	0	0	0	42	0	0	0
Road	2054	0	0	0	0	2	0	0	0
Road	2055	0	0	0	0	2	0	0	0
Road	2056	0	0	0	0	2	0	0	0
Road	2057	0	0	0	0	2	0	0	0
Road	2058	0	0	0	0	11	0	0	0
Road	2059	0	0	0	0	2	0	0	0
Road	2060	0	0	0	0	2	0	0	0
Road	2061	0	0	0	0	2	0	0	0
Road	2062	0	0	0	0	2	0	0	0
Road	2063	0	0	0	0	322	0	0	0
Road	2064	0	0	0	0	2	0	0	0
Road	2065	0	0	0	0	2	0	0	0
Road	2066	0	0	0	0	2	0	0	0
Road	2067	0	0	0	0	2	0	0	0
Road	2068	0	0	0	0	11	0	0	0
Road	2069	0	0	0	0	2	0	0	0
Road	2070	0	0	0	0	2	0	0	0
Road	2071	0	0	0	0	2	0	0	0
Road	2072	0	0	0	0	2	0	0	0
Road	2073	0	0	0	0	78	0	0	0
Road	2074	0	0	0	0	2	0	0	0
Road	2075	0	0	0	0	2	0	0	0
Road	2076	0	0	0	0	2	0	0	0
Road	2077	0	0	0	0	2	0	0	0
Road	2078	0	0	0	0	11	0	0	0
Road	2079	0	0	0	0	2	0	0	0
Road	2080	0	0	0	0	2	0	0	0
Road	2081	0	0	0	0	2	0	0	0
Road	2082	0	0	0	0	2	0	0	0

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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Road	2020	0	51	51
Road	2021	0	2983	2983
Road	2022	0	657	657
Road	2023	0	8	8
Road	2024	0	1	1
Road	2025	0	1	1
Road	2026	0	1	1
Road	2027	0	1	1
Road	2028	0	6	6
Road	2029	0	1	1
Road	2030	0	1	1
Road	2031	0	1	1
Road	2032	0	1	1
Road	2033	0	19	19
Road	2034	0	1	1
Road	2035	0	1	1
Road	2036	0	1	1
Road	2037	0	1	1
Road	2038	0	4	4
Road	2039	0	1	1
Road	2040	0	1	1
Road	2041	0	1	1
Road	2042	0	1	1
Road	2043	0	48	48
Road	2044	0	1	1
Road	2045	0	1	1
Road	2046	0	0	0
Road	2047	0	0	0
Road	2048	0	8	8
Road	2049	0	0	0
Road	2050	0	0	0
Road	2051	0	0	0
Road	2052	0	0	0
Road	2053	0	10	10
Road	2054	0	0	0
Road	2055	0	0	0
Road	2056	0	0	0
Road	2057	0	0	0
Road	2058	0	2	2
Road	2059	0	0	0
Road	2060	0	0	0
Road	2061	0	0	0
Road	2062	0	0	0
Road	2063	0	55	55

Road	2064	0	0	0
Road	2065	0	0	0
Road	2066	0	0	0
Road	2067	0	0	0
Road	2068	0	2	2
Road	2069	0	0	0
Road	2070	0	0	0
Road	2071	0	0	0
Road	2072	0	0	0
Road	2073	0	10	10
Road	2074	0	0	0
Road	2075	0	0	0
Road	2076	0	0	0
Road	2077	0	0	0
Road	2078	0	1	1
Road	2079	0	0	0
Road	2080	0	0	0
Road	2081	0	0	0
Road	2082	0	0	0
Road	Total	0	3887	3887

#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1415	1415
Car	2023	PM peak	1762	1762
Car	2023	Inter-peak	3855	3855
Car	2023	Off-peak	516	516
Car	2023	All	7547	7547
Car	2037	AM peak	1415	1415
Car	2037	PM peak	1729	1729
Car	2037	Inter-peak	4089	4089
Car	2037	Off-peak	543	543
Car	2037	All	7776	7776
LGV Personal	2023	AM peak	26	26
LGV Personal	2023	PM peak	26	26
LGV Personal	2023	Inter-peak	77	77
LGV Personal	2023	Off-peak	4	4
LGV Personal	2023	All	132	132
LGV Personal	2037	AM peak	26	26
LGV Personal	2037	PM peak	25	25
LGV Personal	2037	Inter-peak	82	82
LGV Personal	2037	Off-peak	4	4
LGV Personal	2037	All	136	136

LGV Freight	2023	AM peak	188	188
LGV Freight	2023	PM peak	189	189
LGV Freight	2023	Inter-peak	564	564
LGV Freight	2023	Off-peak	29	29
LGV Freight	2023	All	969	969
LGV Freight	2037	AM peak	188	188
LGV Freight	2037	PM peak	185	185
LGV Freight	2037	Inter-peak	598	598
LGV Freight	2037	Off-peak	30	30
LGV Freight	2037	All	1001	1001
OGV1	2023	AM peak	14	14
OGV1	2023	PM peak	13	13
OGV1	2023	Inter-peak	74	74
OGV1	2023	Off-peak	15	15
OGV1	2023	All	117	117
OGV1	2037	AM peak	14	14
OGV1	2037	PM peak	13	13
OGV1	2037	Inter-peak	79	79
OGV1	2037	Off-peak	16	16
OGV1	2037	All	122	122
OGV2	2023	AM peak	24	24
OGV2	2023	PM peak	45	45
OGV2	2023	Inter-peak	157	157
OGV2	2023	Off-peak	35	35
OGV2	2023	All	262	262
OGV2	2037	AM peak	24	24
OGV2	2037	PM peak	44	44
OGV2	2037	Inter-peak	167	167
OGV2	2037	Off-peak	37	37
OGV2	2037	All	272	272
All	2023	AM peak	1666	1666
All	2023	PM peak	2035	2035
All	2023	Inter-peak	4726	4726
All	2023	Off-peak	599	599
All	2023	All	9026	9026
All	2037	AM peak	1666	1666
All	2037	PM peak	1997	1997
All	2037	Inter-peak	5014	5014
All	2037	Off-peak	630	630
All	2037	All	9307	9307

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
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Road	2023	485	0	339	234	376	0	309	233
Road	2037	402	0	161	149	292	0	146	149

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something			Electric
		Petrol	Diesel	Electric	Petrol	Diesel	Electric	
Car	2023	247	206	34	223	188	32	
Car	2037	179	95	346	160	86	325	
LGV Personal	2023	0	0	0	0	0	0	
LGV Personal	2037	0	0	0	0	0	0	
LGV Freight	2023	0	18	0	0	17	0	
LGV Freight	2037	1	13	5	0	12	5	
OGV1	2023	0	0	0	0	0	0	
OGV1	2037	0	0	0	0	0	0	
OGV2	2023	0	5	0	0	4	0	
OGV2	2037	0	4	0	0	3	0	
All	2023	247	229	35	223	210	33	
All	2037	180	112	351	160	102	330	
Car	Total	9376	5254	24836	8383	4755	23291	
LGV Personal	Total	0	8	5	1	11	7	
LGV Freight	Total	34	711	447	32	667	447	
OGV1	Total	0	16	0	0	25	0	
OGV2	Total	0	218	0	0	208	0	
All	Total	9410	6207	25289	8415	5665	23745	

#### CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (E000s, low)			cost (E000s, central)			cost (E000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	1010	916	-94	20	18	-2	41	37	-4	61	56	-6
Car	2037	601	538	-62	14	12	-1	27	25	-3	41	37	-4
LGV Personal	2023	1	1	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	43	41	-2	1	1	-0	2	2	-0	3	2	-0
LGV Freight	2037	32	30	-2	1	1	-0	1	1	-0	2	2	-0
OGV1	2023	1	1	0	0	0	0	0	0	0	0	0	0
OGV1	2037	1	1	0	0	0	0	0	0	0	0	0	0
OGV2	2023	11	11	-0	0	0	-0	0	0	-0	1	1	-0
OGV2	2037	9	8	-0	0	0	-0	0	0	-0	1	1	-0
All	2023	1066	970	-96	21	19	-2	43	39	-4	65	59	-6
All	2024	1041	946	-94	21	19	-2	41	38	-4	62	56	-6
All	2025	1010	918	-92	20	18	-2	39	36	-4	59	54	-5
All	2026	979	889	-90	19	17	-2	37	34	-3	56	51	-5
All	2027	948	860	-88	18	16	-2	35	32	-3	53	48	-5

All	2028	918	832	-86	17	15	-2	34	31	-3	51	46	-5
All	2029	889	805	-84	16	15	-2	32	29	-3	48	44	-5
All	2030	849	768	-81	15	13	-1	30	27	-3	45	41	-4
All	2031	812	734	-78	15	14	-1	30	27	-3	45	41	-4
All	2032	777	702	-75	15	14	-1	30	27	-3	46	41	-4
All	2033	745	673	-73	15	14	-1	30	27	-3	45	41	-4
All	2034	716	646	-70	15	14	-1	30	27	-3	45	41	-4
All	2035	689	621	-68	15	13	-1	30	27	-3	45	41	-4
All	2036	665	599	-66	15	13	-1	30	27	-3	45	40	-4
All	2037	643	579	-64	15	13	-1	29	26	-3	44	40	-4
All	2038	621	559	-62	14	13	-1	29	26	-3	43	39	-4
All	2039	602	542	-60	14	13	-1	29	26	-3	43	39	-4
All	2040	583	524	-58	14	13	-1	28	25	-3	42	38	-4
All	2041	563	507	-56	14	12	-1	27	25	-3	41	37	-4
All	2042	548	493	-55	13	12	-1	27	24	-3	41	36	-4
All	2043	534	481	-53	13	12	-1	27	24	-3	40	36	-4
All	2044	521	469	-52	13	12	-1	26	24	-3	39	35	-4
All	2045	510	459	-51	13	12	-1	26	23	-3	39	35	-4
All	2046	499	450	-50	13	11	-1	25	23	-3	38	34	-4
All	2047	490	441	-49	12	11	-1	25	22	-2	37	34	-4
All	2048	481	433	-48	12	11	-1	24	22	-2	37	33	-4
All	2049	473	426	-47	12	11	-1	24	22	-2	36	32	-4
All	2050	465	419	-46	12	11	-1	24	21	-2	35	32	-4
All	2051	465	419	-46	12	11	-1	24	21	-2	36	32	-4
All	2052	465	419	-46	12	10	-1	24	21	-2	36	32	-4
All	2053	465	419	-46	12	10	-1	24	21	-2	36	32	-4
All	2054	465	419	-46	11	10	-1	24	21	-2	36	33	-4
All	2055	465	419	-46	11	10	-1	24	21	-2	36	33	-4
All	2056	465	419	-46	11	10	-1	24	21	-2	36	33	-4
All	2057	465	419	-46	11	10	-1	24	21	-2	36	33	-4
All	2058	465	419	-46	11	10	-1	24	21	-2	36	33	-4
All	2059	465	419	-46	11	10	-1	23	21	-2	36	33	-4
All	2060	465	419	-46	10	9	-1	23	21	-2	36	33	-4
All	2061	465	419	-46	10	9	-1	23	21	-2	36	32	-4
All	2062	465	419	-46	10	9	-1	23	20	-2	36	32	-4
All	2063	465	419	-46	10	9	-1	22	20	-2	35	32	-3
All	2064	465	419	-46	10	9	-1	22	20	-2	35	31	-3
All	2065	465	419	-46	9	8	-1	22	20	-2	34	31	-3
All	2066	465	419	-46	9	8	-1	21	19	-2	34	30	-3
All	2067	465	419	-46	9	8	-1	21	19	-2	33	30	-3
All	2068	465	419	-46	8	8	-1	21	19	-2	33	29	-3
All	2069	465	419	-46	8	7	-1	20	18	-2	32	29	-3
All	2070	465	419	-46	8	7	-1	20	18	-2	31	28	-3
All	2071	465	419	-46	8	7	-1	19	17	-2	31	28	-3

All	2072	465	419	-46	7	7	-1	19	17	-2	30	27	-3
All	2073	465	419	-46	7	6	-1	18	16	-2	29	27	-3
All	2074	465	419	-46	7	6	-1	18	16	-2	29	26	-3
All	2075	465	419	-46	6	6	-1	17	16	-2	28	25	-3
All	2076	465	419	-46	6	6	-1	17	15	-2	27	25	-3
All	2077	465	419	-46	6	5	-1	16	15	-2	27	24	-3
All	2078	465	419	-46	6	5	-1	16	14	-2	26	23	-3
All	2079	465	419	-46	5	5	-1	15	14	-2	25	23	-3
All	2080	465	419	-46	5	5	-1	15	13	-1	24	22	-2
All	2081	465	419	-46	5	4	-0	14	13	-1	24	21	-2
All	2082	465	419	-46	5	4	-0	14	13	-1	23	21	-2
Car	Total	32131	28867	-3264	650	584	-66	1390	1248	-141	2130	1913	-217
LGV Personal	Total	21	27	6	0	1	0	1	1	0	1	2	0
LGV Freight	Total	1792	1678	-113	36	34	-2	78	73	-5	120	112	-8
OGV1	Total	38	61	23	1	1	0	2	3	1	3	4	2
OGV2	Total	527	504	-23	11	10	-0	23	22	-1	35	34	-2
All	Total	34509	31138	-3371	698	629	-68	1493	1347	-146	2290	2066	-224

#### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (€000s, low)			cost (€000s, central)			cost (€000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car	2023	9	8	-1	0	0	-0	0	0	-0	0	0	0
Car	2037	20	19	-1	0	0	-0	1	1	-0	1	1	-0
LGV Personal	2023	0	0	0	0	0	0	0	0	0	0	0	0
LGV Personal	2037	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	2023	0	0	-0	0	0	-0	0	0	-0	0	0	-0
LGV Freight	2037	0	0	-0	0	0	-0	0	0	-0	0	0	-0
OGV1	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV1	2037	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2023	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	2037	0	0	0	0	0	0	0	0	0	0	0	0
All	2023	9	8	-1	0	0	-0	0	0	-0	0	0	-0
All	2024	11	11	-1	0	0	-0	0	0	-0	0	0	-0
All	2025	15	14	-1	0	0	-0	0	0	-0	1	1	-0
All	2026	19	18	-1	0	0	-0	1	0	-0	1	1	-0
All	2027	22	21	-1	0	0	-0	1	1	-0	1	1	-0
All	2028	24	23	-2	0	0	-0	1	1	-0	1	1	-0
All	2029	25	24	-2	0	0	-0	1	1	-0	1	1	-0
All	2030	25	23	-2	0	0	-0	1	1	-0	1	1	-0
All	2031	25	24	-2	0	0	-0	1	1	-0	1	1	-0
All	2032	25	23	-2	1	0	-0	1	1	-0	1	1	-0
All	2033	24	23	-2	1	0	-0	1	1	-0	1	1	-0
All	2034	24	22	-1	1	0	-0	1	1	-0	1	1	-0
All	2035	23	21	-1	1	0	-0	1	1	-0	1	1	-0

All	2036	22	20	-1	1	0	-0	1	1	-0	1	1	-0
All	2037	20	19	-1	0	0	-0	1	1	-0	1	1	-0
All	2038	19	18	-1	0	0	-0	1	1	-0	1	1	-0
All	2039	18	17	-1	0	0	-0	1	1	-0	1	1	-0
All	2040	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2041	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2042	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2043	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2044	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2045	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2046	16	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2047	15	15	-1	0	0	-0	1	1	-0	1	1	-0
All	2048	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2049	15	14	-1	0	0	-0	1	1	-0	1	1	-0
All	2050	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2051	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2052	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2053	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2054	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2055	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2056	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2057	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2058	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2059	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2060	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2061	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2062	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2063	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2064	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2065	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2066	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2067	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2068	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2069	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2070	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2071	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2072	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2073	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2074	14	13	-1	0	0	-0	1	1	-0	1	1	-0
All	2075	14	13	-1	0	0	-0	1	0	-0	1	1	-0
All	2076	14	13	-1	0	0	-0	1	0	-0	1	1	-0
All	2077	14	13	-1	0	0	-0	1	0	-0	1	1	-0
All	2078	14	13	-1	0	0	-0	0	0	-0	1	1	-0
All	2079	14	13	-1	0	0	-0	0	0	-0	1	1	-0

All	2080	14	13	-1	0	0	-0	0	0	-0	1	1	-0
All	2081	14	13	-1	0	0	-0	0	0	-0	1	1	-0
All	2082	14	13	-1	0	0	-0	0	0	-0	1	1	-0
Car	Total	965	904	-60	20	18	-1	41	38	-3	63	59	-4
LGV Personal	Total	0	0	0	0	0	0	0	0	0	0	0	0
LGV Freight	Total	15	15	-0	0	0	-0	1	1	-0	1	1	-0
OGV1	Total	0	0	0	0	0	0	0	0	0	0	0	0
OGV2	Total	0	0	0	0	0	0	0	0	0	0	0	0
All	Total	980	920	-60	20	19	-1	42	39	-3	64	60	-4

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	149	147	-2	3	3	-0	6	6	-0	9	9	-0
AM peak	2037	94	85	-9	2	2	-0	4	4	-0	6	6	-1
PM peak	2023	224	183	-41	4	4	-1	9	7	-2	14	11	-2
PM peak	2037	126	101	-25	3	2	-1	6	5	-1	9	7	-2
Inter-peak	2023	625	577	-48	12	12	-1	25	23	-2	38	35	-3
Inter-peak	2037	381	354	-28	9	8	-1	17	16	-1	26	24	-2
Off-peak	2023	68	63	-5	1	1	-0	3	3	-0	4	4	-0
Off-peak	2037	41	39	-3	1	1	-0	2	2	-0	3	3	-0
AM peak	Total	4994	4585	-409	101	93	-8	216	198	-18	332	304	-28
PM peak	Total	6864	5527	-1337	139	112	-27	297	239	-58	455	366	-89
Inter-peak	Total	20424	18937	-1487	413	383	-30	884	820	-64	1356	1257	-99
Off-peak	Total	2227	2089	-138	45	42	-3	96	90	-6	148	139	-9

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System) will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal, the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)			cost (£000s, high)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
AM peak	2037	3	3	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2023	2	2	-0	0	0	-0	0	0	-0	0	0	-0
PM peak	2037	4	4	-0	0	0	-0	0	0	-0	0	0	-0
Inter-peak	2023	5	5	-0	0	0	-0	0	0	-0	0	0	-0
Inter-peak	2037	12	12	-1	0	0	-0	1	1	-0	1	1	-0
Off-peak	2023	1	1	-0	0	0	-0	0	0	-0	0	0	-0
Off-peak	2037	1	1	-0	0	0	-0	0	0	-0	0	0	-0



AM peak	Total	141	132	-9	3	3	-0	6	6	-0	9	9	-1
PM peak	Total	192	173	-19	4	4	-0	8	7	-1	13	11	-1
Inter-peak	Total	584	555	-30	12	11	-1	25	24	-1	38	36	-2
Off-peak	Total	63	60	-3	1	1	-0	3	3	-0	4	4	-0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User		Vehicle_Operating_Cost		Operator_Rev		Indirect
		User_Charges	Time_PT_fares_(pri)	Fuel	Non_fuel_PT_fares_(pri)	Operator_Rev	Taxes	
Road	2023	109	0	31	0	0	-17	
Road	2024	110	0	29	0	0	-16	
Road	2025	110	0	28	0	0	-16	
Road	2026	111	0	27	0	0	-15	
Road	2027	111	0	26	0	0	-14	
Road	2028	111	0	25	0	0	-13	
Road	2029	111	0	24	0	0	-13	
Road	2030	111	0	23	0	0	-12	
Road	2031	111	0	21	0	0	-11	
Road	2032	111	0	20	0	0	-10	
Road	2033	111	0	19	0	0	-10	
Road	2034	111	0	18	0	0	-9	
Road	2035	110	0	17	0	0	-9	
Road	2036	110	0	16	0	0	-8	
Road	2037	110	0	15	0	0	-8	
Road	2038	108	0	14	0	0	-7	
Road	2039	106	0	14	0	0	-7	
Road	2040	104	0	13	0	0	-6	
Road	2041	102	0	12	0	0	-6	
Road	2042	99	0	12	0	0	-6	
Road	2043	97	0	11	0	0	-5	
Road	2044	95	0	10	0	0	-5	
Road	2045	93	0	10	0	0	-5	
Road	2046	91	0	10	0	0	-5	
Road	2047	89	0	9	0	0	-4	
Road	2048	88	0	9	0	0	-4	
Road	2049	86	0	8	0	0	-4	
Road	2050	84	0	8	0	0	-4	
Road	2051	82	0	8	0	0	-4	
Road	2052	81	0	8	0	0	-4	
Road	2053	80	0	7	0	0	-4	
Road	2054	79	0	7	0	0	-3	
Road	2055	77	0	7	0	0	-3	
Road	2056	76	0	7	0	0	-3	
Road	2057	75	0	7	0	0	-3	

Road	2058	74	0	6	0	0	-3
Road	2059	73	0	6	0	0	-3
Road	2060	71	0	6	0	0	-3
Road	2061	70	0	6	0	0	-3
Road	2062	69	0	6	0	0	-3
Road	2063	68	0	6	0	0	-3
Road	2064	67	0	5	0	0	-3
Road	2065	66	0	5	0	0	-3
Road	2066	65	0	5	0	0	-3
Road	2067	64	0	5	0	0	-3
Road	2068	63	0	5	0	0	-2
Road	2069	63	0	5	0	0	-2
Road	2070	62	0	5	0	0	-2
Road	2071	61	0	5	0	0	-2
Road	2072	60	0	4	0	0	-2
Road	2073	59	0	4	0	0	-2
Road	2074	58	0	4	0	0	-2
Road	2075	57	0	4	0	0	-2
Road	2076	56	0	4	0	0	-2
Road	2077	56	0	4	0	0	-2
Road	2078	55	0	4	0	0	-2
Road	2079	54	0	4	0	0	-2
Road	2080	53	0	4	0	0	-2
Road	2081	52	0	4	0	0	-2
Road	2082	52	0	3	0	0	-2
Road	Total	5001	0	649	10	0	-334

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri)	Fuel	Non_fuel	PT_fares_(pri)	
Car	2023	105	0	30	0	0	-17
Car	2037	105	0	15	0	0	-8
LGV Personal	2023	0	0	-0	0	0	0
LGV Personal	2037	0	0	-0	0	0	0
LGV Freight	2023	5	0	1	0	0	-0
LGV Freight	2037	5	0	0	0	0	-0
OGV1	2023	-0	0	-0	-0	0	0
OGV1	2037	-0	0	-0	-0	0	0
OGV2	2023	0	0	0	0	0	-0
OGV2	2037	0	0	0	0	0	-0
All	2023	109	0	31	0	0	-17
All	2037	110	0	15	0	0	-8
Car	Total	4765	0	633	4	0	-325

LGV Personal	Total	2	0	-1	0	0	1
LGV Freight	Total	234	0	17	6	0	-10
OGV1	Total	-0	0	-3	-0	0	2
OGV2	Total	1	0	3	0	0	-2
All	Total	5001	0	649	10	0	-334

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
All	2023	109	0	31	0	0	-17		
All	2037	110	0	15	0	0	-8		
All	Total	5001	0	649	10	0	-334		

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
Business	2023	5	0	1	0	0	-0		
Business	2037	6	0	0	0	0	-0		
Commuting	2023	48	0	3	0	0	-2		
Commuting	2037	47	0	2	0	0	-1		
Other	2023	56	0	27	0	0	-15		
Other	2037	57	0	13	0	0	-6		
Business	Total	271	0	18	10	0	-10		
Commuting	Total	2152	0	79	0	0	-41		
Other	Total	2578	0	552	0	0	-283		

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Fuel	Vehicle_Operating_Cost	Non_fuel_PT_fares_(pri)	Operator_Rev	Indirect	Taxes
AM peak	2023	48	0	1	0	0	-0		
AM peak	2037	68	0	2	0	0	-1		
PM peak	2023	121	0	13	0	0	-7		
PM peak	2037	87	0	6	0	0	-3		
Inter-peak	2023	-54	0	15	-0	0	-9		
Inter-peak	2037	-41	0	7	-0	0	-3		
Off-peak	2023	-5	0	2	-0	0	-1		
Off-peak	2037	-4	0	1	-0	0	-0		
AM peak	Total	2940	0	72	9	0	-36		
PM peak	Total	4203	0	257	9	0	-135		
Inter-peak	Total	-1953	0	293	-7	0	-148		
Off-peak	Total	-189	0	28	-1	0	-14		

NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	0	0	0
Car	Business	2037	0	0	-0	0	0	0
Car	Business	Total	0	0	-7	18	0	0
Car	Commuting	2023	0	0	-2	7	2	0
Car	Commuting	2037	0	0	-2	9	2	0
Car	Commuting	Total	0	0	-92	509	100	0
Car	Other	2023	0	0	-24	31	10	0
Car	Other	2037	0	0	-24	38	9	0
Car	Other	Total	0	0	-1452	2237	572	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	2	0	0
LGV Freight	Business	2023	0	0	-1	1	0	0
LGV Freight	Business	2037	0	0	-1	1	0	0
LGV Freight	Business	Total	0	0	-31	76	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-2	2	0	0
OGV2	Commuting	2023	0	0	0	0	0	0

OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	1	0	0
Car	Business	2037	0	0	-1	1	0	0
Car	Business	Total	0	0	-25	62	0	0
Car	Commuting	2023	0	0	-11	46	12	0
Car	Commuting	2037	0	0	-8	47	9	0
Car	Commuting	Total	0	0	-388	2117	424	0
Car	Other	2023	0	0	-77	101	33	0
Car	Other	2037	0	0	-59	93	23	0
Car	Other	Total	0	0	-2804	4270	1111	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-1	3	0	0
LGV Freight	Business	2023	0	0	-4	9	0	0
LGV Freight	Business	2037	0	0	-3	9	0	0
LGV Freight	Business	Total	0	0	-163	397	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-3	2	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0

OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	2037	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-14	15	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	2	0	0
Car	Business	2037	0	0	-1	2	0	0
Car	Business	Total	0	0	-28	69	0	0
Car	Commuting	2023	0	0	-10	48	13	0
Car	Commuting	2037	0	0	-8	48	9	0
Car	Commuting	Total	0	0	-369	2170	430	0
Car	Other	2023	0	0	-69	118	34	0
Car	Other	2037	0	0	-56	102	23	0
Car	Other	Total	0	0	-2667	4661	1136	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	2037	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-2	3	0	0
LGV Freight	Business	2023	0	0	-4	9	0	0
LGV Freight	Business	2037	0	0	-3	9	0	0
LGV Freight	Business	Total	0	0	-143	399	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	2037	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	2037	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	2037	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-7	3	0	0



LGV Freight	Other	2037	0	0	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0	0	0
OGV1	Business	2023	0	-0	0	0	0	0	0	0
OGV1	Business	2037	0	-0	0	0	0	0	0	0
OGV1	Business	Total	0	-0	0	0	0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0	0	0
OGV1	Commuting	2037	0	0	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0	0	0
OGV1	Other	2037	0	0	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0	0	0
OGV2	Business	2023	0	0	0	0	0	0	0	0
OGV2	Business	2037	0	0	0	0	0	0	0	0
OGV2	Business	Total	0	0	0	0	0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0	0	0
OGV2	Commuting	2037	0	0	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0	0	0
OGV2	Other	2037	0	0	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0	0	0

#### MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car	Business	2023	0	1	0	0	0	0	0	0
Car	Business	2037	0	1	0	0	0	0	0	0
Car	Business	Total	0	37	0	0	0	0	0	0
Car	Commuting	2023	0	48	0	0	0	0	0	0
Car	Commuting	2037	0	47	0	0	0	0	0	0
Car	Commuting	Total	0	2152	0	0	0	0	0	0
Car	Other	2023	0	56	0	0	0	0	0	0
Car	Other	2037	0	57	0	0	0	0	0	0
Car	Other	Total	0	2576	0	0	0	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0	0	0
LGV Personal	Business	2037	0	0	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0	0	0
LGV Personal	Commuting	2037	0	0	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	0	0	0	0	0	0
LGV Personal	Other	2037	0	0	0	0	0	0	0	0
LGV Personal	Other	Total	0	2	0	0	0	0	0	0
LGV Freight	Business	2023	0	5	0	0	0	0	0	0
LGV Freight	Business	2037	0	5	0	0	0	0	0	0





LGV Personal Other	2023	0	-0	0	0	0	0	0	0
LGV Personal Other	2037	0	0	0	0	0	0	0	0
LGV Personal Other	Total	0	1	0	0	0	0	0	0
LGV Freight Business	2023	0	5	0	0	0	0	0	0
LGV Freight Business	2037	0	6	0	0	0	0	0	0
LGV Freight Business	Total	0	257	0	0	0	0	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0	0	0
LGV Freight Commuting	2037	0	0	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0	0	0
LGV Freight Other	2037	0	0	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0	0	0
OGV1 Business	2023	0	-0	0	0	0	0	0	0
OGV1 Business	2037	0	-0	0	0	0	0	0	0
OGV1 Business	Total	0	-4	0	0	0	0	0	0
OGV1 Commuting	2023	0	0	0	0	0	0	0	0
OGV1 Commuting	2037	0	0	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0	0	0
OGV1 Other	2037	0	0	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0	0	0
OGV2 Business	2023	0	0	0	0	0	0	0	0
OGV2 Business	2037	0	0	0	0	0	0	0	0
OGV2 Business	Total	0	5	0	0	0	0	0	0
OGV2 Commuting	2023	0	0	0	0	0	0	0	0
OGV2 Commuting	2037	0	0	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0	0	0
OGV2 Other	2037	0	0	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0	0	0

#### SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years		
Mode	2023	2037
Road	13.25%	17.63%

Economy:Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	2152	2152
Vehicle operating costs	79	79
User charges	0	0
During Construction & Maintenance	0	0

NET CONSUMER - COMMUTING BENEFITS            2232            2232

Consumer - Other user benefits	All Modes	Road
Travel Time	2578	2578
Vehicle operating costs	552	552
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>3130</b>	<b>3130</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	271	37	234
Vehicle operating costs	28	5	23
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>299</b>	<b>41</b>	<b>257</b>

Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
<b>Subtotal</b>	<b>0</b>	<b>0</b>

Other business Impacts

Developer contributions	-255	-255
<b>NET BUSINESS IMPACT</b>	<b>44</b>	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)            5406

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	188	188
Investment Costs	805	805
Developer Contributions	-255	-255
Grant/Subsidy Payments	0	0
<b>NET IMPACT</b>	<b>738</b>	<b>738</b>

Central Government Funding: Transport    ALL MODES    Road

Revenue	0	0
Operating costs	0	0
Investment costs	2894	2894
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	2894	2894

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	334	334
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#### TOTALS

Broad Transport Budget	3632	3632
Wider Public Finances	334	334

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	146
Economic Efficiency: Consumer Users (Commuting)	2232
Economic Efficiency: Consumer Users (Other)	3130
Economic Efficiency: Business Users and Providers	44
Wider Public Finances (Indirect Taxation Revenues)	-334
Present Value of Benefits (PVB)	5218
Broad Transport Budget	3632
Present Value of Costs (PVC)	3632
OVERALL IMPACTS	
Net Present Value (NPV)	1586
Benefit to Cost Ratio (BCR)	1.437

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-7\_Kirk Hill\_V4.1\_Low\_15OB

\* Scheme File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\MasterFile-7\_Kirk Hill\_Main\_V4.1\_Low\_15OB.txt

\* Economic File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_SensTest.txt

\* Output File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Low\_V4.1\_Sens\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.1\_Low\_Sens\_15OB.OUT

\* Log File : L:\60625845\_A614 MRN DFT responses\08\_Models\TUBA\7-Kirk Hill\TUBA\_Low\_V4.1\_Sens\_15OB\7\_Kirk Hill\_Core\_Outputs\_V4.1\_Low\_Sens\_15OB.log

\* User ID : sam.shearstone

\* Computer ID : UKDBYL54NCVP2

Elapsed time : 0hrs 0mins 5secs

# Appendix CC – Annualisation Process

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Project:	<b>A614 Major Road Network Improvement Scheme</b>	Job No:	<b>60625845</b>
Subject:	<b>TN01 Annualisation Factors</b>		
Prepared by:	<b>Michael Paris</b>	Date:	<b>16/09/2020</b>
Checked by:	<b>Adam Hall</b>	Date:	<b>14/10/20</b>
Lead Verifier:	<b>David Elliott</b>	Date:	<b>18/12/120</b>

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## 1. Introduction

- 1.1 Nottinghamshire County Council (NCC) is promoting junction improvements at six key locations on the A614 – A6097 corridor as a single scheme package. These junctions are:
- A614 / A616 / A6075 roundabout (hereafter referred to as the Ollerton roundabout);
  - A614 / Eakring Road / Deerdale Lane crossroads (hereafter referred to as Deerdale Lane);
  - A614 / Mickledale Lane crossroads (hereafter referred to as Mickledale Lane);
  - A614 / Mansfield Road roundabout (hereafter referred to as the White Post roundabout);
  - A614 / A6097 junction priority junction (hereafter referred to as the Warren Hill junction); and
  - A6097 / A612 Nottingham Road / Southwell Road roundabout (hereafter referred to as the Lowdham Roundabout).
- 1.1 AECOM has been commissioned by NCC to undertake relevant analyses at each of these junctions with a view to making the junctions operate with reduced delays or to make improvements to overall network resilience.
- 1.2 In accordance with the DfT's TAG appraisal method, the TUBA economic appraisal software bases its analysis of results on yearly data. The analysis of outputs are therefore required to be annualised. The Annualisation process converts the assignment outputs from the discrete time periods into annual values.
- 1.3 Annualisation factors therefore need to be calculated to convert the validated model outputs. These Annualisation factors were calculated from weekday and weekend traffic profiles derived from a long-term traffic count.
- 1.4 This technical note outlines the processes undertaken to obtain the Annualisation factors.

## 2. Method

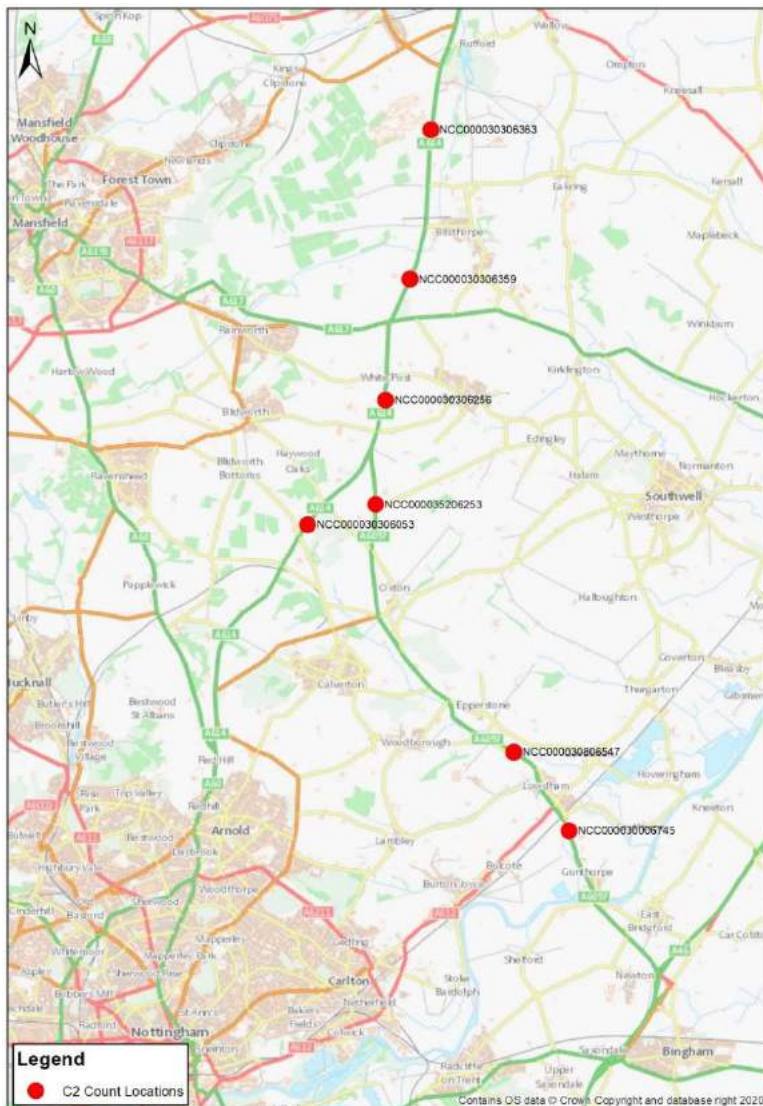
- 2.1 Annualisation factors have been calculated for the year June 2017 to May 2018. Each junction has been calculated individually with multiple count locations where available. For Annualisation factors to be calculated a count along a major road is needed that meets the following criteria:
- The count is in a prominent position in relation to the modelled area,
  - a full year of traffic flow data exists (divided into hourly intervals) with few gaps and
  - the flows at the count location are high enough such that the count provides a good representation of the daily flow changes throughout the detailed modelled area.

2.2 Count data was obtained from the online traffic flow database C2, with details of the counts used in Table 1. A plan of the count locations is found in Figure 1.

**Table 1 Annualisation Count Locations**

Count Name	Junction Location	Description	X	Y
NCC000030006745	Lowdham Roundabout	A6097 South of Lowdham Roundabout	467410	345474
NCC000030806547	Lowdham Roundabout	A6097 Epperstone Bypass North of Lowdham Roundabout	466009	347477
NCc000035206253	Warren Hill	A6097 Ollerton Road Warren Hill North of Oxtun	462472	353833
NCC000030306053	Warren Hill	A614 Old Rufford Road North of Blidworth Lane	460743	353316
NCC000030306256	White Post	A614 Old Rufford Road Farnsfield south of White Post	462728	356506
NCC000030306359	Mickledale Lane	A614 Ollerton Road Bilsthorpe North of A617	463350	359592
NCC000030306363	Deerdale Lane / Ollerton Roundabout	A614 Old Rufford Road north of Primrose Hill Farm	463888	363423

**Figure 1 Location of the Count Used to Calculate the Annualisation Factors**





2.3 Hourly flow data in each direction for the whole year was obtained with missing data approximated by averaging the flows from the previous and following weeks for each relevant day and hour. A two-way flow profile was then calculated by adding both directions flows together. From the yearly two-way flow data average hourly flows were calculated for weekdays and weekends with the result shown below in Figure 2 to Figure 8.

Figure 2 Average June 17 to May 18 Flow Profile for the Lowdham South A6097 for Weekdays and Weekends

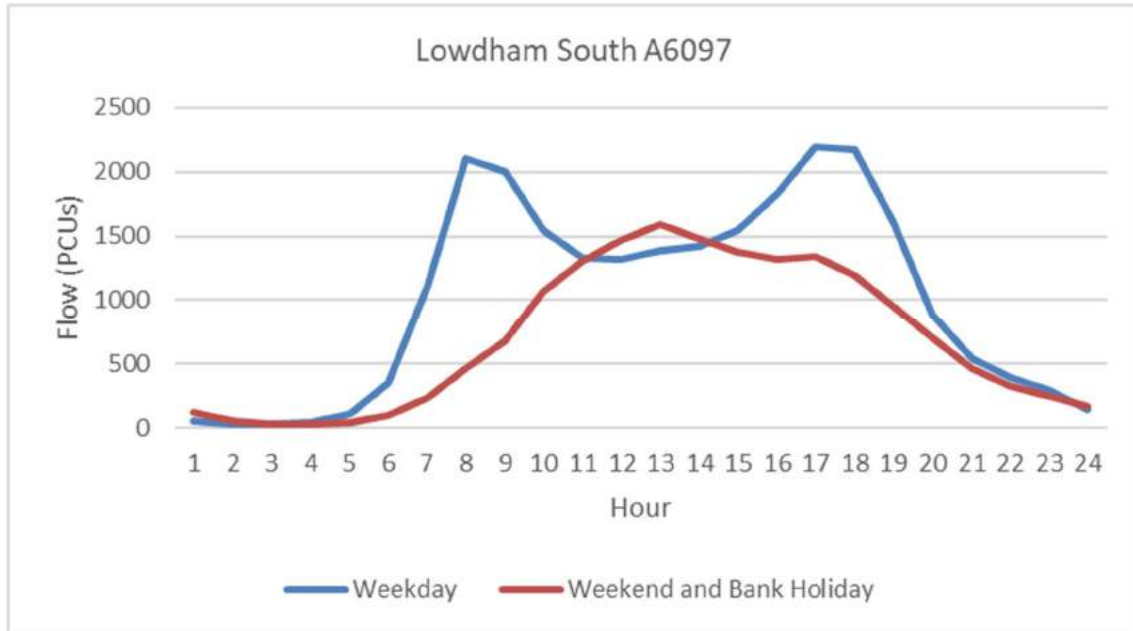


Figure 3 Average June 17 to May 18 Flow Profile for the Lowdham North A6097 for Weekdays and Weekends

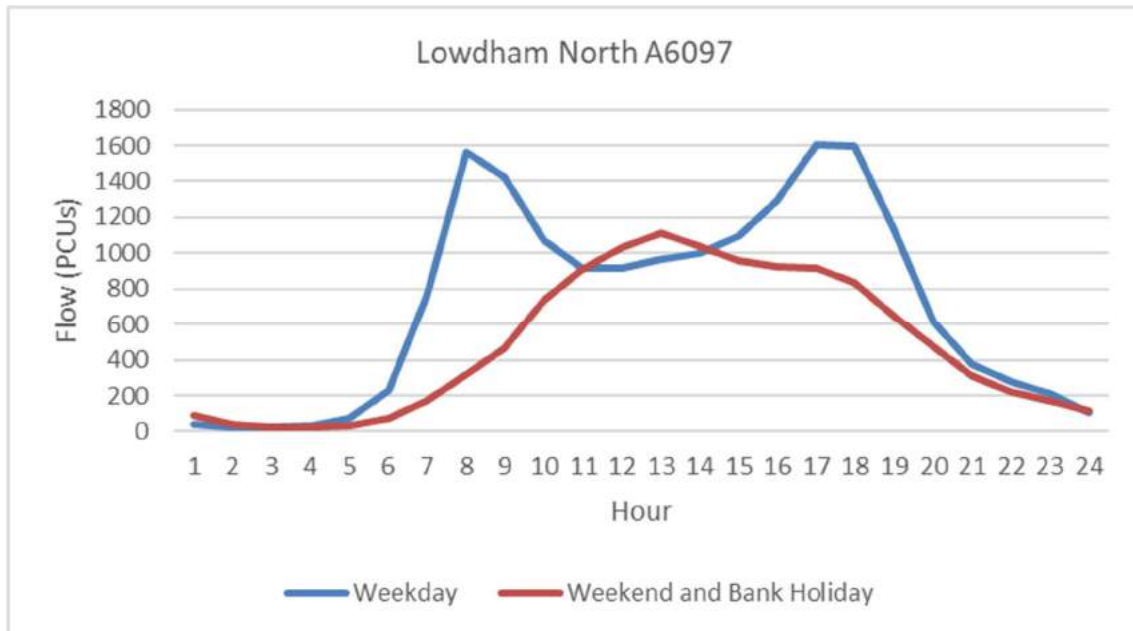


Figure 4 Average June 17 to May 18 Flow Profile for the Warren Hill A6097 for Weekdays and Weekends

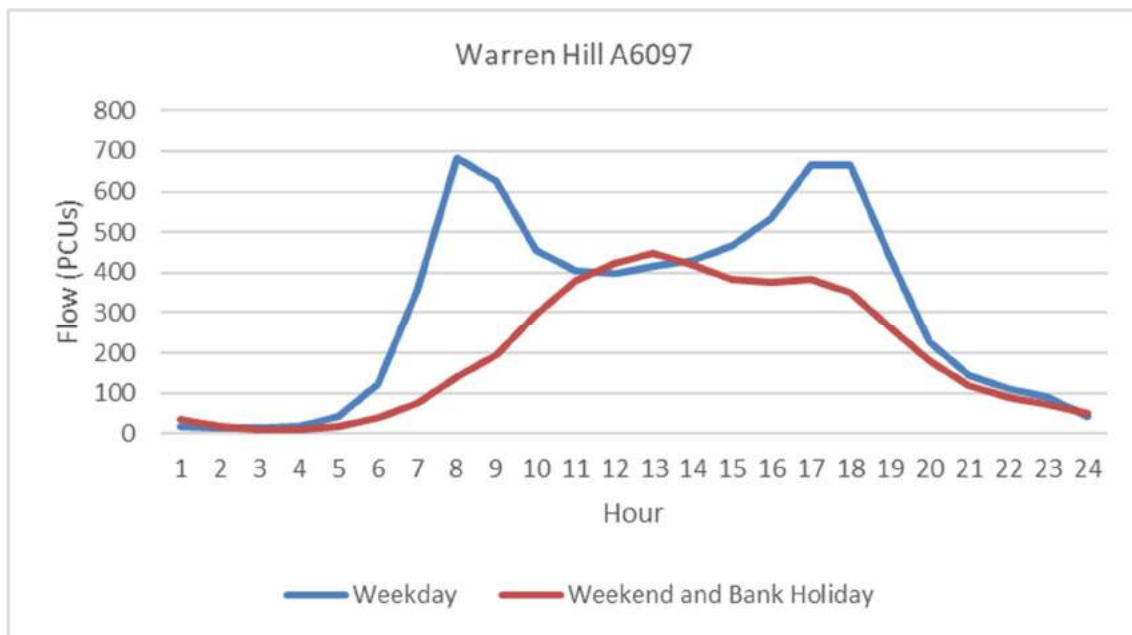


Figure 5 Average June 17 to May 18 Flow Profile for the Warren Hill A614 for Weekdays and Weekends

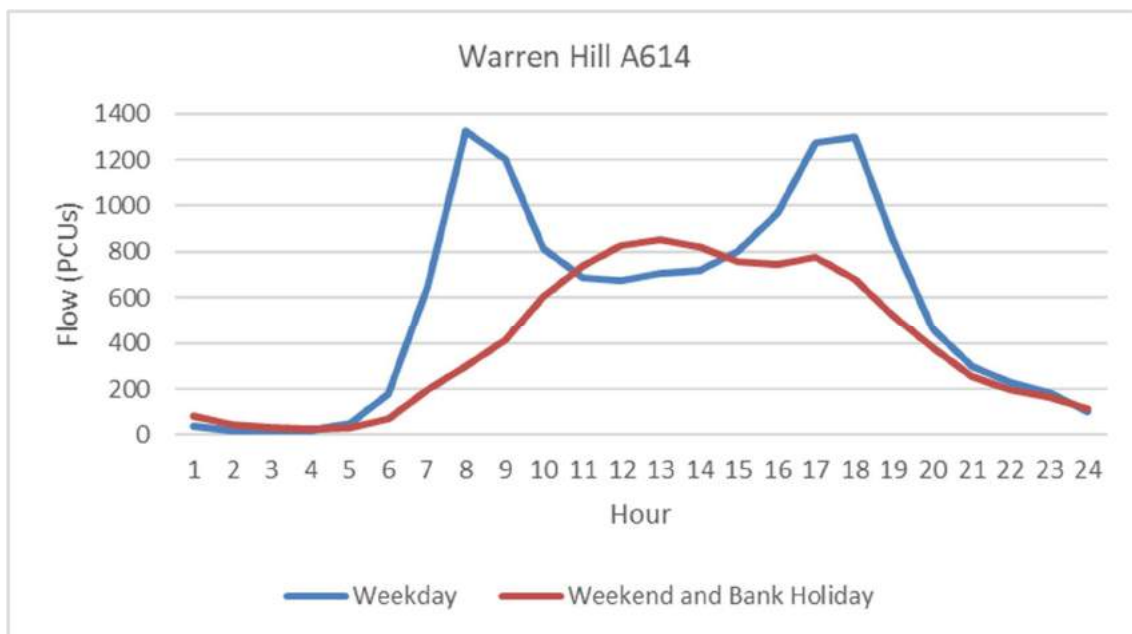


Figure 6 Average June 17 to May 18 Flow Profile for the White Post A614 for Weekdays and Weekends

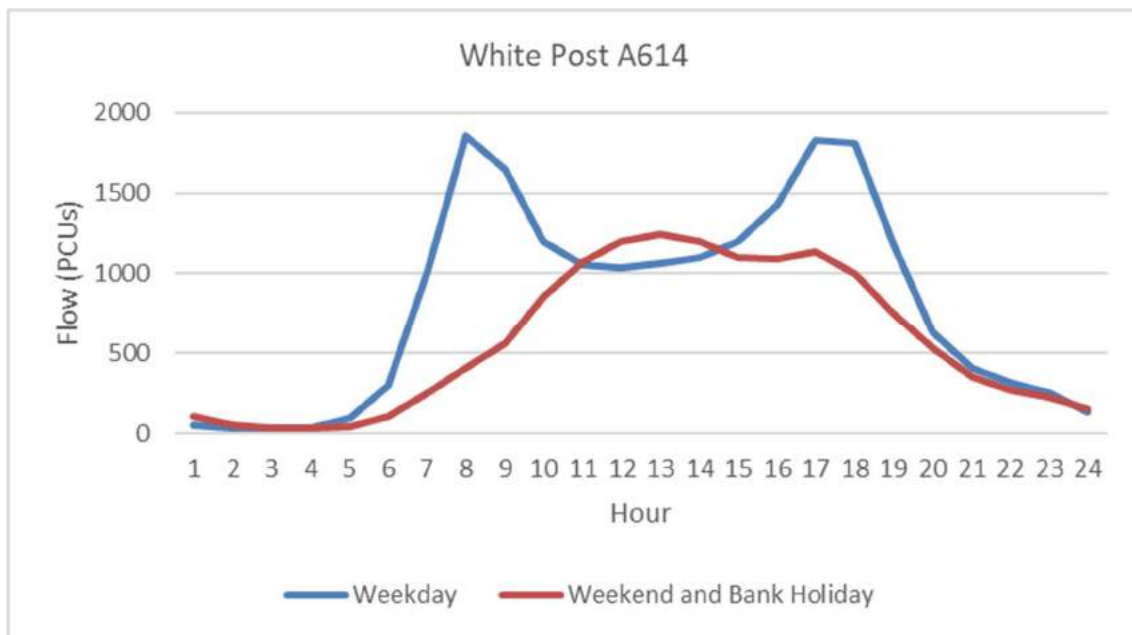


Figure 7 Average June 17 to May 18 Flow Profile for the Mickledale A614 for Weekdays and Weekends

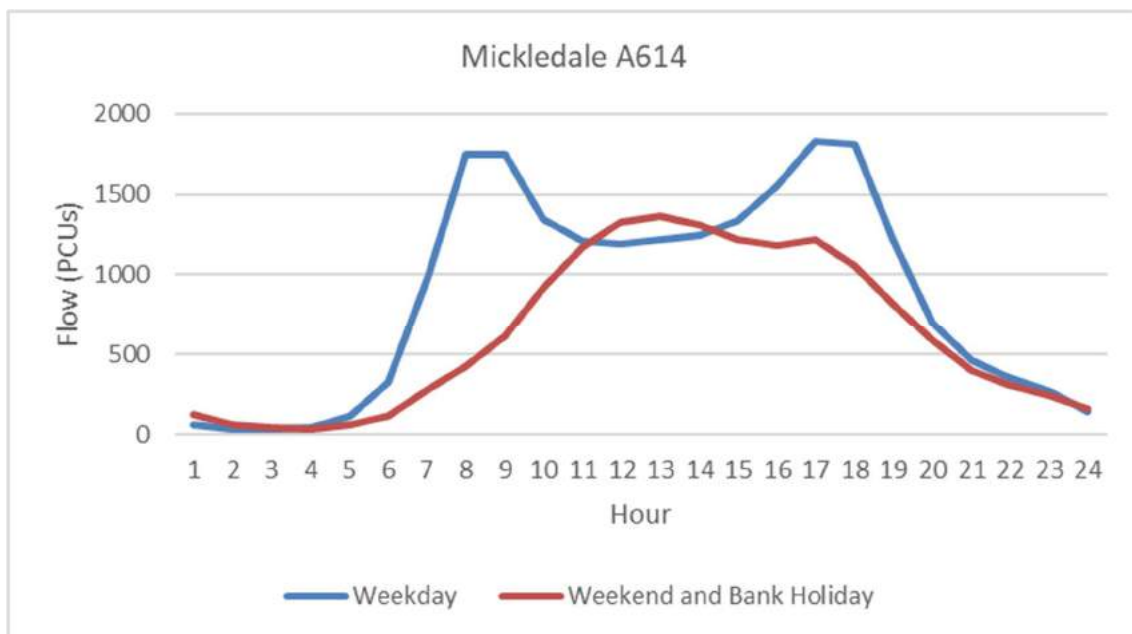
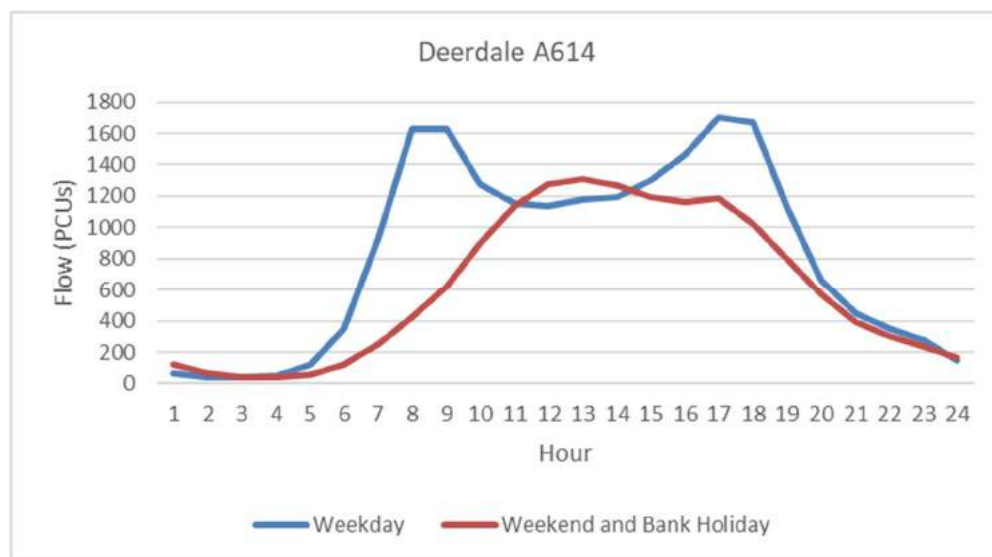


Figure 8 Average June 17 to May 18 Flow Profile for the Deer Dale A614 for Weekdays and Weekends



- 2.4 In the year June 2017 to May 2018 there were 253 weekdays, 104 weekend days and 8 bank holidays. For the purposes of the Annualisation calculations weekend days and bank holidays were classified together.
- 2.5 From the annual two-way flow data, average hourly flows by time of day were calculated with the results shown below in Table 2 and Table 3. As the weekend flow profile does not follow the same pattern as the weekday flow profile the average flow on a weekend day between the hours of 07:00 – 19:00 is assumed to be comparable to an average weekday flow between the hours 10:00 – 16:00. Weekday and Weekend OP average flows (19:00 – 07:00) are assumed to be directly comparable.

Table 2. Weekday Annual Average Hourly Flows by Time Period

Count	Criteria	Time Period									
		AM1 07:00 - 08:00	AM2 08:00 - 09:00	AM3 09:00 - 10:00	IP 10:00 - 16:00	PM1 16:00 - 17:00	PM2 17:00 - 18:00	PM3 18:00 - 19:00	EV 19:00 - 22:00	ON 22:00 - 07:00	OP 19:00 - 07:00
All	Total Time (hr)	253	253	253	1518	253	253	253	759	2277	3036
000030006745	Average Flow (PCU/hr)	2102	2006	1545	1472	2196	2176	1618	610	243	335
000030806547	Average Flow (PCU/hr)	1562	1425	1073	1033	1607	1593	1128	422	167	231
000035206253	Average Flow (PCU/hr)	685	624	454	441	666	665	439	162	80	100
000030306053	Average Flow (PCU/hr)	1326	1203	813	760	1275	1297	853	329	140	188
000030306256	Average Flow (PCU/hr)	1853	1642	1198	1148	1824	1810	1194	456	218	277
000030306359	Average Flow (PCU/hr)	1744	1742	1344	1292	1829	1809	1221	507	225	295
000030306363	Average Flow (PCU/hr)	1631	1631	1274	1239	1706	1672	1134	489	225	291

**Table 3. Weekend and Bank Holiday Average Hourly Flows by Time Period**

Count	Criteria	Time Period		
		All	IP	OP
		00:00 - 24:00	07:00 – 19:00	19:00 – 07:00
All	Total Time (hr)	2688	1344	1344
000030006745	Average Flow (PCU/hr)	700	1187	213
000030806547	Average Flow (PCU/hr)	484	824	145
000035206253	Average Flow (PCU/hr)	199	338	60
000030306053	Average Flow (PCU/hr)	401	669	133
000030306256	Average Flow (PCU/hr)	576	969	184
000030306359	Average Flow (PCU/hr)	628	1053	203
000030306363	Average Flow (PCU/hr)	611	1025	197

2.6 Using the data in Table 2 and Table 3 annual average AM (weekday), IP (weekday and weekend), PM (weekday) and OP (weekday and weekend) hourly flows were calculated with the values shown below in Table 4.

2.7 The AM and PM peak hour for the A614 Major Road Network Improvement Scheme is 0730-0830 and 1630-1730 respectively. Details of how these were identified can be found in the Traffic and Economic Assessment Report. The C2 traffic data is not available in a quarter or half hourly portions, as such the hourly data has been used. To closer represent the modelled peak hours, the AM Peak Period is calculated as the average of the AM1 and AM2 hourly flows, and the PM Peak Period is calculated as an average of the PM1 and PM2 hourly flows.

**Table 4. Average Annual Hourly Flows by Time Period**

Count	AM (PCU/hr)	IP (PCU/hr)	PM (PCU/hr)	OP (PCU/hr)
000030006745	2054	1329	2186	274
000030806547	1494	929	1600	188
000035206253	654	390	666	80
000030306053	1265	715	1286	160
000030306256	1747	1058	1817	231
000030306359	1743	1172	1819	249
000030306363	1631	1132	1689	244

2.8 Below, in Figure 10 to Figure 15, the hourly two-way flows have been plotted in ascending order (the blue line) with the area under the blue line representing the total number of trips recorded in 2019 at the count location. The red blocks have been calibrated in such a way as to approximate the number of observed trips to an acceptable level where the sum of the area of all the blocks is approximately equal to the total number of observed trips. Furthermore, the individual blocks must accurately represent the number of trips in the specific range of hours that they cover. A summary of this is shown in Table 5 to Table 11.

Figure 9 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Lowdham South

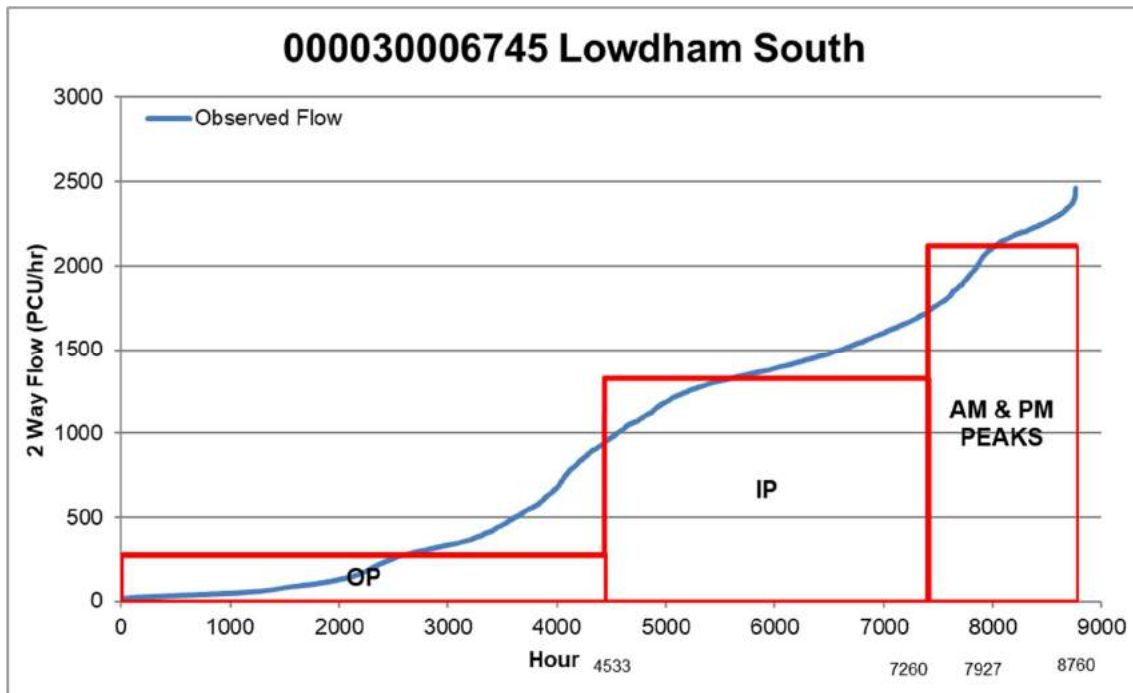


Figure 10 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Lowdham North

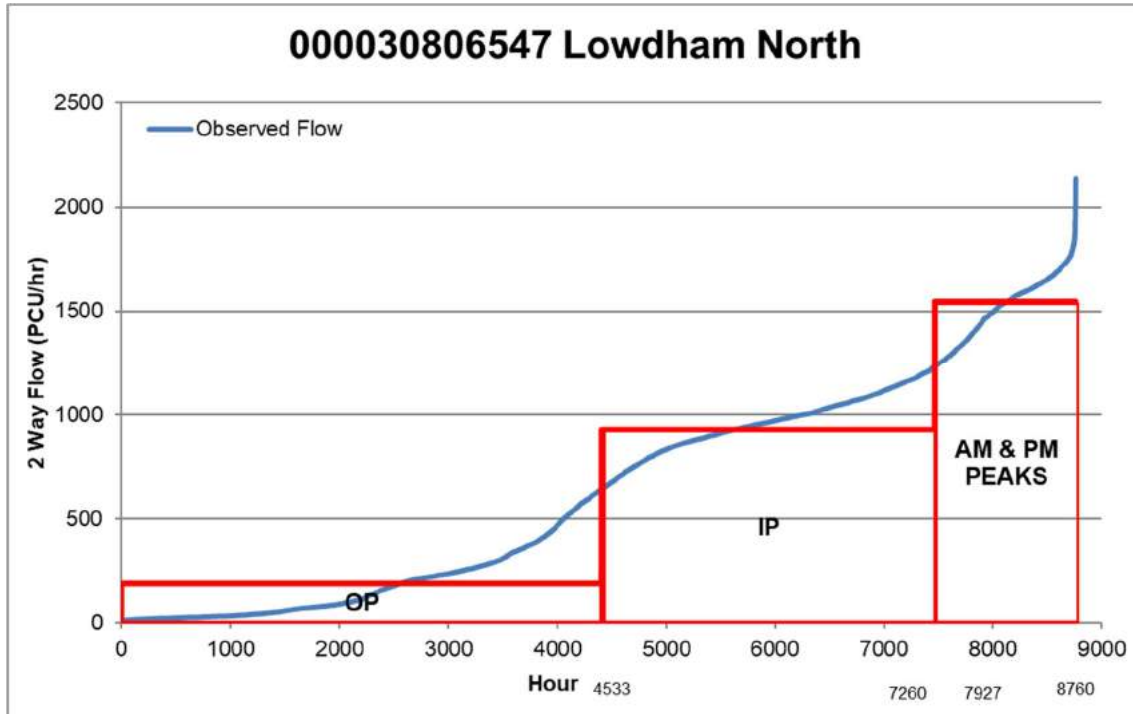


Figure 11 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Warren Hill A6097

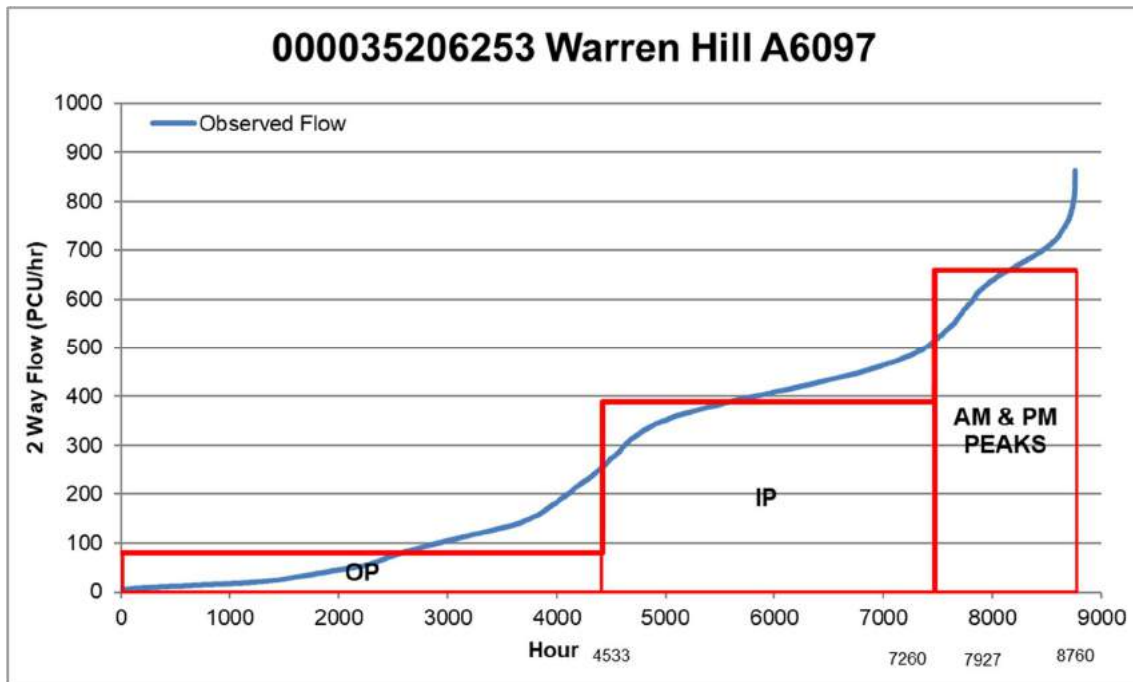


Figure 12 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Warren Hill A614

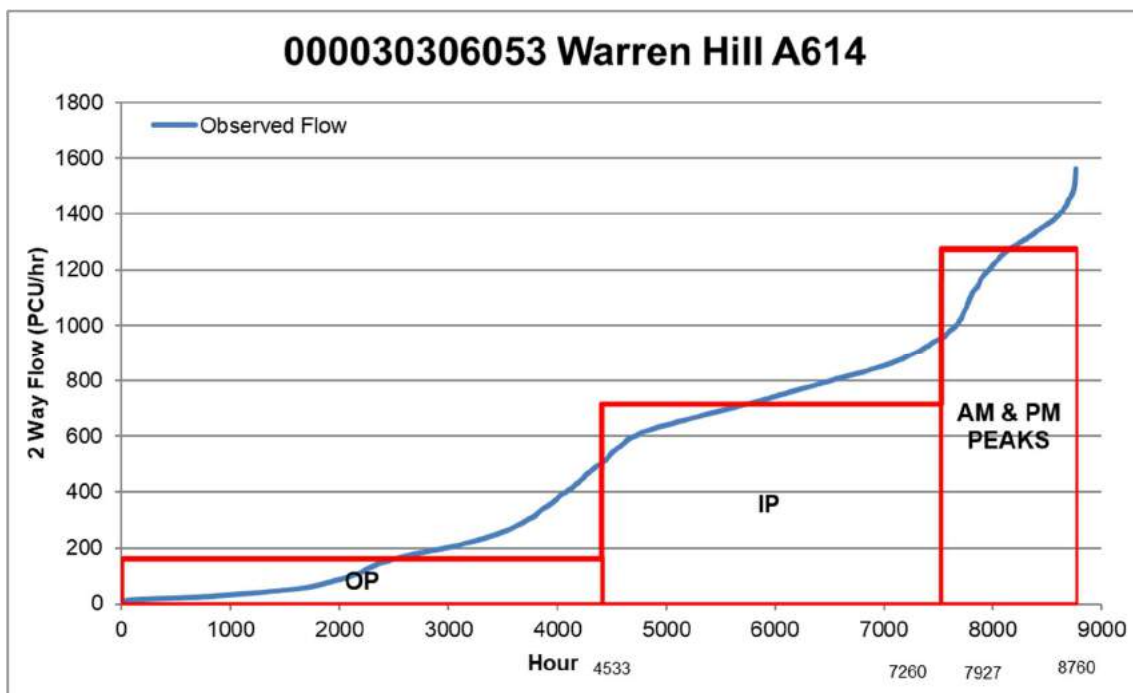


Figure 13 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows White Post A614

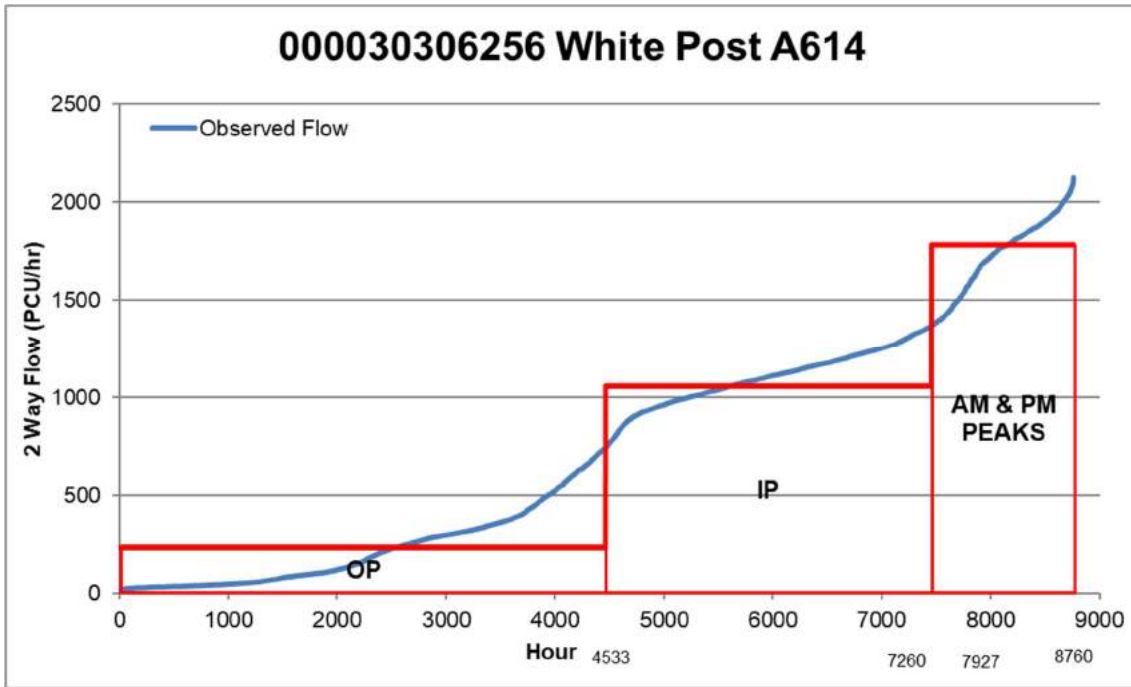


Figure 14 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Mickledale A614

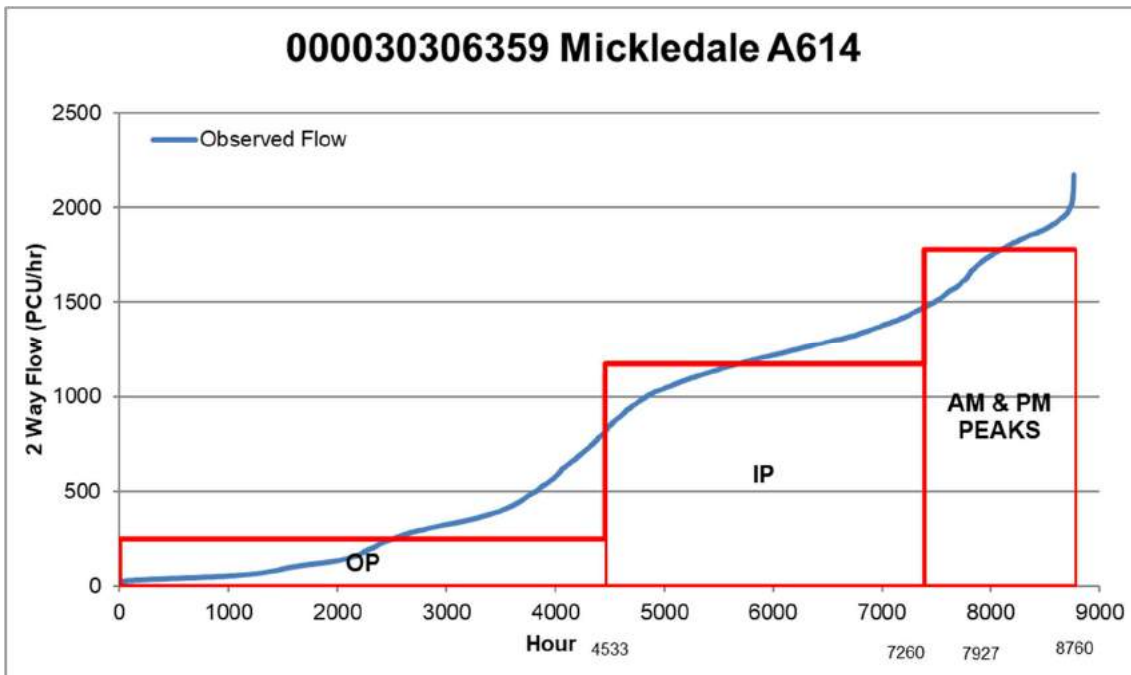




Figure 15 All 2019 Observed Hourly Flows Plotted in Ascending Order along with Approximated Flows Deer Dale A614

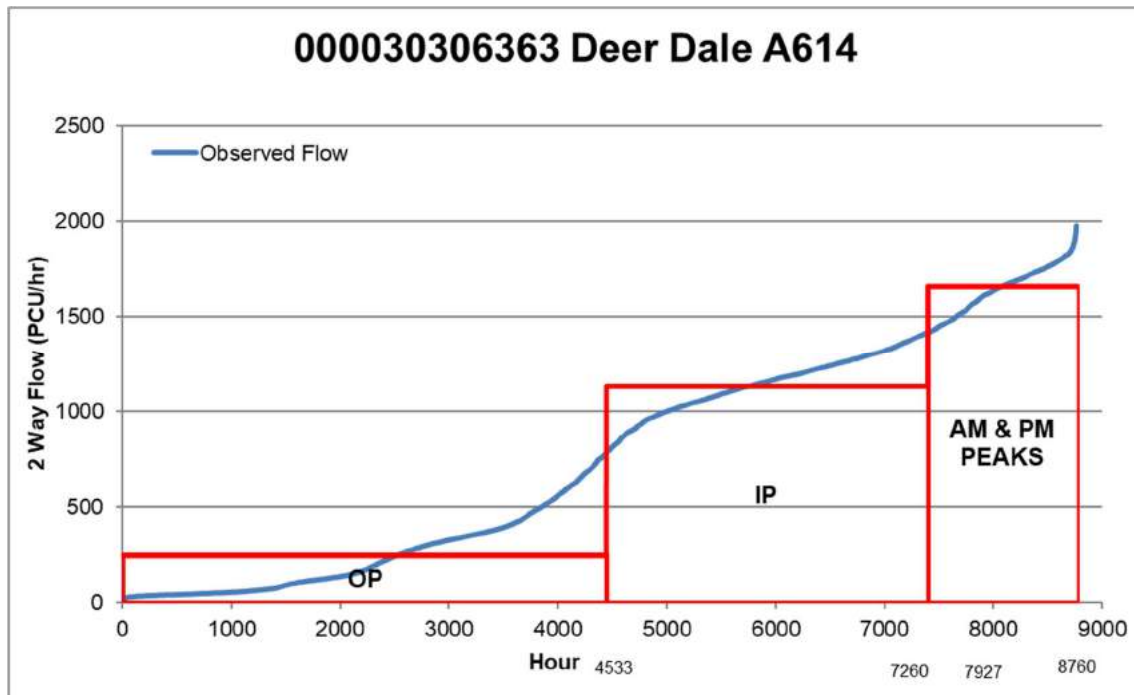


Table 5. Summary of Annualisation Approximation vs Observed Data Lowdham South

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	2,120	7,406	8,760	2,872,309	2,828,975	1.532%
IP	1,329	4,437	7,405	3,947,062	4,063,933	-2.876%
OP	274	0	4,436	1,214,942	1,185,209	2.509%
Total				8,034,313	8,078,117	-0.542%

Table 6 Summary of Annualisation Approximation vs Observed Data Lowdham North

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	1,547	7,465	8,760	2,004,505	1,966,609	1.927%
IP	929	4,405	7,464	2,841,228	2,927,303	-2.940%
OP	188	0	4,404	827,806	799,725	3.511%
Total				5,673,539	5,693,637	-0.353%

Table 7 Summary of Annualisation Approximation vs Observed Data Warren Hill A6097

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	660	7,470	8,760	852,074	835,787	1.949%
IP	390	4,422	7,469	1,187,293	1,225,856	-3.146%
OP	80	0	4,421	355,078	341,706	3.913%
			Total	2,394,445	2,403,350	-0.371%

Table 8 Summary of Annualisation Approximation vs Observed Data Warren Hill A614

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	1,275	7,527	8,760	1,573,782	1,528,427	2.967%
IP	715	4,408	7,526	2,229,405	2,311,374	-3.546%
OP	160	0	4,407	706,901	674,546	4.797%
			Total	4,510,087	4,514,347	-0.094%

Table 9 Summary of Annualisation Approximation vs Observed Data White Post A614

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	1,782	7,458	8,760	2,322,231	2,254,672	2.996%
IP	1,058	4,465	7,457	3,168,088	3,288,408	-3.659%
OP	231	0	4,464	1,029,821	1,000,075	2.974%
			Total	6,520,139	6,543,155	-0.352%

Table 10 Summary of Annualisation Approximation vs Observed Data Mickledale A614

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	1,781	7,387	8,760	2,447,228	2,401,573	1.901%
IP	1,172	4,457	7,386	3,434,555	3,496,835	-1.781%
OP	249	0	4,456	1,111,483	1,098,931	1.142%
			Total	6,993,266	6,997,339	-0.058%

Table 11 Summary of Annualisation Approximation vs Observed Data Deerdale A614

Time Period	Flow (PCU/hr)	Hours		Area (PCUs)		Error (%)
		Start	End	Observed	Block Approximation	
Peak	1,660	7,398	8,760	2,262,744	2,240,749	0.982%
IP	1,132	4,446	7,397	3,340,546	3,379,014	-1.138%
OP	244	0	4,445	1,086,116	1,076,351	0.907%
			Total	6,689,406	6,696,114	-0.100%

2.9 The final Annualisation factors were calculated by finding the difference between the start and end hours for each block with the final values recorded below in Table 12 and Table 13. AM and PM factors were calculated as a proportion of the average using the following formulas. The average factor is an overall Annualisation factor for the scheme, which has been calculated using flow weighted hours of the individual factors.

$$AM\ Factor = \frac{AM\ Average\ Flow}{AM\ Average\ Flow + PM\ Average\ Flow} * Peak\ Hours$$

$$PM\ Factor = \frac{PM\ Average\ Flow}{AM\ Average\ Flow + PM\ Average\ Flow} * Peak\ Hours$$

Table 12. Final Annualisation Factors (Annual)

Count	AM	IP	PM	OP	Total
000030006745	656	2969	699	4436	8760
000030806547	626	3060	670	4404	8760
000035206253	640	3048	651	4421	8760
000030306053	612	3119	622	4407	8760
000030306256	639	2993	664	4464	8760
000030306359	672	2930	702	4456	8760
000030306363	670	2952	693	4445	8760
Average	648	2997	677	4438	8760

Table 13. Final Annualisation Factors (Daily)

Count	AM	IP	PM	OP	Total
000030006745	1.80	8.13	1.92	12.15	24.00
000030806547	1.72	8.38	1.84	12.07	24.00
000035206253	1.75	8.35	1.78	12.11	24.00
000030306053	1.68	8.55	1.70	12.07	24.00
000030306256	1.75	8.20	1.82	12.23	24.00
000030306359	1.84	8.03	1.92	12.21	24.00
000030306363	1.84	8.09	1.90	12.18	24.00
Average	1.78	8.21	1.85	12.16	24.00

2.10 The 24 hour AADT to 18 hour AAWT factor for each of the counts is found in Table 14.

**Table 14 AAWT Factors**

Count	AAWT Flow Factor
000030006745	1.08
000030806547	1.09
000035206253	1.09
000030306053	1.07
000030306256	1.07
000030306359	1.06
000030306363	1.05

# Appendix DD – Delays During Construction

Project:	<b>A614</b>	Job No:	
Subject:	<b>Impact of Construction – Economic Assessment</b>		
Prepared by:	<b>Jonathon Bailey</b>	Date:	<b>27/11/2020</b>
Checked by:	<b>Adam Hall</b>	Date:	<b>16/12/20</b>
Lead Verifier:	<b>David Elliott</b>	Date:	<b>18/12/20</b>
Approved by:	<b>Adam Hall</b>	Date:	<b>18/12/20</b>

# 1. Introduction

- 1.1 Nottinghamshire County Council (NCC) is promoting junction improvements at six key junction locations along the A614 – A6097 corridor as a single improvement package (“the Scheme”). The junction locations are presented in Figure 1. AECOM is working on behalf of NCC to undertake an economic assessment of the A614 – A6097 MRN Improvement package.
- 1.1 This Technical Note (TN) outlines the economic impact the delays during construction has on each of the junction within the Scheme. The analysis was carried out by modelling the key traffic management (TM) phases at each of the Scheme junctions during the construction works.
- 1.2 The benefits (incl. disbenefits) incurred by the delays during construction were assessed using Transport User Benefit Appraisal (TUBA) software. This is to estimate the monetised impacts of the potential delays that is forecast to occur at each junction during the construction period. These results will be incorporated into the final economic assessment of each junction to produce the final economic assessment of the Scheme.

**Figure 1 - Junction Locations**



## 2. Traffic Management During Construction for each Junction

2.1 VIA East Midlands, NCC's delivery partner provided the traffic management phase descriptions and drawings, which are in Appendix A. The White Post and Warren Hill junctions have not had delay during construction economics assessed due to the modest package of works. The proposed phasing of the construction works at each junction identified by VIA EM is as follows:

### Ollerton

Phase	Duration	Traffic Management
1	1 Week	Reduced speeds (40mph) on all arms to the roundabout. Implementation of 4-way lights overnight to remove islands. Full closure of Mansfield and Newark Road.
2	1 Week	Reduced speeds (40mph) on all arms to the roundabout. Implementation of 4-way lights overnight to remove islands. Full closure of Mansfield and Newark Road.
3	1 Week	Reduced speeds (40mph) on all arms to the roundabout. Implementation of 4-way lights overnight to remove islands. Full closure of Mansfield and Newark Road.
4	20 Months	Narrow lanes and reduced speeds (30mph) on approach arms to roundabout.
5	4 Weeks	Overnight full closure of roundabout.
Total	~87 Weeks	

### Mickledale

Phase	Duration	Traffic Management
1	3 Weeks	Implementation of 3-way lights with Mickledale Rd Closed for removal of refuges.
2	16 Weeks	Narrow Lanes with Mickledale Road Closed working on West side (outside Limes café)
3	20 Weeks	Narrow Lanes with Mickledale Rd Closed working on East side.
4	2 Weeks	Full carriageway closure
Total	41 Weeks	

## Lowdham

Phase	Duration	Traffic Management
1	20 Weeks	Individual lane closure along A6097. Narrow lanes along A612.
2	8 Weeks	Individual lane closures. 4 Way traffic signals surround Lowdham roundabout
3	8 Weeks	Individual lane closures. 4 Way traffic signals surround Lowdham roundabout
Total	36 Weeks	

## Kirk Hill

Phase	Duration	Traffic Management
1	30 Weeks	Lane closures, allowing 2-way traffic on the A6097 with East Bridgford Road Closed in both directions.
2	7 Weeks	2-way lights on the A6097 with East Bridgford Road Closed in both
3	1 Weeks	Full lane closures on the A6097 and East Bridgford Road.
Total	38 Weeks	

# 3. Traffic Management Assessment Methodology

3.1 In order to appropriately assess the economic impact, the delays during construction it was agreed with the client to adopt a proportionate assessment by only modelling the longest construction phases of each junction unless stated. The following construction traffic models were provided by VIA East Midlands:

- Ollerton: Phase 4 – 20 Months - (ARCADY)
- Mickledale: Phase 3 – 20 Weeks – (PICADY)
- Lowdham: Phase 1 – 20 Weeks – (ARCADY)
- Lowdham: Phase 2 & 3 – 16 Weeks – (LinSig)
- Kirk Hill: Phase 1 – 30 Weeks – (LinSig)

3.2 The traffic impacts of the chosen phased construction activities were represented in Junction9 and LinSig software. The outputs of these models have been compared to the 2023 'Do-Minimum' models. The changes between the models have been analysed and taken forward into the economic assessment carried out in TUBA. The construction model outputs are displayed in Appendix B.



- 3.3 It is noted that because the A614 corridor does not benefit from a strategic model, suitable to support detailed appraisal, the use of isolated junction models is the most appropriate approach to represent the impacts. However, the approach is limited in its assumption that all trips chose to continue using the junctions during the construction rather than rerouting to quicker (lower cost) routes. In this case the methodology adopted may overestimate the Scheme disbenefits during construction. In addition, in the event of temporary road closures, the approach is not capable of representing enforced rerouting impacts (higher cost). In this case the Scheme may underestimate the Scheme disbenefits during construction.

## 4. Economic Appraisal Methodology

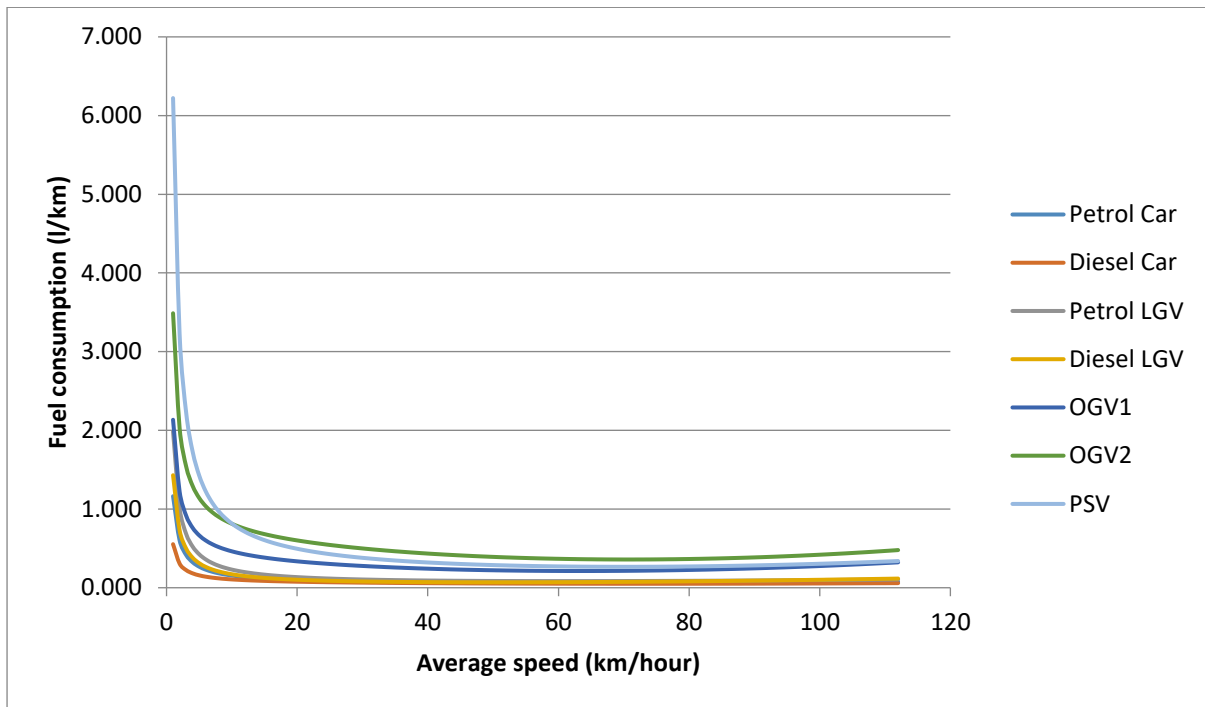
### TUBA Assessment

- 4.1 The economic appraisal of delays during construction was based upon results from the TUBA (v1.9.14) economic appraisal software. The Economics Parameters file used was the most up to date file available - July 2020 release (v1.13.1).
- 4.2 The TUBA input files used in the assessment are presented in Appendix C. The TUBA output files are presented in Appendix D.
- 4.3 The TUBA software was used to calculate the Road User benefits for a single year, 2023.
- 4.4 Forecast assignments were run for the four modelled time periods:
- Weekday AM Peak – an AM peak hour in the period 08:00 – 09:00;
  - Weekday Inter-Peak – an average hour in the period 10:00 – 16:00;
  - Weekday PM Peak – an PM peak hour in the period 17:00 – 18:00; and
  - Weekday Off Peak – an average hour between 19:00 -07:00.
- 4.5 TUBA bases its economic results on annual evaluations. The traffic model is based on hourly flows. Annualisation factors are used to convert modelled hourly traffic conditions (flows, delays, and journey times) into yearly travel benefits. The full process used to derive the Annualisation factors used in the delays during Construction analysis is detailed in the Traffic and Economic Appraisal Report (TEAR), however, this is briefly outlined in Section 5.

### Vehicle Operating Costs

- 4.6 VOC savings (fuel and non-fuel) are calculated as part of the assessment of Transport Economic Efficiency benefits and costs using the total travel distance. VOCs are directly related to fuel consumption and change in speeds between the Do-Minimum and Do-Something options.
- 4.7 As the junctions were modelled in isolation, only a nominal length was modelled on each approach to the junction.
- 4.8 When considering changes in speed at an isolated junction, the average journey speed through a junction is likely to be low, particularly as both the 'Do-Minimum' and 'Do-Something' layouts are both traffic signal junctions. A 'Do-Something' option to improve an isolated junction is therefore more likely to have a proportionally greater effect when considering only the trips that pass through the junction, rather than when considering the change in the overall travel time of a full trip length. For instance, over a short length (~500m) the impact of a small Scheme junction improvement may change the average speed through the junction from 15kph to 20kph (33% increase in speed), however the impact of the same junction improvement may change the average speed of a 20 mile journey from 40kph to 42kph (5% increase in journey speed).
- 4.9 Based upon the fuel consumption curve taken from the TAG Databook, Worksheet A1.3.8, as shown in Figure 2, it can be seen that the fuel consumption rises steeply at low speeds.

**Figure 2: Fuel Consumption Curve**



- 4.10 This steep change in fuel efficiency at low speeds is likely to over exaggerate the VOC benefits of the junctions within the Scheme, if partial trip lengths were to be used.
- 4.11 Because the full trip-length of journeys were not represented, in the TEE analysis, it was therefore decided that the VOC benefits would be excluded from the economic appraisal. As the Scheme is predicted to improve journey times, and therefore make vehicle operating costs more efficient, it is considered that excluding the VOC costs will underestimate the economic benefits of the Schemes.

Greenhouse Gases and Indirect Taxes

- 4.12 Because greenhouse gases and indirect tax costs are a direct product of the change in VOCs, for the same reasons as those described in the previous paragraphs, these costs will not form part of the appraisal process and will be omitted from the Analysis of Monetised Costs and Benefits (AMCB) Tables for the individual junction. This approach will under-estimate the benefits of the Scheme.

# 5. Economic Appraisal

## Introduction

5.1 Within the economic assessment of the benefits (incl. disbenefits) of the delays during construction no Scheme cost have been considered within the TUBA runs. Therefore, the benefit to cost ratio (BCR) will be zero. The analysis displays the present value benefits (PVB) which will be added to the wider economic assessment of the 'Do-Minimum' to 'Do-Something' scenarios for each junction.

## Annualisation

5.2 TUBA bases its economic results on yearly data. The traffic model is based on hourly flows. Annualisation Factors are used to convert modelled hourly traffic conditions (flows, delays, and journey times) into yearly travel benefits.

5.3 The time periods used in the assessment is to reflect:

- AM – 08:00 to 09:00hrs peak hour;
- Inter-peak – an average hour between 10:00 and 16:00;
- PM – 17:00 to 18:00hrs peak hour; and
- OP – an average hour between 19:00 and 07:00.

5.4 In TUBA a distinction is made between time periods. TUBA time periods have standard definitions supplied in the economics file. They are;

- AM Peak: Weekday 0700-1000;
- Inter-Peak: Weekday 1000-1600;
- PM Peak: Weekday 1600-1900;
- Off-Peak (OP): Weekday 1900-0700;

5.5 The following annualisation factors been used to replicate the potential benefits to be accrued across a full year (8,760 hours).

**Table 5-1: Annualisation**

Time period	Total hours
AM	648
IP	2,997
PM	677
OP	4,438
<b>TOTAL</b>	<b>8,760</b>

## 6. Economic Results

### Transport Economic Efficiency (TEE) Table

- 6.1 The purpose of the Transport Economic Efficiency (TEE) table is to summarise and present transport user benefits. It shows the net user benefits by group (consumers and businesses, including transport operators), by mode of transport and by impact type. Due to the omission of selected benefits due to the nature of the assessment, the 'Travel Time' has been primary driver for the tabulated results.
- 6.2 The single year TUBA outputs from each of the junctions undergoing construction activity were factored by the modelled construction phase length as highlighted in 3.1. The monetary travel costs to Road Users during the construction phase have been compared with the DM 2023 case which excludes the Scheme improvements.
- 6.3 The TEE table, (Table 6-1), presents the combined net user benefits from all the junction construction phases, disaggregated by group and impact. The Travel Time impacts are expressed in monetary terms and show the change brought about by the construction phases relative to the Do Minimum case. Within the TEE table costs appear as negative numbers.
- 6.4 The results presented in the TEE table below show an over Present Value of Transport Economic Efficiency Benefits of -£15.8M with over half of the outputs being contributed from 'Other' users.

**Table 6-1 Transport Economic Efficiency (TEE) Table Outputs**

<b>Impact</b>	<b>Total</b>	<b>Personal</b>	<b>Freight</b>
Consumer- Commuting – Travel Time	-3,665		
Consumer - Commuting – VOC		Not Assessed	
<b>NET CONSUMER IMPACT - COMMUTING</b>	<b>-3,665</b>		
Consumer - Other – Travel Time	-7,788		
Consumer - Other – VOC		Not Assessed	
<b>NET CONSUMER IMPACT - OTHER</b>	<b>-7,788</b>		
Business – Travel Time	-4,357	-704	-3,652
Business - VOC		Not Assessed	
Operating Costs	0		
Other Business – Developer contributions	0		
<b>NET BUSINESS IMPACT</b>	<b>-4,357</b>		
<b>PRESENT VALUE OF TRANSPORT ECONOMIC EFFICIENCY BENEFITS</b>	<b>-15,809</b>		

## Analysis of Monetised Cost and Benefits (AMCB)

- 6.5 Table 6-2 displays the AMCB of each junction and combined impact to the Scheme. The table displays both the full results directly from the single-year TUBA run and the discounted and factored benefits from the specific construction phase durations at the junctions. For the purpose of this assessment, the impact of objectives that are dependent on the change in fuel consumptions (Greenhouse Gases, VOCs and Indirect Tax Revenues) have been excluded from the assessment as discussed in Section 4.1 to 4.12
- 6.6 The overall economic impact of the construction work across the Scheme has been calculated to be -£15.809M. (discounted to a 2010 present value year at 2010 market prices).

**Table 6-2: Analysis of Monetised Cost and Benefits (AMCB)**

£'000s - 2010 Market Prices, discounted to a 2010 present value year

	Results output from TUBA - one year per junction				
	Ollerton	Mickledale	Lowdham	Kirkhill	Total
Greenhouse Gases	-8	15	-140	-3	-136
Economic Efficiency: Consumer Users (Commuting)	-524	26	-7,826	-619	-8,943
Economic Efficiency: Consumer Users (Other)	-758	76	-17,370	-2,153	-20,205
Economic Efficiency: Business Users and Providers	-524	24	-13,267	-42	-13,809
Wider Public Finances (Indirect Taxation Revenues)	35	-65	602	13	585
<b>Present Value of Benefits (PVB)</b>	<b>-1,779</b>	<b>76</b>	<b>-38,001</b>	<b>-2,804</b>	<b>-42,508</b>
Factoring results to applicable durations and discounted benefits (Greenhouse Gases, VOC)					
Number of weeks/months at each junction	20mo	20w	36w	30w	
	Results output from TUBA - per junction				
	Ollerton	Mickledale	Lowdham	Kirkhill	Total
Economic Efficiency: Consumer Users (Commuting)	-852	7	-2,468	-352	-3,665
Economic Efficiency: Consumer Users (Other)	-1,220	15	-5,339	-1,243	-7,788
Economic Efficiency: Business Users and Providers	-748	12	-3,601	-19	-4,357
<b>Present Value of Benefits (PVB)</b>	<b>-2,820</b>	<b>33</b>	<b>-11,409</b>	<b>-1,614</b>	<b>-15,809</b>

- 6.7 Mickledale from the table presents a positive benefit. During construction the minor arm of the 3-arm priority junction is closed, therefore, the junction acts as a free flowing carriageway with a speed restriction imposed. Due to the reduced flow and delay due to turning movements the junction presented a slight positive benefit during construction. It is noted that Mickledale Phase 2 and 3 are very similar with minor arm, Mickledale Road closed. So as not to overestimate the benefits accrued, recognising that the adopted methodology does not reflected the cost of enforced rerouting due to road closures, Stage 4 has not been included in the delays during construction analysis. This is considered a robust approach.
- 6.8 The large disbenefits at Lowdham predominately occurring in phases 2 and 3 (Four-stage temporary traffic signals). Given the large disbenefits, it is anticipated that the Lowdham delays during construction can be reduced with more detailed consideration of the traffic signal arrangement.

## 7. Conclusions

- 7.1 This Technical Note details the economic assessment of the delays during construction of each junction undergoing construction activities within the A614 – A6097 MRN Improvement Scheme.
- 7.2 The analysis of Road Users' delays during construction was carried out by representing the agreed construction phases for each of the junctions in either Junction9 or LinSig models. As not

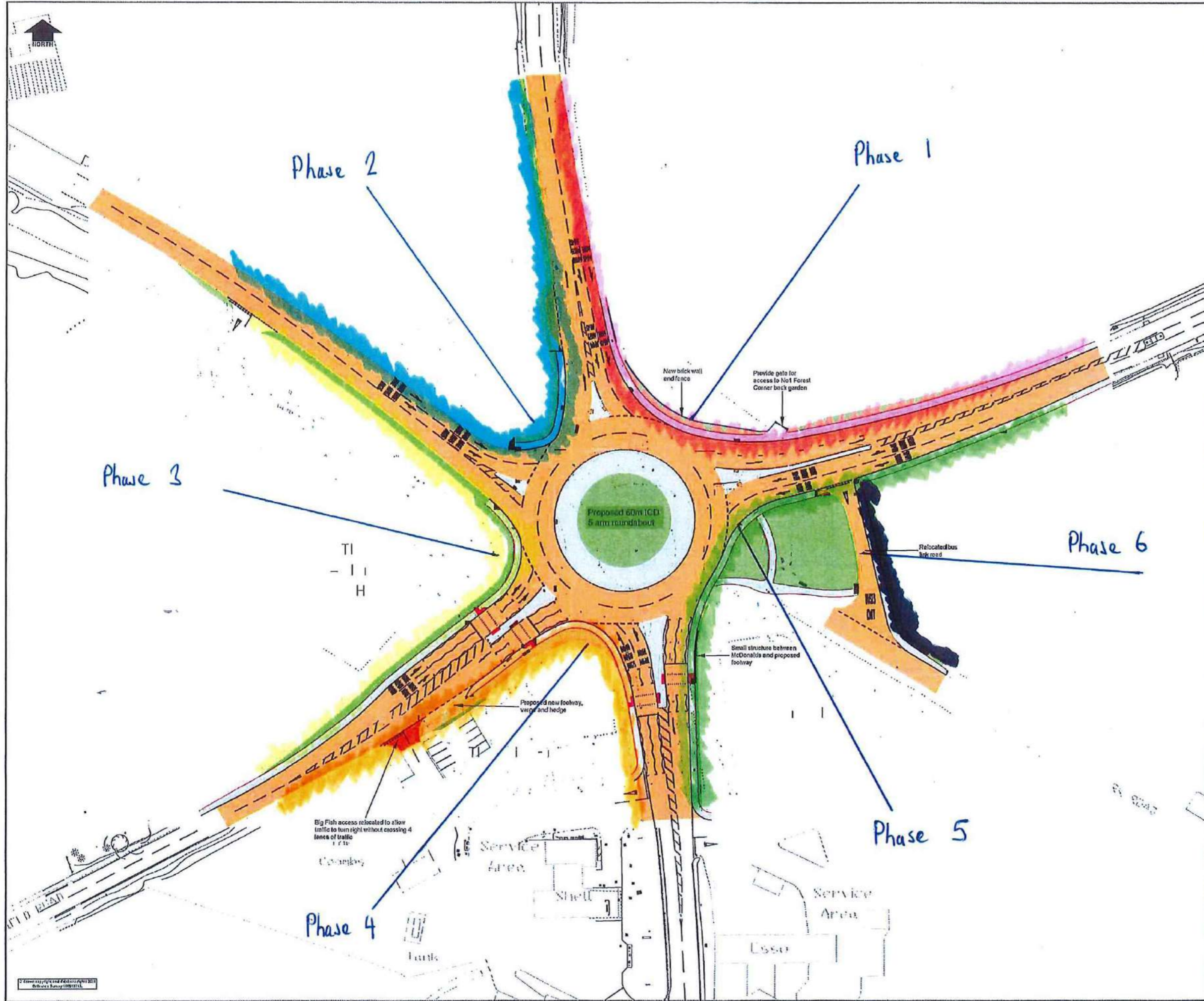
all construction phases were assessed, the value of benefits (incl. disbenefits) is subject to being underrepresented.

- 7.3 The economic appraisal of delays during construction was based upon results from the TUBA (v1.9.14) economic appraisal software.
- 7.4 The economic assessment of the construction works indicated that for the whole Scheme there will be a total forecast disbenefit of £15.809M.

# Appendix A – JUNCTION CONSTRUCTION PHASING

**Ollerton**





- NOTES**
1. This drawing shows the updated revised layout of the enlarged 60m ICD roundabout improvements.
  2. The lane arrangements are configured to suit the current and future traffic forecast (2033) requirements.
  3. The proposed lane destination markings are provided to suit the current and future peak flow and are suggested to complement the road signage to reduce the potential conflict associated with vehicles crossing over lanes.
  4. The layouts are subject to further road safety audits which will be commissioned following the detailed design stage.
  5. The revised layout has been produced using updated topographical survey information obtained June 2018.
  6. The precise extents of private land are subject to change which may be required as a result of the detailed design process. The extents of embankment/earth slopes are shown for indicative purposes and are based on the assumption that adjoining land does not significantly fluctuate in level. Where private land interfaces are restricted in respect of viable retaining features may be required at these locations. Further verification for the embankment interface will be determined once updated private land topographical survey information and detailed design information is available.
  7. A preliminary analysis has been undertaken to verify vertical design requirements, this has determined that the proposals could meet this design criteria if the speed limits on the approaches were altered to 30mph. Further verification in the effect of the vertical design on to adjoining land is to be determined during the detailed design process. Refer to feasibility report produced August 2018 by Via EIM Ltd. for further information on the proposals and the departures from standards required.
  - 8.

- KEY**
- Proposed Carriageway Areas
  - Proposed Footways/Hardstanding Areas
  - Proposed Embankment/Verges
  - Proposed Hedges

- 4 Months
- 2 Months
- 4 Months
- 4 Months
- 3 Months
- 3 Months

Rev.	Description	Drawn	Chk'd	Auth	Date
Final	A614/A6097 CORRIDOR IMPROVEMENTS OLLERTON ROUNDABOUT				
Draw	FOR INFO	Project: HW20949			
Drawn by	GENERAL ARRANGEMENT				
Scale	1:500 @A1	Drawn	AP	20.02.2019	
Drawn by		Drawn	AP	20.02.2019	
Drawn by	HW 20949/GEN/0001/003	Rev.	0		

In partnership with

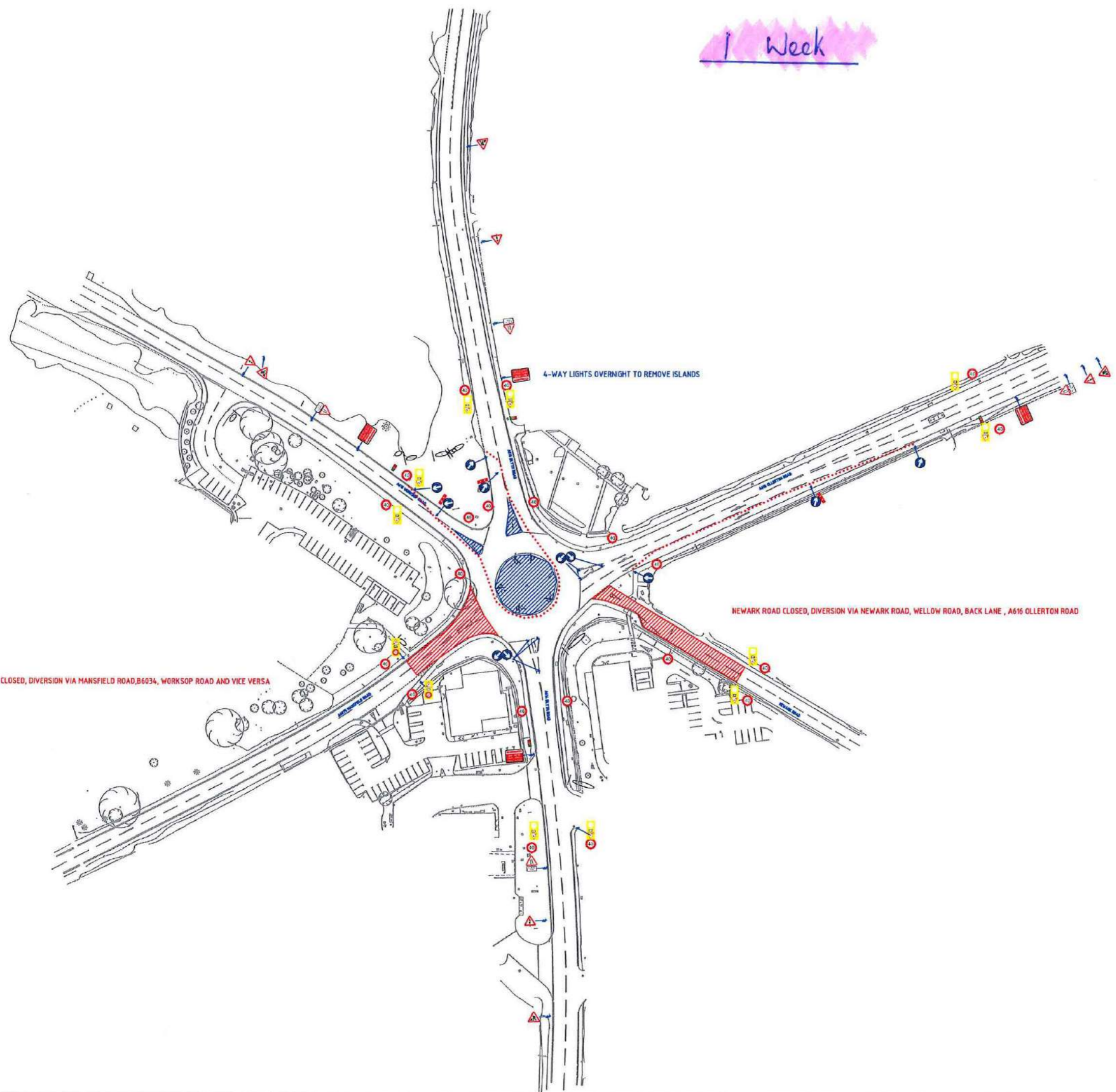



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1 Week

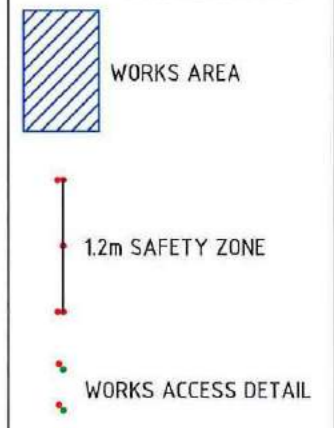


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**NOTES**

- DETAIL B** (B)
- Single Dual carriageway 40mph or less - 450mm traffic cones, spacing 1.0m.  
 Single Dual carriageway 50mph or more - 750mm traffic cones, spacing 1.0m.  
 Dual carriageway 40mph or less - 750mm traffic cones, spacing 1.5m, reduction 2m.
- Notes:**  
 1) During darkness, warning lights to BS EN 12352:2008 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) 45° apex signs 1.0m spacing @ intersections.  
 3) On motorways and M's, AP signs with red triangles, red circles will be required for both standard and reduction works.  
 4) Level signs and the flagging will be as shown.
- DETAIL C1**
- Single Dual carriageway 40mph or less - 450mm traffic cones.  
 Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**  
 1) During darkness, warning lights to BS EN 12352:2008 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) For reduction to Detail C1 see Table A1.3 (Appendix 1).
- DETAIL D** (D)
- Single Dual carriageway 40mph or less - 450mm traffic cones.  
 Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**  
 1) During darkness, warning lights to BS EN 12352:2008 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) Detail D applies only to reduction areas.

TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix
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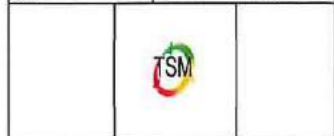
Drawing Number	Revision
OLLERTONRAB03	

Drawing Status  
FOR APPROVAL

Project Title  
VIA EM  
OLLERTON RAB  
TRAFFIC MANAGEMENT

Drawing Title  
4-WAY LIGHTS  
LAYOUT 3

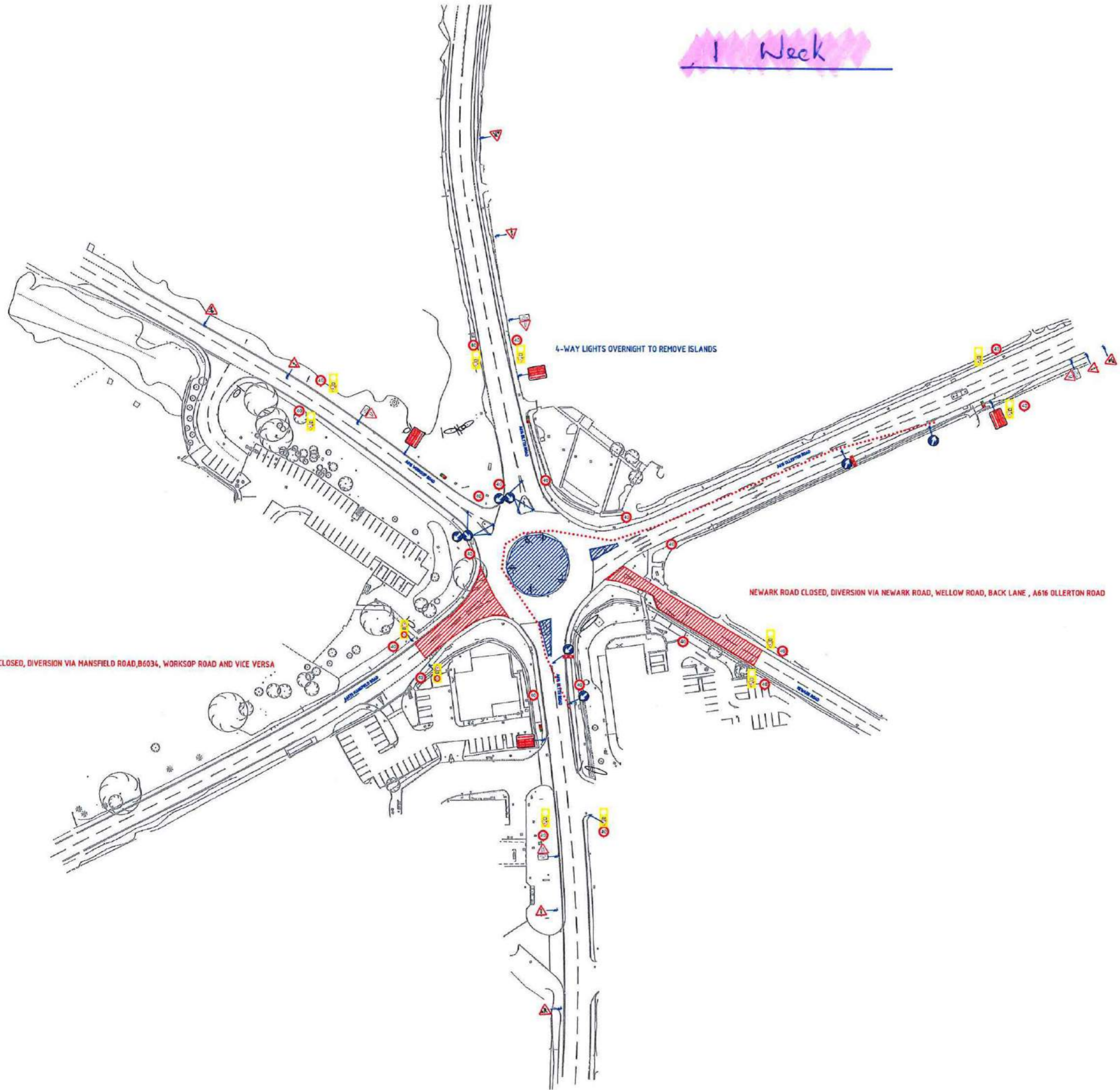
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Approved/Authorised by XXX	Tech Check by RP	Date 19/08/20



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1 Week

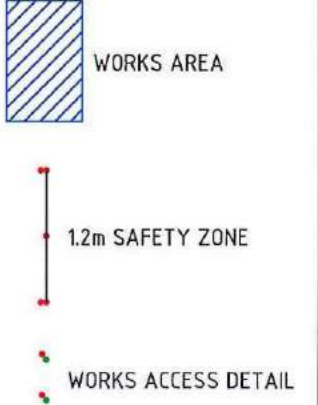


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**NOTES**

- DETAIL B**
- Single Dual carriageway 4.5m or less - 450mm traffic cones, spacing 1.5m.
  - Single Dual carriageway 5.0m or more - 750mm traffic cones, spacing 1.5m.
  - Dual carriageway motorway speed limit - 750mm traffic cones, spacing 1.5m, minimum 3m.
- Notes:**
- During darkness, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - 45° apex flare 1.5m spacing, no reduction.
  - On motorways and A1, AP dual carriageway structures, the cones will be required for both standard and reduced volumes for both lanes and the flaring as before changes.
- DETAIL C1**
- Single Dual carriageway 4.5m or less - 450mm traffic cones.
  - Single Dual carriageway 5.0m or more - 750mm traffic cones.
- Notes:**
- During darkness, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - For revision to Detail C1 see Table A1.3 (Appendix 1).
- DETAIL D**
- Single Dual carriageway 4.5m or less - 450mm traffic cones.
  - Single Dual carriageway 5.0m or more - 750mm traffic cones.
- Notes:**
- During darkness, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - Detail D applies only to revision cases.

TO BE ERRECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



MANSFIELD ROAD CLOSED, DIVERSION VIA MANSFIELD ROAD, B6034, WORKSOP ROAD AND VICE VERSA

4-WAY LIGHTS OVERNIGHT TO REMOVE ISLANDS

NEWARK ROAD CLOSED, DIVERSION VIA NEWARK ROAD, WELLOW ROAD, BACK LANE, A616 OLLERTON ROAD

Revision Details	By	Date	Suffix
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Drawing Number	Revision
OLLERTONRAB02	

Drawing Status  
**FOR APPROVAL**

Project Title  
**VIA EM  
OLLERTON RAB  
TRAFFIC MANAGEMENT**

Drawing Title  
**4-WAY LIGHTS  
LAYOUT 2**

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**NOTES**

**DETAIL B (D)**

Single Dual carriageway 40mph or less - 450mm traffic cones, spacing 1.5m.  
 Single Dual carriageway 50mph or more - 250mm traffic cones, spacing 1.5m.  
 Dual carriageway with total speed limit - 120mm traffic cones, spacing 1.5m, minimum 2m.

Notes:  
 1) During daylight, warning lights to BS EN 12332 2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) 40' signs have 1.5m spacing, no reduction.  
 3) On motorways and A1, 50' signs with red and blue, for cones will be required for both standard and reduction work for work areas or at the front of the work zone.

**DETAIL C1**

Single Dual carriageway 40mph or less - 450mm traffic cones.  
 Single Dual carriageway 50mph or more - 250mm traffic cones.

Notes:  
 1) During daylight, warning lights to BS EN 12332 2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) For reduction to Detail C1 see Table A1.3 (Appendix 1).

**DETAIL D (D)**

Single Dual carriageway 40mph or less - 450mm traffic cones.  
 Single Dual carriageway 50mph or more - 250mm traffic cones.

Notes:  
 1) During daylight, warning lights to BS EN 12332 2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) Detail D applies to reduction cases.

**TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT**



WORKS AREA



1.2m SAFETY ZONE



WORKS ACCESS DETAIL

Revision Details	By	Date	Suffix

Drawing Number	Revision
OLLERTONRAB01	

Drawing Status  
**FOR APPROVAL**

Project Title  
 VIA EM  
 OLLERTON RAB  
 TRAFFIC MANAGEMENT

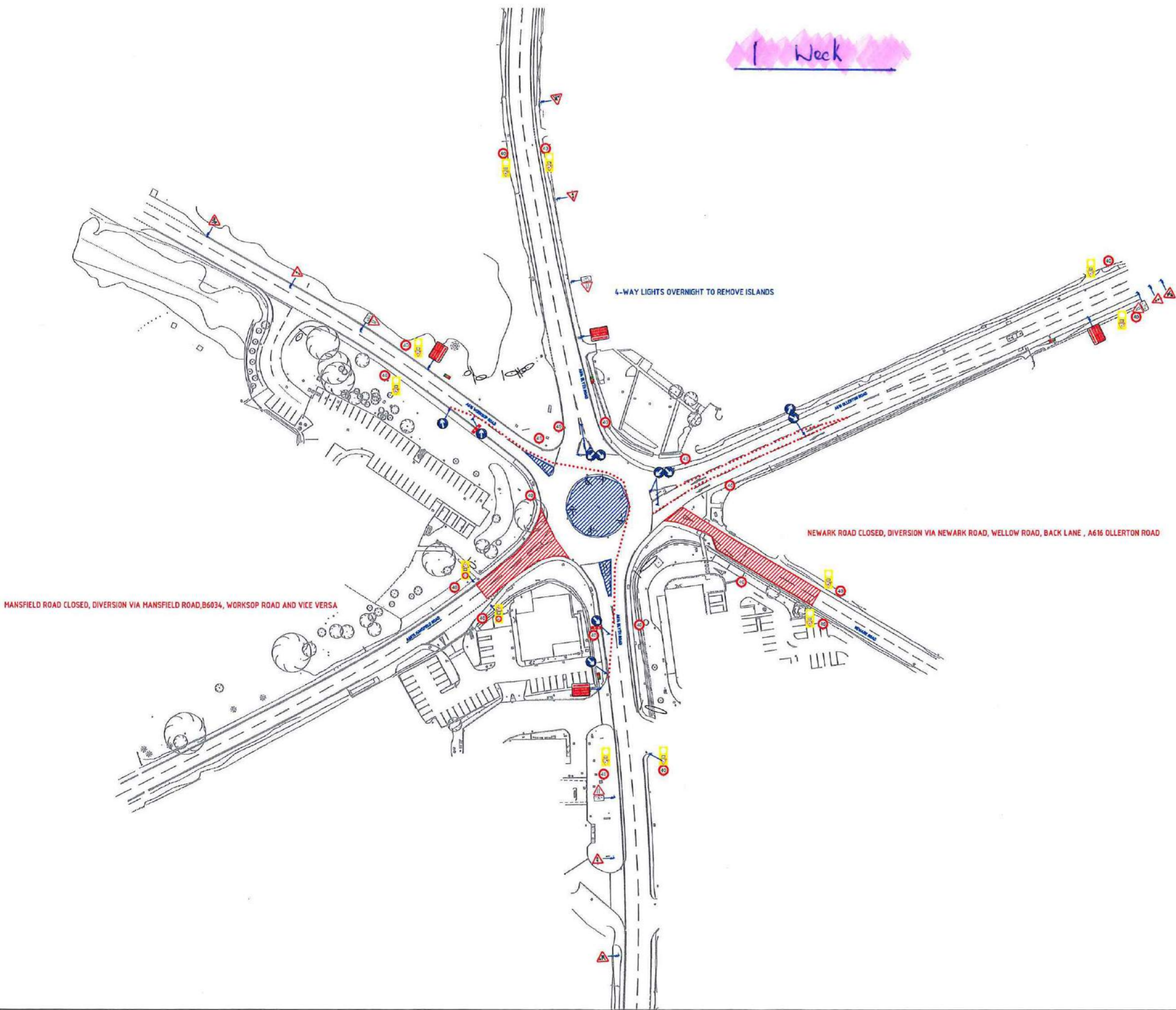
Drawing Title  
**4-WAY LIGHTS LAYOUT 1**

Scale of A1 NOT TO SCALE	Drawn by TW	Date 19/08/20
Approved/Authorised by XXX	Tech Check by RP	Date 19/08/20



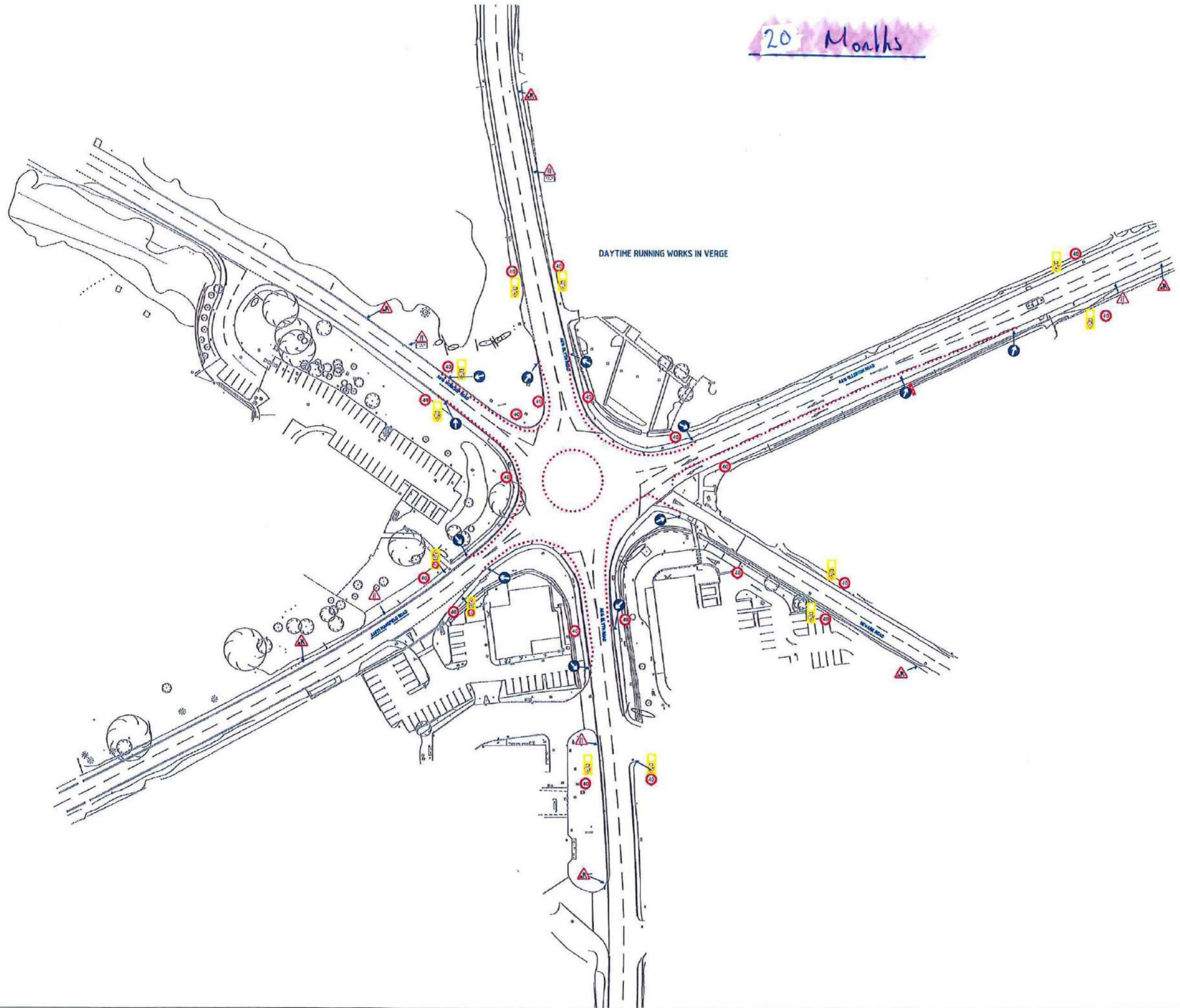
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**1 Week**





20 Months



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

### NOTES

**DETAIL B**

Single End of Day Running Works in Verge - 450m max length  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m

**DETAIL C**

Single End of Day Running Works in Verge - 450m max length  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m

**DETAIL D**

Single End of Day Running Works in Verge - 450m max length  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m  
 2x 100mm dia traffic cones spaced 1.5m

**TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT**

WORKS AREA

1.2m SAFETY ZONE

WORKS ACCESS DETAIL

Revision Details	By	Date	Surfite

Drawing Number	OLLERTONRAB05	Revision	
Drawing Status	FOR APPROVAL		
Project Title	VIA EM OLLERTON RAB TRAFFIC MANAGEMENT		
Drawing Title	LANE 1 CLOSURE DAY TIME RUNNING WORKS IN VERGE		

Scale of A1	Drawn by	Date
NOT TO SCALE	TV	19/08/20
Approved/Authorised by	Tech Check by	Date
XXX	RP	19/08/20

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NOTES

DETAIL B

Single Dual carriageway 40m or less - 400m traffic cones, spacing 1.2m.  
 Single Dual carriageway 50m or more - 200m traffic cones, spacing 1.2m.  
 Dual carriageway national speed limit - 200m traffic cones, spacing 1.5m, reduction 1m.

Notes:  
 1) During darkness, warning lights to BS EN 12812:2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) All signs shall be 1.2m spacing, no reflections.  
 3) On motorways and PD, AP duals with hard shoulders, the cones will be required for both overcast and restoration works for both stages and the closing width of the changes.

DETAIL C.1

Single Dual carriageway 40m or less - 400m traffic cones, spacing 1.2m.  
 Single Dual carriageway 50m or more - 200m traffic cones, spacing 1.5m, reduction 1m.

Notes:  
 1) During darkness, warning lights to BS EN 12812:2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) For restoration to Detail C.1 see Table A1.3 (Appendix 1).

DETAIL D

Single Dual carriageway 40m or less - 400m traffic cones, spacing 1.2m.  
 Single Dual carriageway 50m or more - 200m traffic cones, spacing 1.5m, reduction 1m.

Notes:  
 1) During darkness, warning lights to BS EN 12812:2006 should be provided in accordance with Table A1.3 (Appendix 1).  
 2) Detail D applies only to handover cases.

TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix
	CA		

Drawing Number: OLLERTONRAB11

Drawing Status: FOR APPROVAL

Project Title: VIA EM OLLERTON RAB TRAFFIC MANAGEMENT

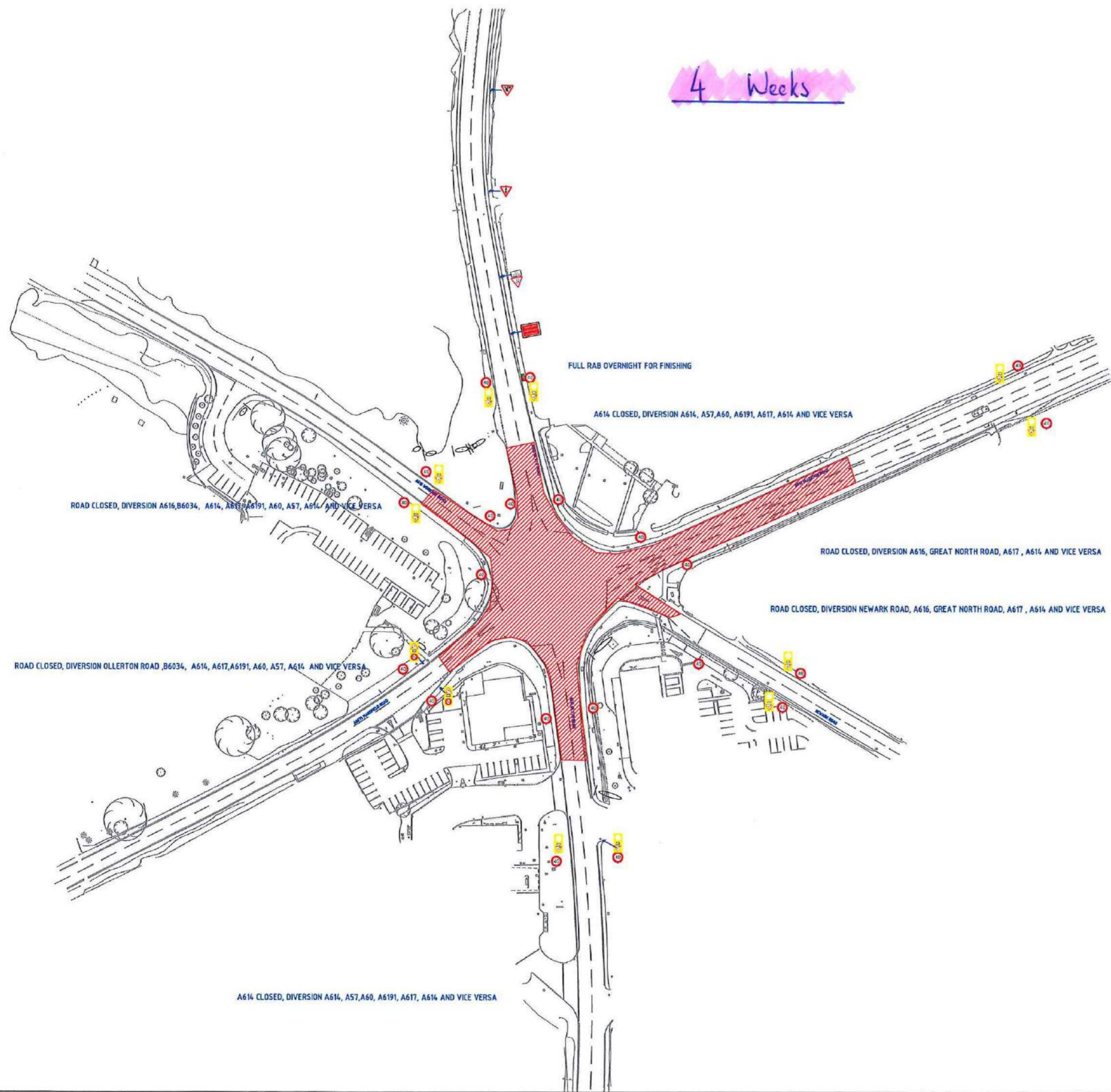
Drawing Title: FULL RAB CLOSURE FOR FINISHING WORKS

Scale at A1 NOT TO SCALE	Drawn by TW	Date 19/08/20
Approved/Authorised by XXX	Tech Check by RP	Date 19/08/20



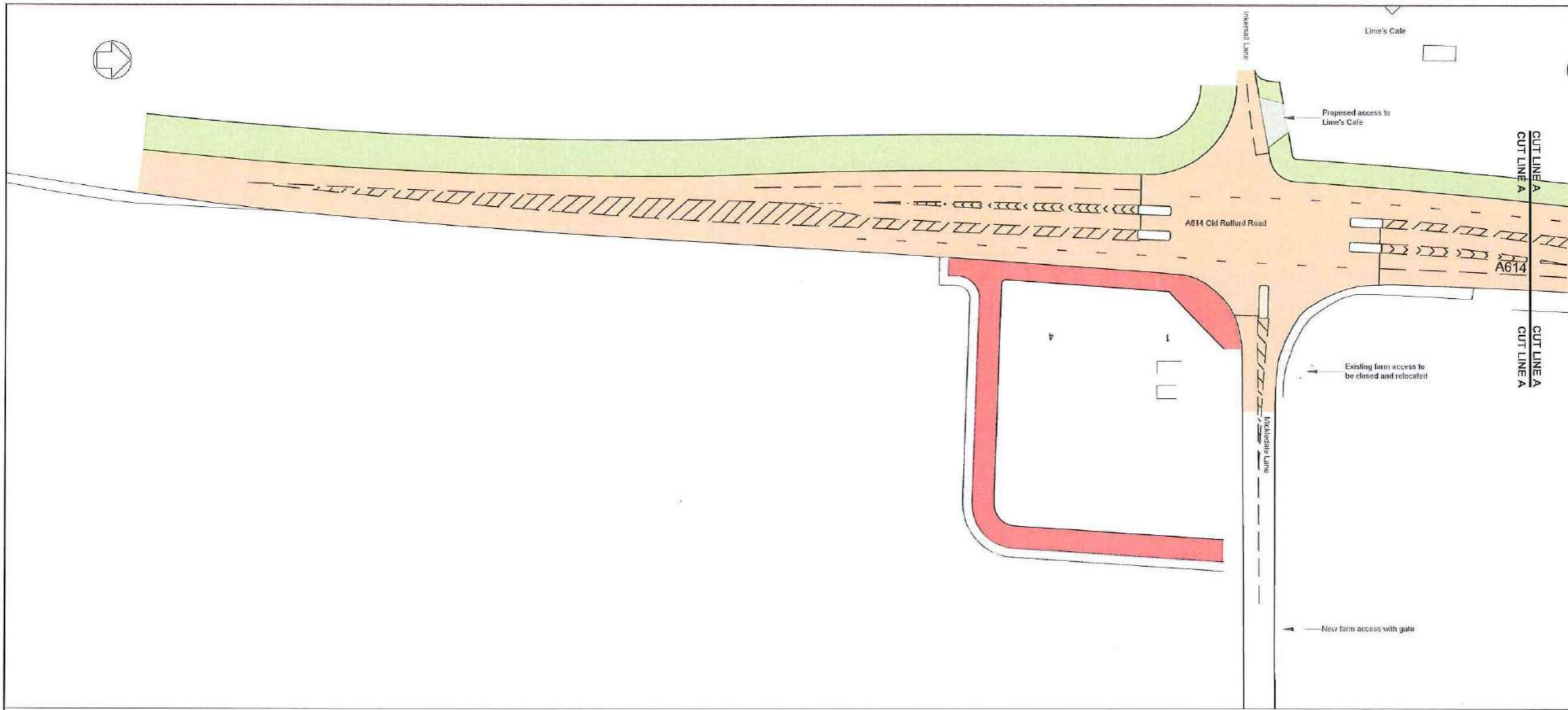
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4 Weeks



**Mickledale**

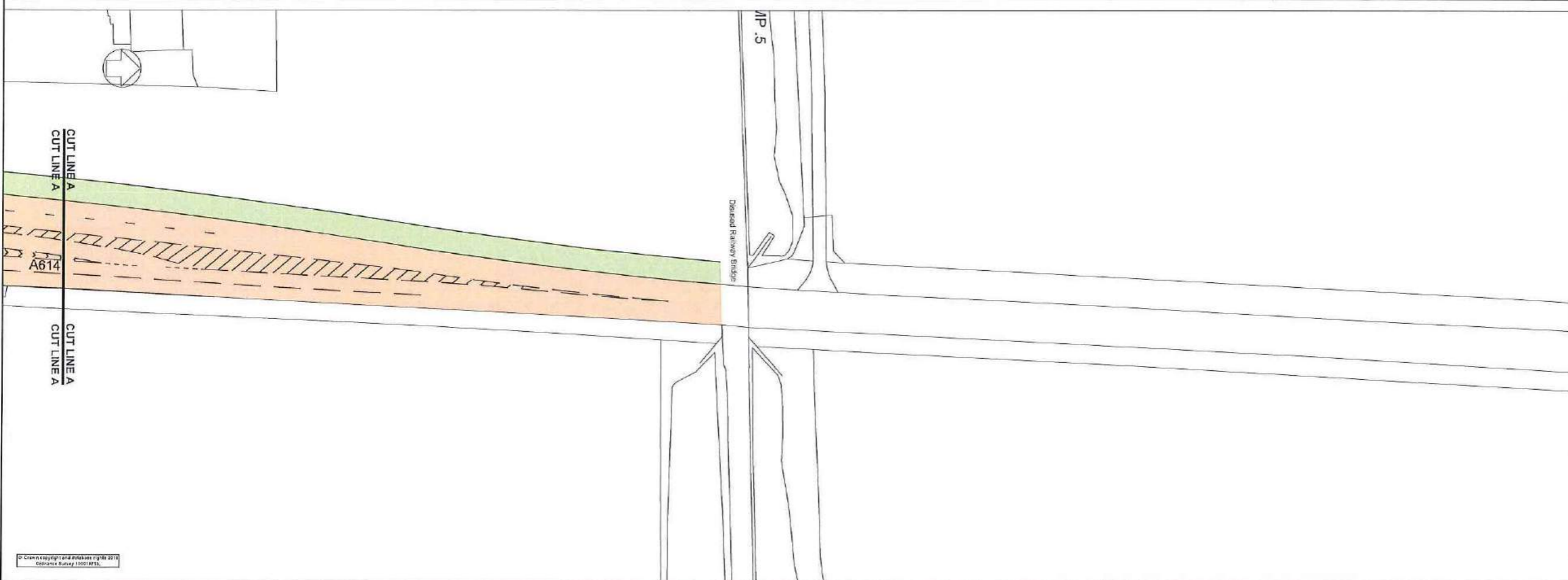




- NOTES**
1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
  2. Do not scale from this drawing.
  3. All measurements are given in metres unless otherwise stated.
  4. This drawing shows the draft general arrangement for the proposed upgrade of the existing right turn ghost island junction arrangement to a signalised junction. Tracking movements have been included on this drawing to show the relevant and suggested arrangements for access and egress to the 4 houses SE of the junction and to the Lime's Cafe. These proposals are only indicative in nature and actual arrangements are to be confirmed following further discussions with affected property owners, affected land owners, A1U, traffic signals and the District Manager.
  5. The existing carriageway is to be widened to accommodate additional lanes and traffic islands. It is suggested the widening is restricted to the western side. The adjoining land affected is of agricultural and car park (Lime's Cafe) use.
  6. New verges up to 3.0m wide are to be constructed alongside the carriageway widening, affected underground services could be diverted in to these areas. These areas of private land are to be acquired by the Local Highway Authority for the proposed highway improvements.

- KEY**
- Carriageway Construction
  - Proposed Traffic Islands
  - Footway Construction
  - Proposed Verges
  - Proposed Access Road for the 4 Properties

Phase 1 - 3 Weeks  
 Phase 2 - 16 Weeks  
 Phase 3 - 20 Weeks  
 Phase 4 - 2 Weeks



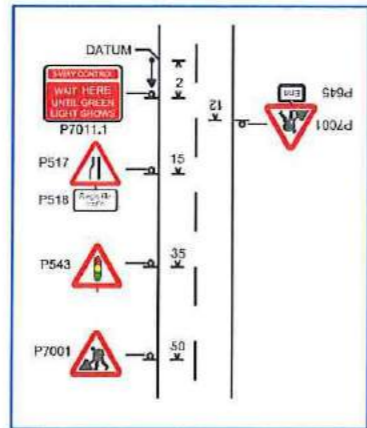
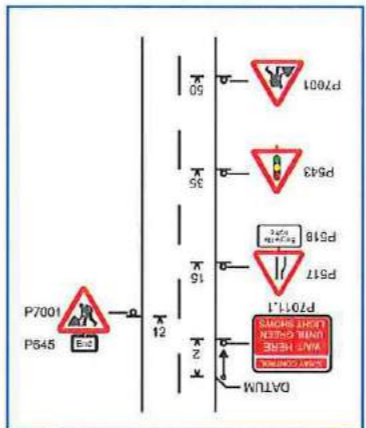
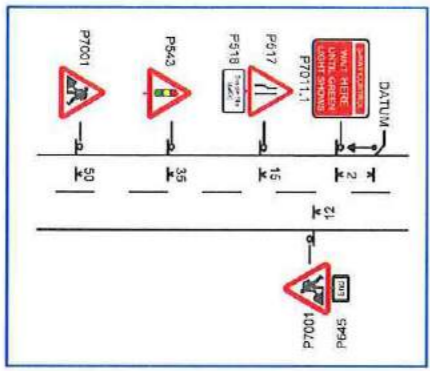
Rev.	Description	Drawn	Ch'kd	Auth	Date
Project	A614/A6097 CORRIDOR IMPROVEMENTS MICKLEDALE LANE JUNCTION				
SCA	FOR INFO.	Project No. HW20949			
Drawing Title	GENERAL ARRANGEMENT				
Scale	1:500 @A1	Drawn	JD	Check	11.02.20
Drawing No.	HW20949/GEN/M003/001	Rev.	0		





3 Weeks of 3-Way Lights with Mickledale Closed for removal of Splitter Islands.

Phase 1



**NOTES**

**DETAIL B**

Single Dual carriageway 50m or more - 120m traffic cones, spacing 1.5m.  
 Dual Carriageway 20m or more - 75m traffic cones, spacing 1.5m.  
 Dual Carriageway 10m or more - 75m traffic cones, spacing 1.5m.  
 Minimum 2m.

**DETAIL C1**

Single Dual carriageway 50m or more - 45m traffic cones, spacing 1.5m.  
 Dual Carriageway 20m or more - 45m traffic cones, spacing 1.5m.  
 Dual Carriageway 10m or more - 45m traffic cones, spacing 1.5m.  
 Minimum 2m.

**Legend:**

- WORKS AREA
- WALK BOARDS
- ROAD CLOSURE
- ACCESS ONLY
- EURO MATS
- DIVERSION ROUTE
- KERB DROPPER
- PEDESTRIAN ROUTE MINIMUM 1.2M
- PEDESTRIAN MARSHALL

**0.5m SAFETY ZONE**

3.25M DESIRED, 3.0M ABSOLUTE MINIMUM SINGLE LANE RUNNING

6.75M RUNNING FOR 2-WAY TRAFFIC MINIMUM

Revision	Details	By	Date	Suffix

Drawing Number: A614 MICKLEDALE TM03

Drawing Status: FOR APPROVAL

Project Title: VIA EAST MIDLANDS A614 JCT MICKLEDALE LANE NOTTINGHAMSHIRE

Drawing Title: TRAFFIC MANAGEMENT 3-WAY LIGHTS MICKLEDALE LANE CLOSED

Scale	Drawn by	Date
A1 NOT TO SCALE	TM	21/08/20

Approved/Authorised by	Tech Check by	Date
LT	RP	27/08/20

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16 Weeks

Phase 2

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NOTES

DETAIL B

0.5m Safety Zone  
Single Duct for Highway 45mm or less - 45mm traffic cones, spacing 1.5m.  
Single Duct for Highway 45mm or more - 75mm traffic cones, spacing 1.5m.  
Dual Duct for Highway 45mm or less - 45mm traffic cones, spacing 1.5m.  
Dual Duct for Highway 45mm or more - 75mm traffic cones, spacing 1.5m.  
Reflection 30'

Notes:  
1) Ducting shall be wearing light blue or grey 400gsm 2000F ducting  
to prevent fire - accordance with Traffic Signs Regulations and General Directions 2016  
2) All signs to be placed on the right hand side of the road  
3) All signs to be placed on the right hand side of the road  
4) All signs to be placed on the right hand side of the road

DETAIL C1

0.5m Safety Zone  
Single Duct for Highway 45mm or less - 45mm traffic cones, spacing 1.5m.  
Single Duct for Highway 45mm or more - 75mm traffic cones, spacing 1.5m.  
Dual Duct for Highway 45mm or less - 45mm traffic cones, spacing 1.5m.  
Dual Duct for Highway 45mm or more - 75mm traffic cones, spacing 1.5m.  
Reflection 30'

WORKS AREA	WALK BOARDS
------------	-------------

ROAD CLOSURE
--------------

ACCESS ONLY	EURO MATS
-------------	-----------

DIVERSION ROUTE
-----------------

KERB DROPPER
--------------

--

PEDESTRIAN ROUTE MINIMUM 1.2M
-------------------------------

	PEDESTRIAN MARSHALL
--	---------------------

0.5m SAFETY ZONE

3.25M DESIRED, 3.0M ABSOLUTE MINIMUM SINGLE LANE RUNNING

6.75M RUNNING FOR 2-WAY TRAFFIC MINIMUM

Revision Details

By	Date	Suffix

Drawing Number	Revision
A614 MICKLEDALE TM02	

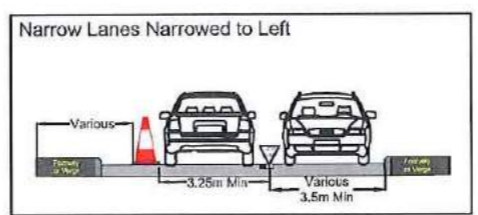
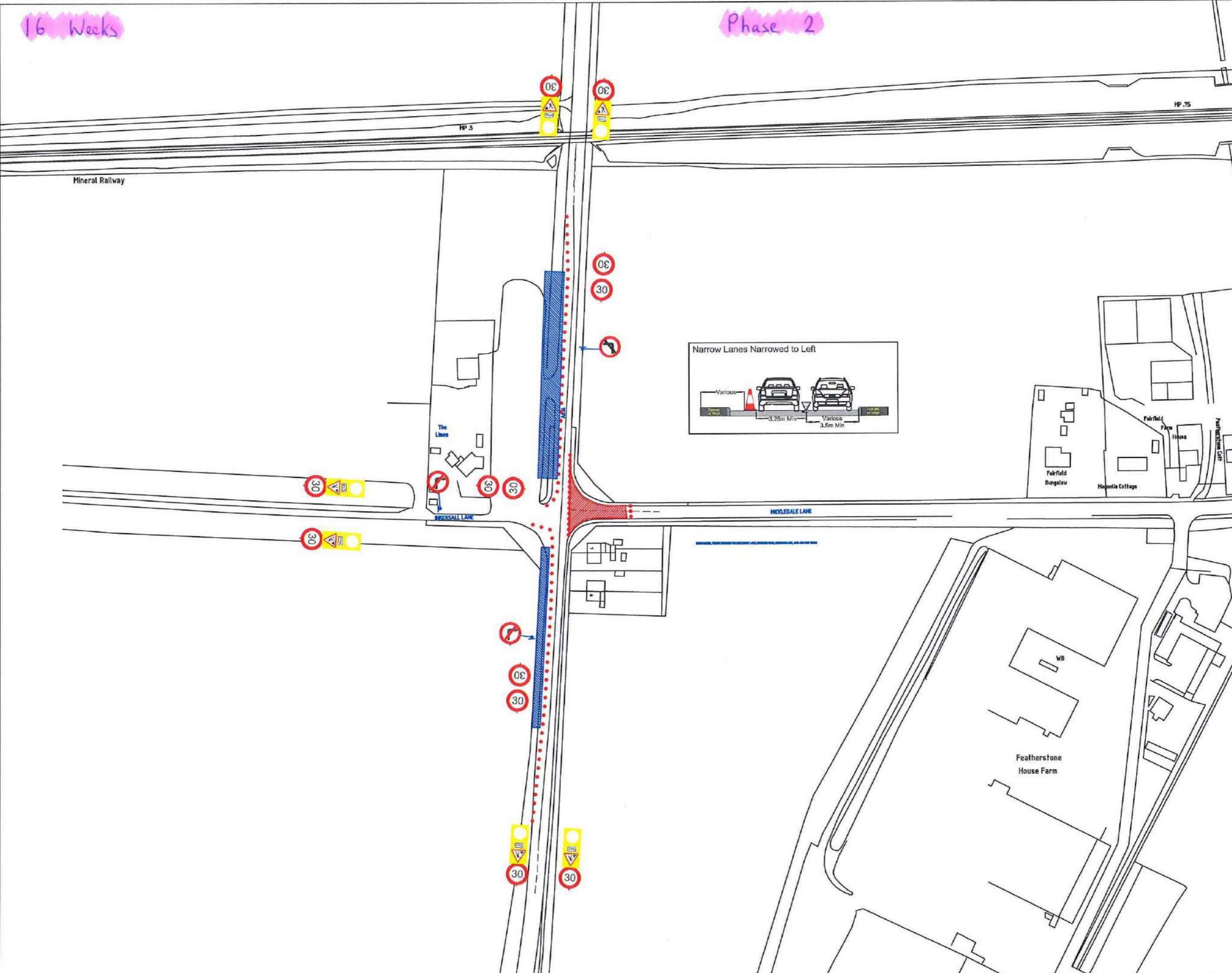
Drawing Status	FOR APPROVAL
Project Title	VIA EAST MIDLANDS A614 JCT MICKLEDALE LANE NOTTINGHAMSHIRE

Drawing Title	TRAFFIC MANAGEMENT NARROW LANES MICKLEDALE LANE CLOSED
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Scale at A1	Drawn by	Date
NOT TO SCALE	TV	21/08/20
Approved/Authorised by	Tech Check by	Date
LT	RP	21/08/20



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20 weeks

Phase 3



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NOTES

**DETAIL B**

Single Dual carriageway 40mph or less - 400m traffic cones, leading 150m, 200m dual carriageway blocks or more - 150m traffic cones, leading 150m, dual carriageway blocks or more - 150m traffic cones, leading 150m, 150m traffic cones.

**DETAIL C1**

Single Dual carriageway 40mph or less - 400m traffic cones, Single Dual carriageway 50mph or more - 150m traffic cones.

**Notes**

1) During day work, warning lights to be on. 2) 200m traffic cones to be provided in accordance with Table A1.3 (Appendix 1). 3) 200m traffic cones to be provided in accordance with Table A1.3 (Appendix 1). 4) On motorways or A1(M) JCTs, 200m traffic cones to be provided in accordance with Table A1.3 (Appendix 1). 5) For information to detail C1 see Table A1.3 (Appendix 1).

- WORKS AREA
- WALK BOARDS
- ROAD CLOSURE
- ACCESS ONLY
- EURO MATS
- DIVERSION ROUTE
- KERB DROPPER
- PEDESTRIAN ROUTE MINIMUM 1.2M
- PEDESTRIAN MARSHALL



0.5m SAFETY ZONE

3.25M DESIRED, 3.0M ABSOLUTE MINIMUM SINGLE LANE RUNNING

6.75M RUNNING FOR 2-WAY TRAFFIC MINIMUM

Revision Details	By	Date	Suffix
Drawing Number	A614 MICKLEDALE TM04		Revision
Drawing Status	FOR APPROVAL		
Project Title	VIA EAST MIDLANDS A614 JCT MICKLEDALE LANE NOTTINGHAMSHIRE		
Drawing Title	TRAFFIC MANAGEMENT TRAFFIC ON NEW ROAD MICKLEDALE LANE CLOSED		
Scale at A1	Drawn by	Date	
NOT TO SCALE	TV	27/08/20	
Approved/Authorised by	Tech Check by	Date	
LT	RP	27/08/20	

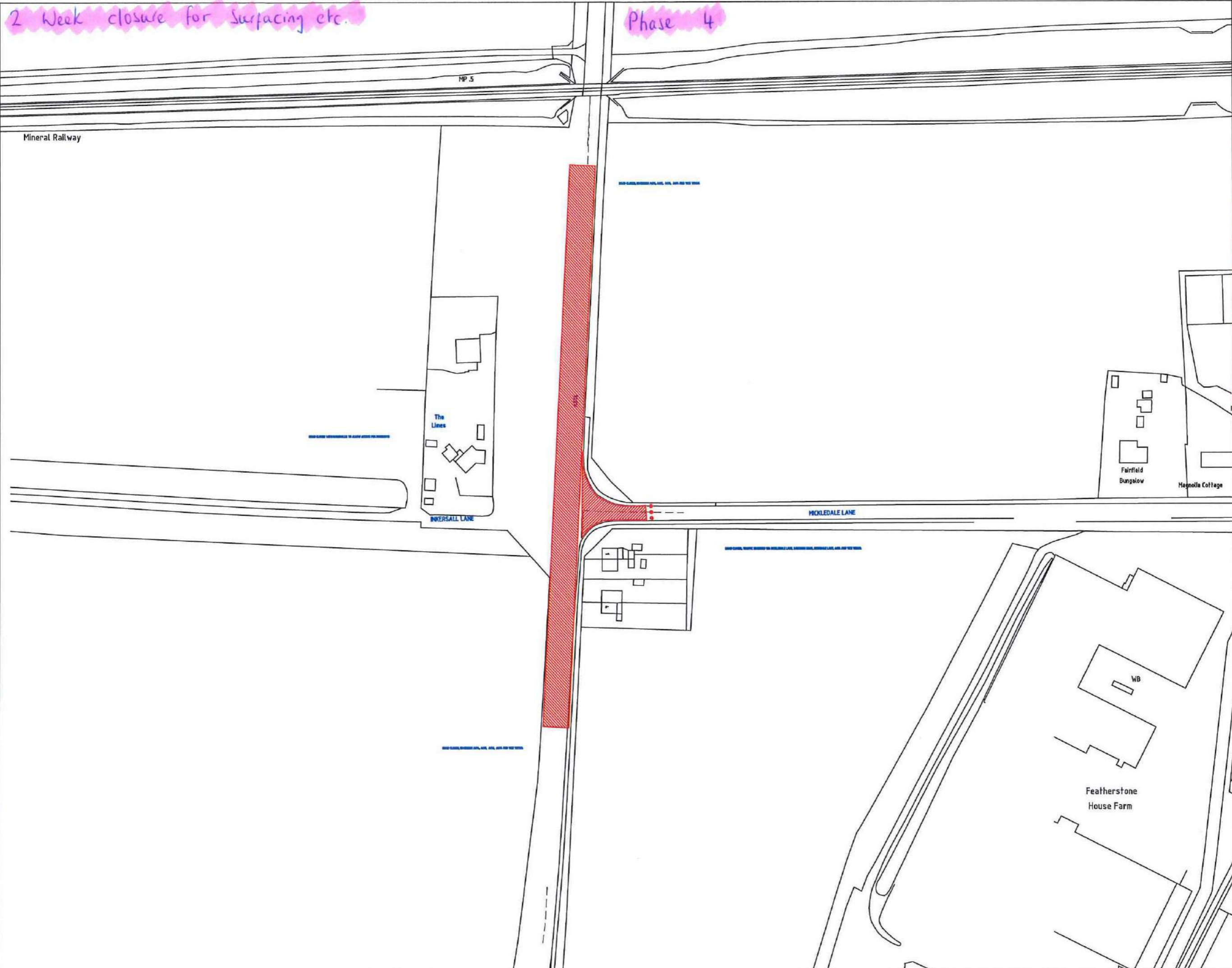


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2 Week closure for Surfacing etc.

Phase 4



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NOTES

**DETAIL B**

Single Dual carriageway 50mch or more - 420mm traffic cones, spacing 1.5m. Single Dual carriageway 50mch or more - 750mm traffic cones, spacing 1.5m. Dual carriageway 25mch or more - 750mm traffic cones, spacing 1.5m. Max road width 10m

**DETAIL C**

Single Dual carriageway, 30mch or more - 420mm traffic cones. Single Dual carriageway, 30mch or more - 750mm traffic cones.

**Notes:**

1. During the works, existing lights to BS EN 13832 2004 should be used. Single dual carriageway 50mch or more - 750mm traffic cones, spacing 1.5m. Single dual carriageway 25mch or more - 750mm traffic cones, spacing 1.5m. Max road width 10m.

2. 200mm water mains under road, Inkersall Lane, Fairfield Bungalow, Magnolia Cottage and The New Woods.

3. Details to be used for kerb dropped and related works for bus lanes and a facing side of lane changes.

WORKS AREA WALK BOARDS

ROAD CLOSURE EURO MATS

ACCESS ONLY

DIVERSION ROUTE 30

KERB DROPPER PEDESTRIAN ROUTE MINIMUM 1.2M

PEDESTRIAN MARSHALL

0.5m SAFETY ZONE

3.25M DESIRED, 3.0M ABSOLUTE MINIMUM SINGLE LANE RUNNING

6.75M RUNNING FOR 2-WAY TRAFFIC MINIMUM

Revision Details	By	Date	Staff/No.

Drawing Number	Revision
A614 MICKLEDALE TM05	

Drawing Status  
FOR APPROVAL

Project Title  
VIA EAST MIDLANDS  
A614 JCT MICKLEDALE LANE  
NOTTINGHAMSHIRE

Drawing Title  
TRAFFIC MANAGEMENT  
A614 CLOSED  
MICKLEDALE LANE  
CLOSED

Scale at A1 NOT TO SCALE	Drawn by TW	Date 27/08/20
Approval/Authorised by LT	Tech Check by RP	Date 27/08/20



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**Lowdham**





Phase 1 - 

Phase 2 - 

Phase 3 - Option 1 - 

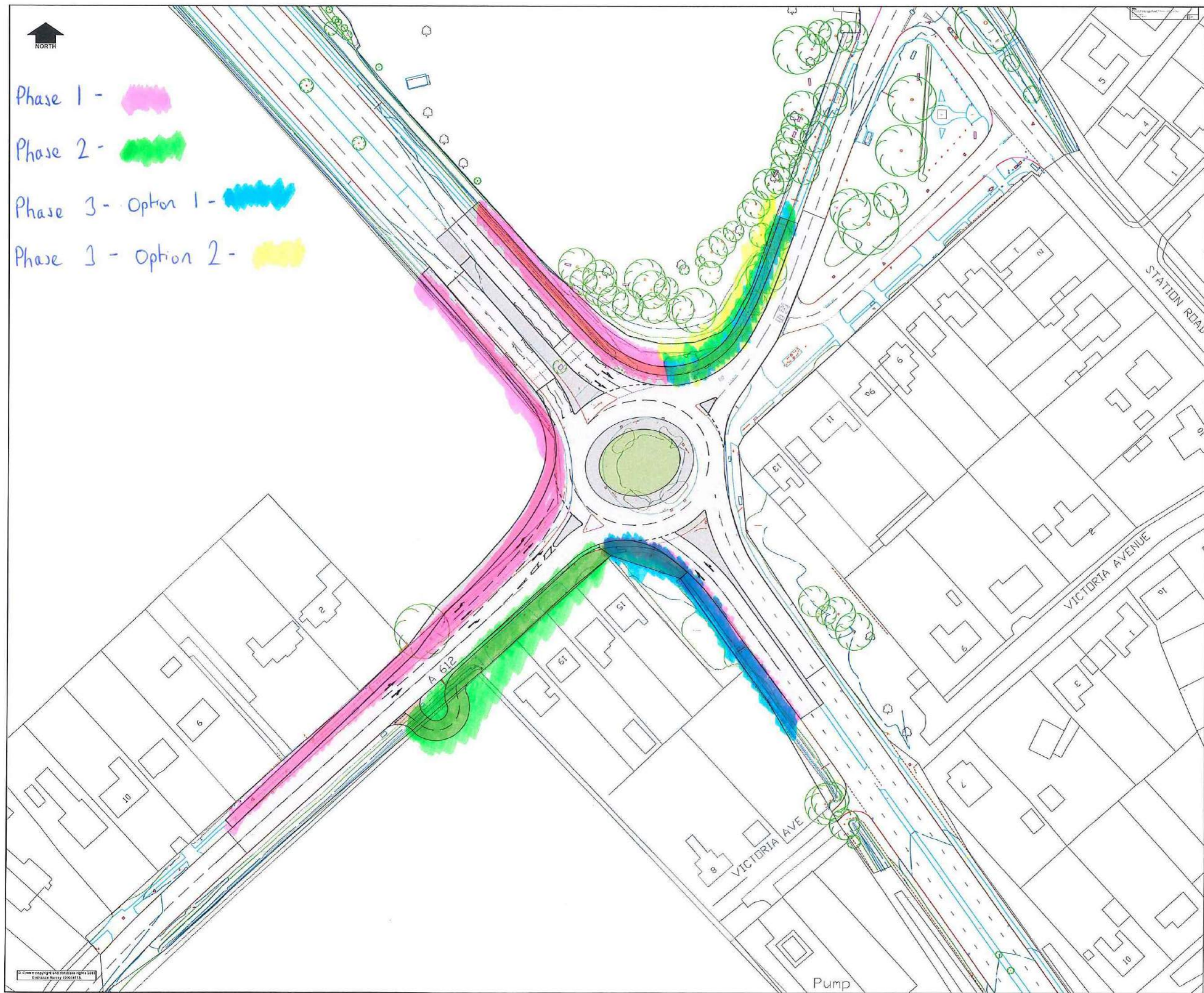
Phase 3 - Option 2 - 

**NOTES**

1. This drawing is to be read in conjunction with all other relevant drawings, details and specifications.
2. Do not scale from this drawing.
3. All measurements are given in metres unless otherwise stated.

**KEY**

-  Proposed carriageway
-  Proposed footway
-  Proposed grass verge
-  Proposed access road



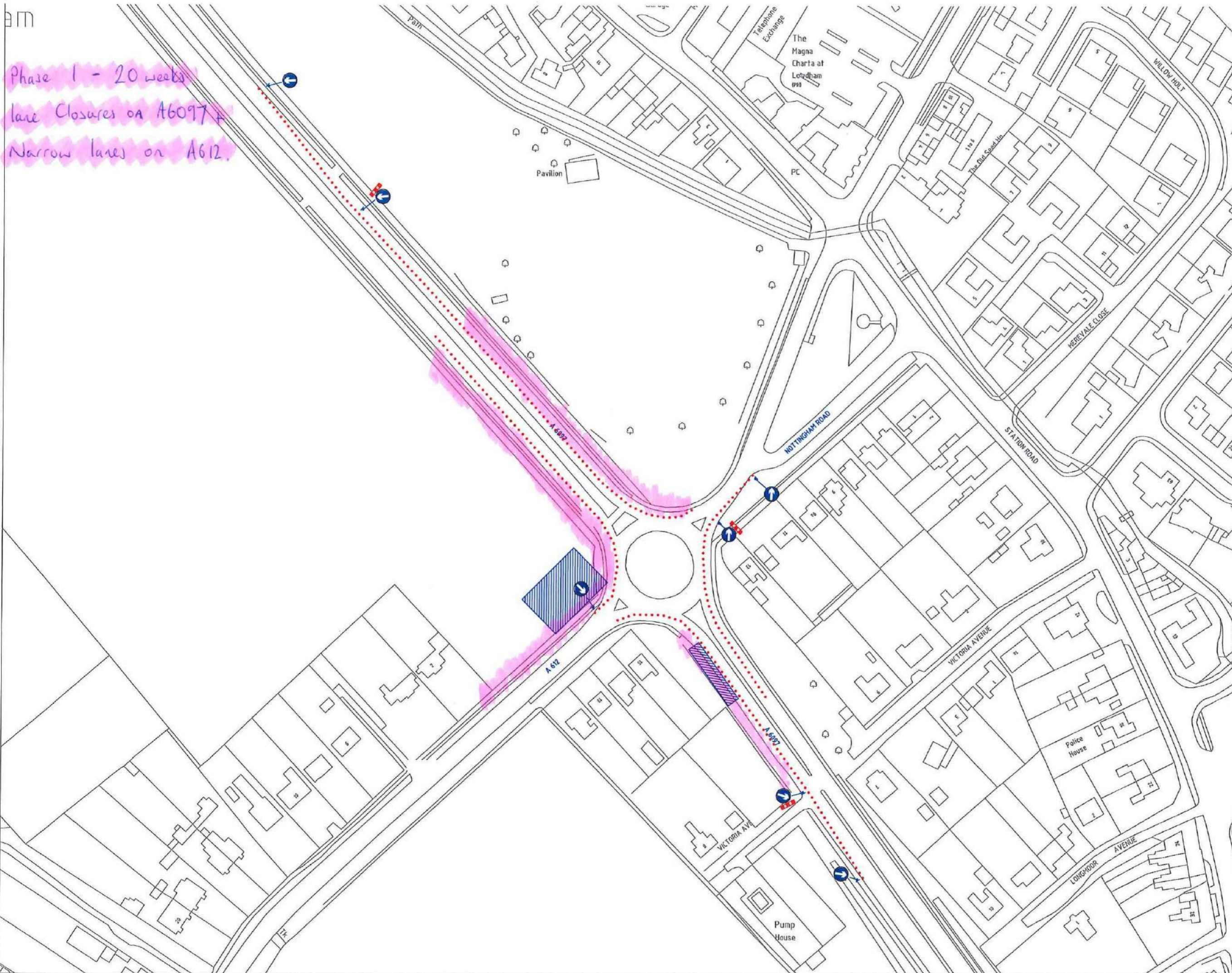
Rev.	Description	Drawn	Cl'd	Auth	Date
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FOR INFOR		Project No: HW20949			
Drawing Title: ELLIPSE ROUNDABOUT WITH LEFT LANE FILTER ON A612					
Scale: 1:500 @A1	Drawn: JD	Date: MAR 20			
Drawing No: 20949/GEN/L006/SK/009					Rev: 0





BM

Phase 1 - 20 weeks  
lane closures on A6097 &  
Narrow lanes on A612

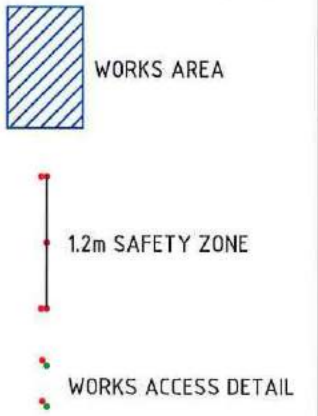


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NOTES

- DETAIL B**
- Single Dual carriageway 40mph or less - 450mm traffic cones, spacing 1.5m.
  - Single Dual carriageway 50mph or more - 750mm traffic cones, spacing 1.5m.
  - Dual carriageway 50mph or more - 750mm traffic cones, spacing 1.5m, and 1.5m.
- DETAIL C1**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- DETAIL D**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**
- 1) During darkness, warning lights to BS EN 12352:2006 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) 45° USA's to be 1.5m spacing, no intervals.
  - 3) On motorways and dual carriageways with hard shoulders, the cones will be required for both standard and reduction units to be used to mark the temporary closed lanes.

TO BE ERRECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix

Drawing Number: LOWDHAM RAB TM035

Drawing Status: FOR APPROVAL

Project Title: VIA EAST MIDLANDS LOWDHAM RAB

Drawing Title: TRAFFIC MANAGEMENT

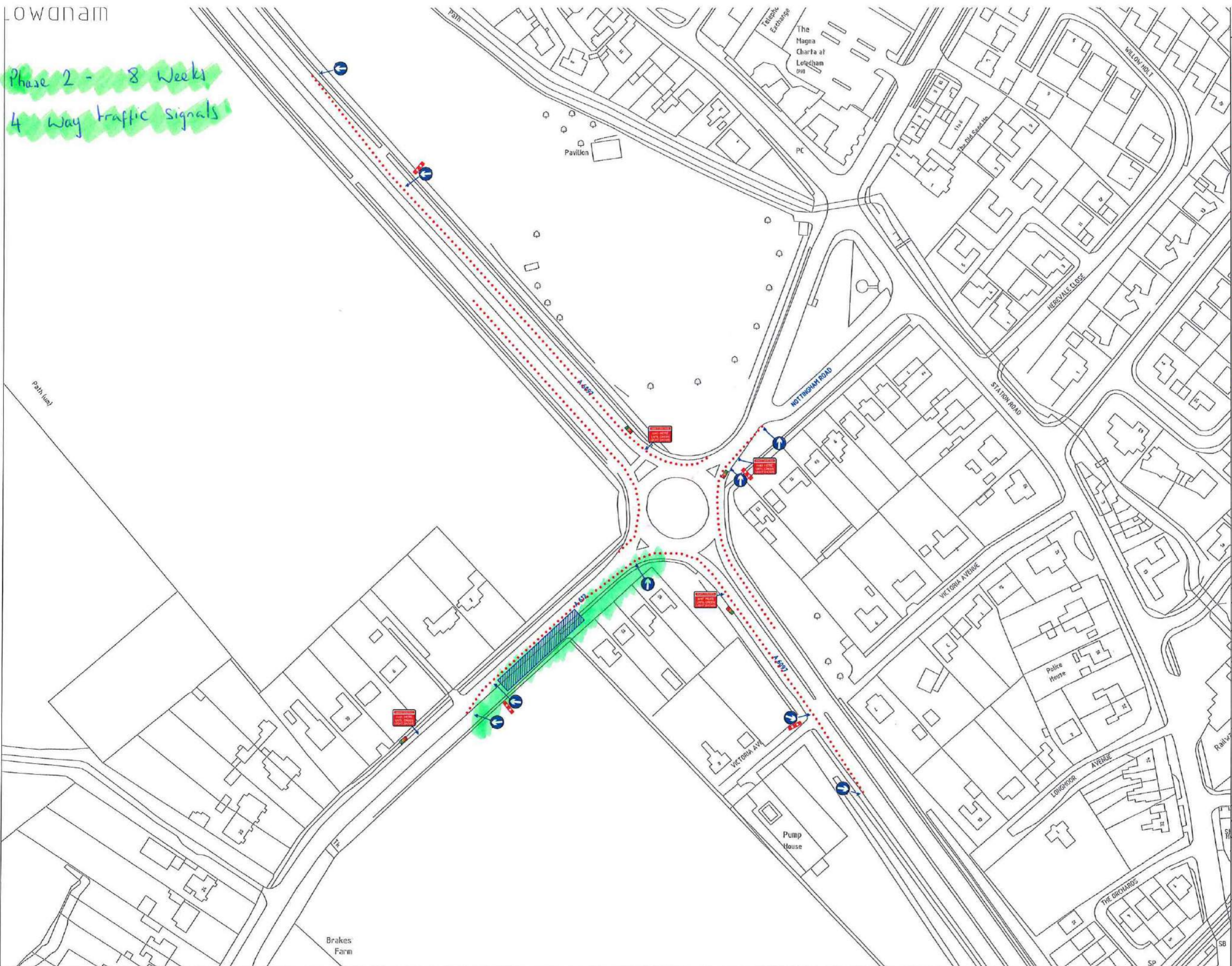
Scale of A1: NOT TO SCALE	Drawn by: TW	Date: 23/09/20
Approved/Authorised by: XXX	Tech Check by: RP	Date: 23/09/20



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Phase 2 - 8 Weeks  
4 Way traffic signals

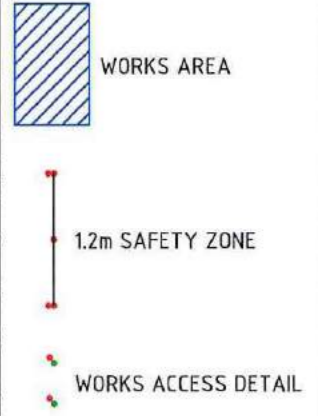


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NOTES

- DETAIL B**
- Single Dual carriageway 4th/5th or less - 450m traffic cones, spacing 1.5m. Single Dual carriageway 5th/6th or more - 750m traffic cones, spacing 1.5m. Dual carriageway 7th/8th or more - 750m traffic cones, spacing 1.5m. Interval 5m.
- Notes:**  
1) During distress, warning lights to BS 51:12352 2006 should be provided in accordance with Table A1.3 Appendix 11.  
2) 45° cones have 1.5m spacing to adjacent cones.  
3) On narrow roads, 45° cones with 1.5m spacing, the cones will be required for both standard construction work for both ways and the facing will be the same.
- DETAIL C**
- Single Dual carriageway 4th/5th or less - 450m traffic cones, spacing 1.5m. Single Dual carriageway 5th/6th or more - 750m traffic cones, spacing 1.5m.
- Notes:**  
1) During distress, warning lights to BS 51:12352 2006 should be provided in accordance with Table A1.3 Appendix 11.  
2) For obstructions 6m or less see Table A1.3 Appendix 11.
- DETAIL D**
- Single Dual carriageway 4th/5th or less - 450m traffic cones, spacing 1.5m. Single Dual carriageway 5th/6th or more - 750m traffic cones, spacing 1.5m.
- Notes:**  
1) During distress, warning lights to BS 51:12352 2006 should be provided in accordance with Table A1.3 Appendix 11.  
2) Detail D applies only to obstruction cases.

TO BE ERRECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix

Drawing Number	LOWDHAM RAB TM035	Revision	
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Drawing Status  
**FOR APPROVAL**

Project Title  
**VIA EAST MIDLANDS  
LOWDHAM RAB**

Drawing Title  
**TRAFFIC MANAGEMENT**

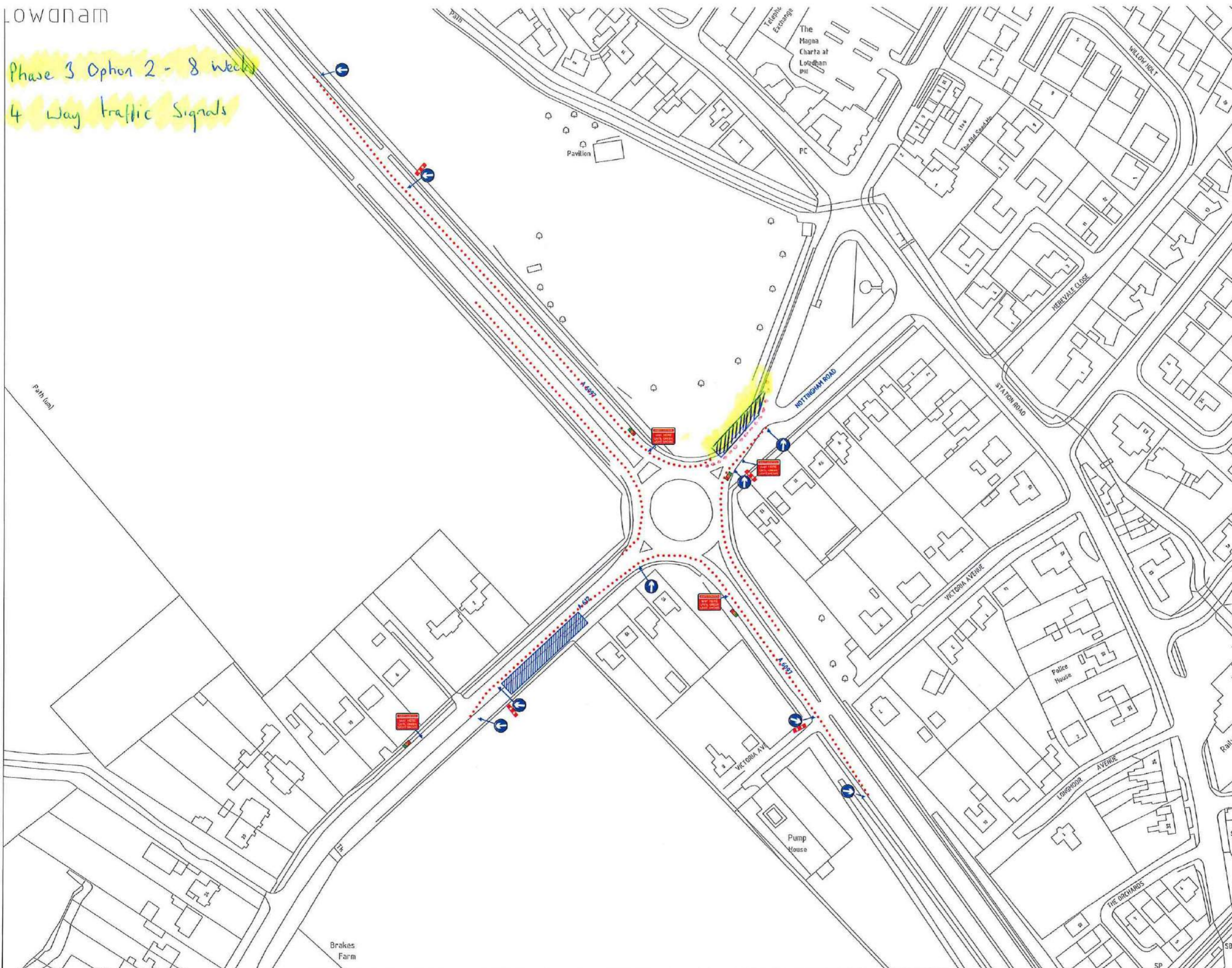
Scale at A1	Drawn by	Date
NOT TO SCALE	TV	23/09/20
Approved/Authorised by	Tech Check by	Date
XXX	RP	23/09/20



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Phase 3 Option 2 - 8 weeks  
4 Way traffic signals

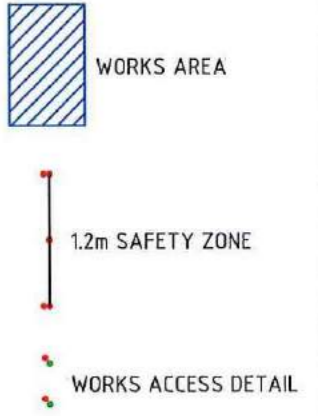


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NOTES

- DETAIL B**
- Single Dual carriageway 40m or less - 450mm traffic cones spacing 1.5m
  - Single Dual carriageway 50m or more - 200mm traffic cones spacing 1.5m
  - Single Dual carriageway 50m or more - 200mm traffic cones spacing 1.5m
- DETAIL C**
- Single Dual carriageway 40m or less - 450mm traffic cones
  - Single Dual carriageway 50m or more - 200mm traffic cones
- DETAIL D**
- Single Dual carriageway 40m or less - 450mm traffic cones
  - Single Dual carriageway 50m or more - 200mm traffic cones

TO BE ERRECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix

Drawing Number	Revision
LOWDHAM RAB TM035	

Drawing Status  
**FOR APPROVAL**

Project Title  
**VIA EAST MIDLANDS  
LOWDHAM RAB**

Drawing Title  
**TRAFFIC MANAGEMENT**

Scale at A1	Drawn by	Date
NOT TO SCALE	TW	23/09/20
Approved/Authorised by	Tech Check by	Date
KXX	RP	23/09/20



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**Kirkhill**

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

DETAIL B

Single Dual carriageway 40m or less - 450mm traffic cones, spacing 3.0m.  
 Single Dual carriageway 20m or more - 750mm traffic cones, spacing 1.2m.  
 Dual carriageway rural speed limit - 250m traffic cones, spacing 1.5m.  
 Minimum 1.0m.

Notes:  
 1) During distress, warning lights to BS EN 12352:2006 should be provided in accordance with Table A1.3 Appendix 11.  
 2) AT signs have 1.5m spacing, no reduction.  
 3) On motorways and A1, AT signs with red reduction area cones will be required for both standard and reduction work by both lanes and the long 2.0m traffic cones.

DETAIL C1

Single Dual carriageway 50m or less - 450mm traffic cones.  
 Single Dual carriageway 50m or more - 750mm traffic cones.

Notes:  
 1) During distress, warning lights to BS EN 12352:2006 should be provided in accordance with Table A1.3 Appendix 11.  
 2) For reference to Detail C1 see Table A1.3 Appendix 11.

DETAIL D

Single Dual carriageway 40m or less - 450mm traffic cones.  
 Single Dual carriageway 50m or more - 750mm traffic cones.

Notes:  
 1) During distress, warning lights to BS EN 12352:2006 should be provided in accordance with Table A1.3 Appendix 11.  
 2) Detail D applies only to reduction cases.

TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix

Drawing Number	KIRK HILL TM02	Revision	
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Drawing Status: FOR APPROVAL

Project Title: VIA EAST MIDLANDS A6097 KIRK HILL

Drawing Title: TRAFFIC MANAGEMENT

Scale of A1	Drawn by	Date
NOT TO SCALE	TW	24/09/20
Approved/Authorised by	Tech Check by	Date
XXX	RP	24/09/20



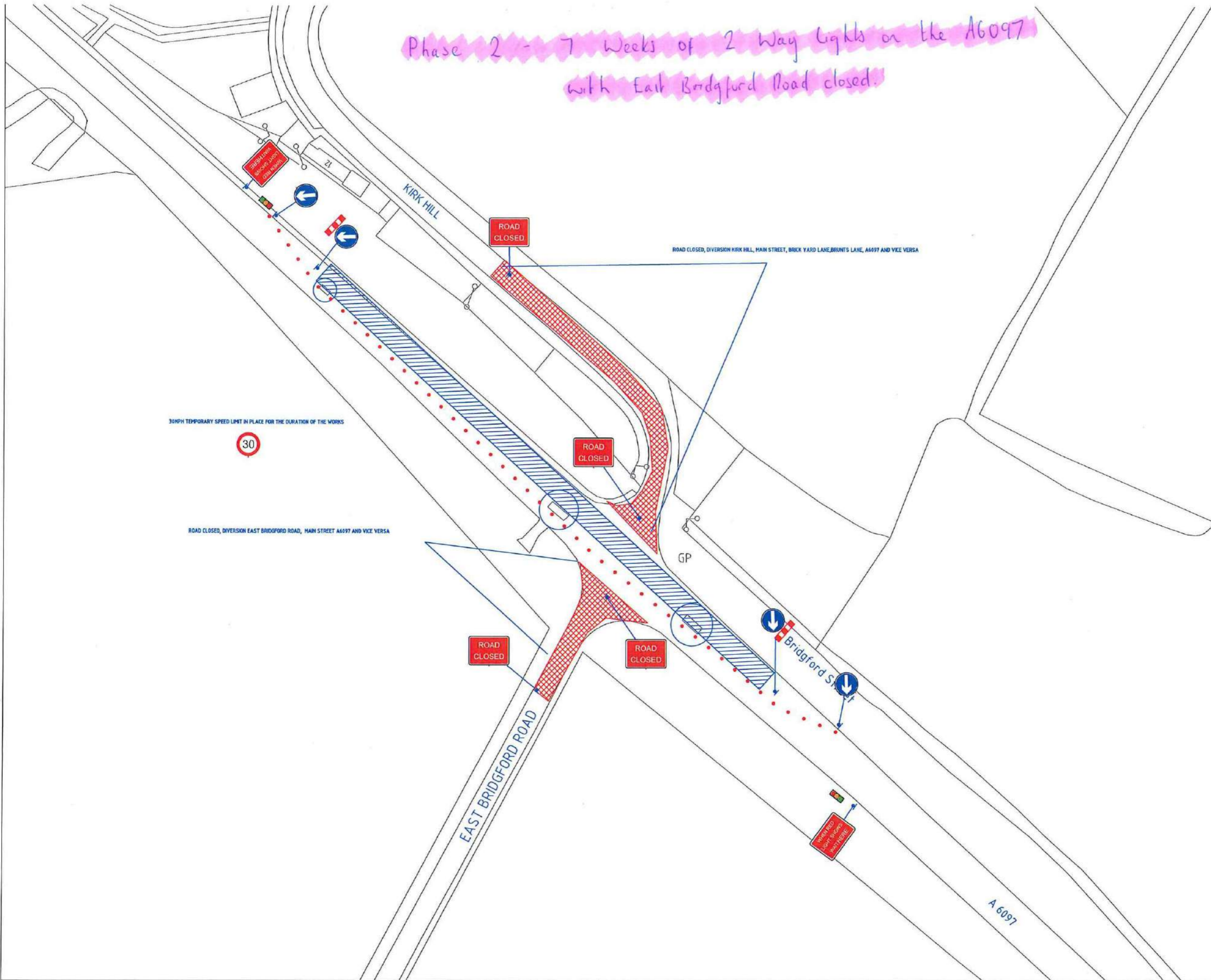
TSM Ltd  
 Valley Road Ind Est  
 Earlswood  
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 Tel: 01564 700241  
 email: enquiries@tsmltd.co.uk

Phase 1 - 30 Weeks lane closures allowing 2 Way traffic on the A6097, with East Bridgford Road Closed.





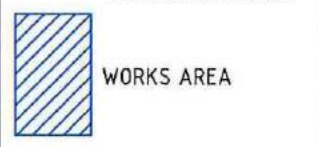
Phase 2 - 7 Weeks of 2 Way Lights on the A6097  
with East Bridgford Road closed.



NOTES

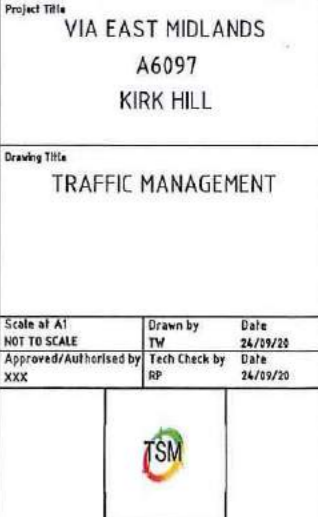
- DETAIL B**
- Single Dual carriageway 40mph or less - 450mm traffic cones, spacing 1.5m.
  - Single Dual carriageway 50mph or more - 750mm traffic cones, spacing 1.5m.
  - Dual carriageway or motorway 50mph or more - 1000mm traffic cones, spacing 1.5m.
- Notes:**
- 1) During delivery, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) 45° top/bottom 1.5m radius, 1000mm diameter.
  - 3) On motorway and HSL AP dual carriageway, the cones will be required for both standard and reduction lanes for both lanes and the facing in both directions.
- DETAIL C**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**
- 1) During delivery, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) For relation to Detail C1 see Table A1.3 (Appendix 1).
- DETAIL D**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**
- 1) During delivery, warning lights to BS EN 12352:2009 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) Detail D applies only to reduction lanes.

TO BE ERECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Drawing Number	KIRK HILL TM01
Drawing Status	FOR APPROVAL
Project Title	VIA EAST MIDLANDS A6097 KIRK HILL
Drawing Title	TRAFFIC MANAGEMENT

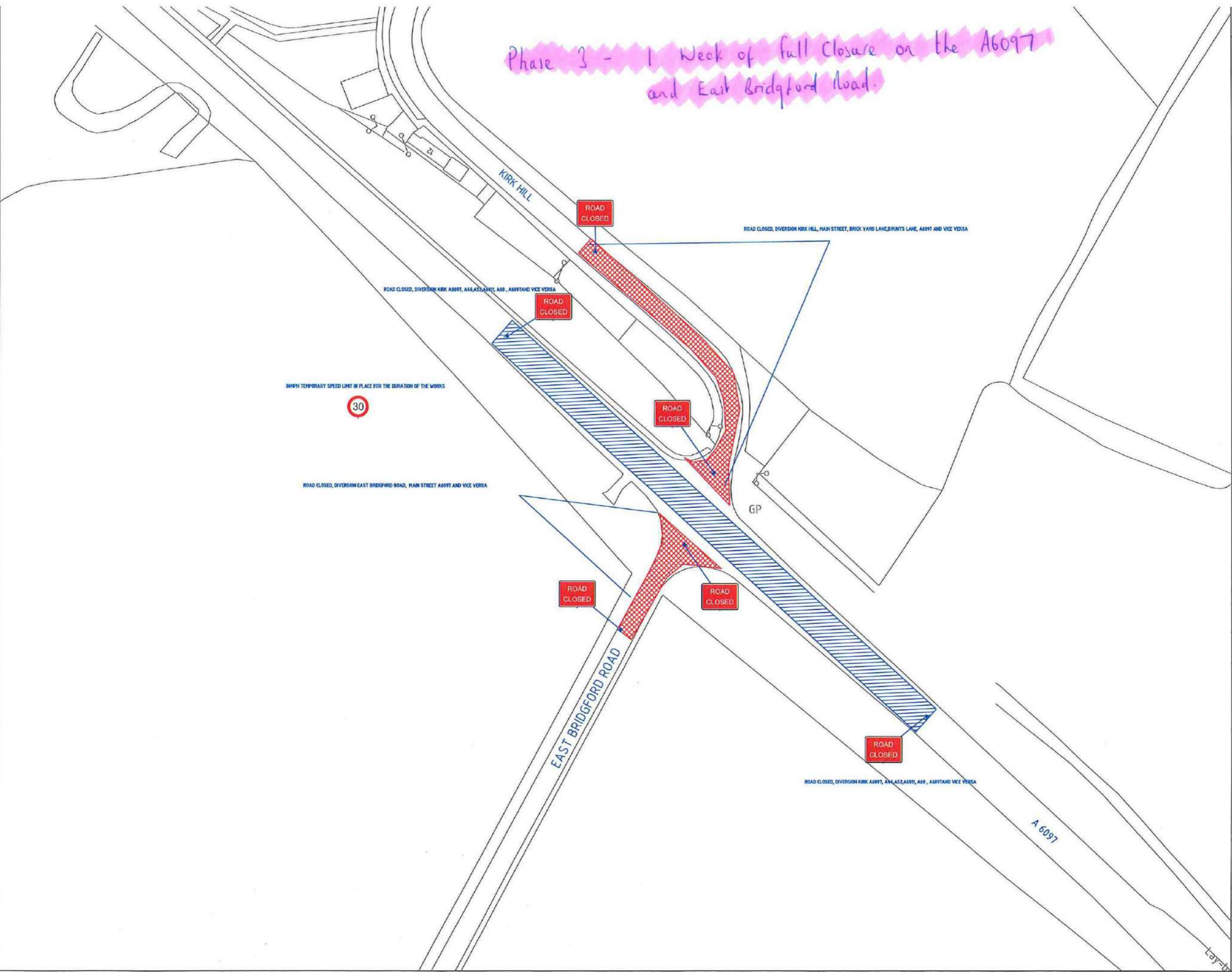
Scale of A1	NOT TO SCALE	Drawn by	TW	Date	24/09/20
Approved/Authorised by	XXX	Tech Check by	RP	Date	24/09/20



TSM Ltd  
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Phase 3 - 1 Week of full closure on the A6097 and East Bridgford Road.



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

- DETAIL B**
- Single Dual carriageway 40mph or less - 450mm traffic cones, spacing 3.0m.
  - Single Dual carriageway 50mph or more - 750mm traffic cones, spacing 3.0m.
  - Dual carriageway 50mph or more - 750mm traffic cones, spacing 3.0m, minimum 2m.
- Notes:**
- 1) During darkness, warning lights to BS EN 12352:2000 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) 45° tapered cones 1.2m spacing, no reflectors.
  - 3) 750mm traffic cones, 400mm width, 300mm height, 100mm diameter, 100mm spacing.
  - 4) Cones will be required for both standard and advanced work.
  - 5) For details of the layout of the cones, see the Traffic Management Plan.
- DETAIL C**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**
- 1) During darkness, warning lights to BS EN 12352:2000 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) The reference to Detail C1 see Note A1.3 (Appendix 1).
- DETAIL D**
- Single Dual carriageway 40mph or less - 450mm traffic cones.
  - Single Dual carriageway 50mph or more - 750mm traffic cones.
- Notes:**
- 1) During darkness, warning lights to BS EN 12352:2000 should be provided in accordance with Table A1.3 (Appendix 1).
  - 2) Dual carriageway only for roadwork cases.

TO BE ERRECTED 200m IN ADVANCE OF MAW 1 MILE SIGNS ON VERGE ONLY WHILST INSTALLING / REMOVING TRAFFIC MANAGEMENT



Revision Details	By	Date	Suffix

Drawing Number	KIRK HILL TM03	Revision	
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Drawing Status: FOR APPROVAL

Project Title: VIA EAST MIDLANDS A6097 KIRK HILL

Drawing Title: TRAFFIC MANAGEMENT

Scale at A1	Drawn by	Date
NOT TO SCALE	TW	24/09/20
Approved/Authorised by	Tech Check by	Date
KXX	RP	24/09/20



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## Appendix B – CONSTRUCTION MODEL OUTPUTS

**Ollerton**

# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.0.6896  
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Filename: DDC-DS-J1 Ollerton Rdbt temp tm 19 months.j9

Path: L:\60625845\_A614 MRN DfT responses\08\_Models\Delays During Construction Models

Report generation date: 12/11/2020 10:43:56

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP

### Summary of junction performance

	AM							PM							IP							OP												
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity										
<b>2023</b>																																		
Arm 1	66.9	116.3	260.23	1.15	F			366.0	366.0	1505.96	1.66	F				9.9	51.2	48.01	0.93	E					0.1	0.5	3.49	0.07	A					
Arm 2	74.5	128.9	273.24	1.14	F			20.5	71.9	87.00	1.00	F				5.0	24.9	25.25	0.85	D					0.1	0.5	3.35	0.06	A					
Arm 3	8.5	42.0	62.74	0.93	F	213.96	F	-22% [Arm 4]	3.2	15.7	26.04	0.78	D	572.14	F	-37% [Arm 1]	1.2	4.1	2.39	0.56	B	27.46	D		0.0	0.5	3.40	0.03	A	3.50	A			892% [Arm 1]
Arm 4	42.1	74.6	385.29	1.22	F			4.3	23.1	47.70	0.83	E				1.2	5.1	7.61	0.56	C					0.0	0.5	4.34	0.03	A					
Arm 5	7.3	39.0	49.16	0.90	E			5.2	28.5	33.46	0.86	D				1.5	3.9	2.23	0.60	B					0.0	0.5	3.34	0.04	A					
<b>2023LG</b>																																		
Arm 1	35.2	85.0	140.15	1.15	F	393.13	F	-29%	278.7	278.7	1118.18	1.18	F	421.56	F	-33%	5.8	31.5	29.0	0.0	D	19.17	C		2%	0.1	0.5	3.47	0.0	A	3.48	A	900%	





ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

## 2023, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	213.96	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-22	Arm 4

## Arms

### Arms

Arm	Name	Description
1	A616 Ollerton Rd	
2	A614S Old Rufford Road	
3	A6075 Mansfield Road	
4	A616 Worksop Road	
5	A614N Blyth Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.00	4.00	0.0	35.0	37.5	54.0	
2	4.00	4.00	0.0	13.0	37.5	31.0	
3	3.80	3.80	0.0	18.0	37.5	31.0	
4	3.50	3.50	0.0	7.5	37.5	51.0	
5	4.00	4.00	0.0	24.0	37.5	44.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.515	1136
2	0.533	1176
3	0.532	1141
4	0.438	897
5	0.527	1163

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	817	100.000
2		ONE HOUR	✓	947	100.000
3		ONE HOUR	✓	475	100.000
4		ONE HOUR	✓	375	100.000
5		ONE HOUR	✓	524	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	407	198	142	70
	2	267	15	35	183	447
	3	307	53	0	8	107
	4	231	134	8	0	2
	5	74	363	84	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.15	260.23	66.9	116.3	F	750	1125
2	1.14	273.24	74.5	128.9	F	869	1303
3	0.93	62.74	8.5	42.0	F	436	654
4	1.22	385.29	42.1	74.6	F	344	516
5	0.90	49.16	7.3	39.0	E	481	721

### Main Results for each time segment

**07:45 - 08:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	615	154	491	884	0.696	606	652	0.0	2.2	12.607	B
2	713	178	375	976	0.730	703	722	0.0	2.6	12.728	B
3	358	89	836	696	0.514	353	241	0.0	1.0	10.382	B
4	282	71	940	484	0.583	277	249	0.0	1.3	16.950	C
5	394	99	753	767	0.515	390	465	0.0	1.0	9.470	A

**08:00 - 08:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	585	835	0.879	720	775	2.2	5.8	28.221	D
2	851	213	446	938	0.907	833	859	2.6	7.2	29.822	D
3	427	107	991	614	0.696	423	287	1.0	2.1	18.398	C
4	337	84	1118	407	0.829	327	296	1.3	3.8	41.011	E
5	471	118	894	692	0.680	467	552	1.0	2.0	15.740	C

**08:15 - 08:30**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	679	787	1.143	776	867	5.8	36.8	113.870	F
2	1043	261	489	915	1.139	905	965	7.2	41.7	110.954	F
3	523	131	1076	569	0.919	504	318	2.1	6.9	45.791	E
4	413	103	1258	345	1.196	337	321	3.8	22.8	167.670	F
5	577	144	986	643	0.897	560	609	2.0	6.2	37.531	E

**08:30 - 08:45**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	900	225	691	781	1.152	779	879	36.8	66.9	248.695	F
2	1043	261	493	913	1.142	911	977	41.7	74.5	239.570	F
3	523	131	1083	565	0.926	517	321	6.9	8.5	62.736	F
4	413	103	1276	337	1.224	336	324	22.8	42.1	359.736	F
5	577	144	997	638	0.905	572	615	6.2	7.3	49.160	E

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	734	184	621	817	0.899	805	835	66.9	49.3	260.233	F
2	851	213	493	913	0.932	901	933	74.5	62.0	273.243	F
3	427	107	1080	567	0.753	447	314	8.5	3.4	33.838	D
4	337	84	1203	369	0.912	361	324	42.1	36.2	385.285	F
5	471	118	967	654	0.720	489	597	7.3	2.8	23.872	C

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	615	154	547	855	0.719	800	789	49.3	3.1	103.953	F
2	713	178	476	922	0.773	908	871	62.0	13.4	155.268	F
3	358	89	1084	564	0.634	364	300	3.4	1.8	18.466	C
4	282	71	1125	404	0.700	393	323	36.2	8.6	214.921	F
5	394	99	937	670	0.589	400	581	2.8	1.5	13.576	B

**Queue Variation Results for each time segment**

**07:45 - 08:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.18	0.14	1.11	4.43	5.80			N/A	N/A
2	2.57	0.11	1.16	5.74	7.78			N/A	N/A
3	1.03	0.54	1.03	1.27	1.27			N/A	N/A
4	1.33	0.06	0.81	2.95	4.27			N/A	N/A
5	1.04	0.55	1.02	1.43	1.49			N/A	N/A

**08:00 - 08:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	5.81	0.13	2.51	14.73	20.66			N/A	N/A
2	7.21	0.16	3.43	18.07	25.05			N/A	N/A
3	2.15	0.07	1.14	5.21	7.49			N/A	N/A
4	3.84	0.09	1.29	9.85	14.16			N/A	N/A
5	2.02	0.07	1.06	4.91	7.12			N/A	N/A

**08:15 - 08:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	36.80	12.41	33.41	60.52	70.17			N/A	N/A
2	41.71	14.61	38.09	68.00	78.61			N/A	N/A
3	6.91	0.08	1.68	19.30	29.16			N/A	N/A
4	22.83	6.86	20.32	38.26	44.71			N/A	N/A
5	6.16	0.06	1.20	17.72	28.56			N/A	N/A

**08:30 - 08:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	66.90	28.90	62.80	102.64	116.34			N/A	N/A
2	74.53	32.64	70.10	113.88	128.89			N/A	N/A
3	8.50	0.06	0.99	24.71	42.02			N/A	N/A
4	42.10	17.15	39.12	65.47	74.59			N/A	N/A
5	7.34	0.04	0.45	20.40	38.99			N/A	N/A

**08:45 - 09:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	49.34	22.40	46.46	74.05	83.44			N/A	N/A
2	62.03	25.10	57.78	97.24	110.95			N/A	N/A
3	3.38	0.05	0.47	9.53	16.30			N/A	N/A
4	36.15	12.76	32.99	58.62	67.67			N/A	N/A
5	2.77	0.05	0.46	7.71	13.18			N/A	N/A

**09:00 - 09:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.07	0.03	0.31	4.03	14.93			N/A	N/A
2	13.38	0.36	7.71	32.40	43.63			N/A	N/A
3	1.81	0.04	0.36	4.51	9.37			N/A	N/A
4	8.56	0.17	4.08	21.67	30.07			N/A	N/A
5	1.48	0.03	0.34	3.36	7.64			N/A	N/A

# 2023, PM

**Data Errors and Warnings**

Severity	Area	Item	Description
----------	------	------	-------------

Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	572.14	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-37	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1145	100.000
2		ONE HOUR	✓	781	100.000
3		ONE HOUR	✓	423	100.000
4		ONE HOUR	✓	315	100.000
5		ONE HOUR	✓	546	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	426	372	281	63
	2	154	3	56	165	403
	3	283	50	0	11	79
	4	171	132	8	0	4
	5	69	381	88	7	1

## Vehicle Mix

## Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.66	1505.96	366.0	366.0	F	1051	1576
2	1.00	87.00	20.5	71.9	F	717	1075
3	0.78	26.04	3.2	15.7	D	388	582
4	0.83	47.70	4.3	23.1	E	289	434
5	0.86	33.46	5.2	28.5	D	501	752

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	499	879	0.980	813	506	0.0	12.3	40.602	E
2	588	147	588	863	0.682	580	724	0.0	2.0	12.396	B
3	318	80	791	721	0.442	315	377	0.0	0.8	8.819	A
4	237	59	770	559	0.424	234	335	0.0	0.7	10.992	B
5	411	103	598	848	0.485	407	407	0.0	0.9	8.107	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	599	828	1.243	825	606	12.3	63.4	180.867	F
2	702	176	611	851	0.825	694	813	2.0	4.2	21.786	C
3	380	95	901	662	0.575	378	403	0.8	1.3	12.594	B
4	283	71	914	496	0.571	281	365	0.7	1.3	16.564	C
5	491	123	717	785	0.625	488	478	0.9	1.6	11.993	B

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	722	765	1.648	765	728	63.4	187.4	600.729	F
2	860	215	592	860	0.999	817	894	4.2	14.8	55.393	F
3	466	116	999	610	0.764	459	411	1.3	2.9	22.992	C
4	347	87	1079	424	0.818	337	380	1.3	3.7	38.014	E
5	601	150	861	710	0.847	589	555	1.6	4.6	27.514	D

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1261	315	734	759	1.662	759	741	187.4	313.0	1134.994	F
2	860	215	590	861	0.998	837	902	14.8	20.5	86.996	F
3	466	116	1016	601	0.775	465	412	2.9	3.2	26.043	D
4	347	87	1098	415	0.835	344	383	3.7	4.3	47.700	E
5	601	150	876	702	0.857	599	566	4.6	5.2	33.464	D

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1029	257	620	817	1.259	817	634	313.0	366.0	1461.844	F
2	702	176	609	851	0.825	762	828	20.5	5.5	49.957	E
3	380	95	962	629	0.604	387	409	3.2	1.6	15.217	C
4	283	71	971	471	0.601	294	378	4.3	1.6	21.418	C
5	491	123	750	768	0.639	504	515	5.2	1.8	14.314	B

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	862	216	509	874	0.986	872	519	366.0	363.5	1505.961	F
2	588	147	627	842	0.698	600	755	5.5	2.4	15.586	C
3	318	80	828	701	0.454	321	399	1.6	0.8	9.560	A
4	237	59	795	548	0.432	240	355	1.6	0.8	11.804	B
5	411	103	613	840	0.489	415	422	1.8	1.0	8.529	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	12.25	0.03	0.27	12.25	12.25			N/A	N/A
2	2.05	0.61	1.43	2.95	3.61			N/A	N/A
3	0.78	0.55	1.00	1.40	1.45			N/A	N/A
4	0.72	0.55	1.00	1.40	1.45			N/A	N/A
5	0.92	0.55	1.00	1.40	1.45			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	63.42	>199	>199	>199	>199			N/A	N/A
2	4.18	0.10	1.63	10.55	14.90			N/A	N/A
3	1.31	0.08	1.00	2.61	3.52			N/A	N/A
4	1.28	0.08	0.97	2.56	3.47			N/A	N/A
5	1.61	0.06	0.87	3.82	5.56			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	187.42	>199	>199	>199	>199			N/A	N/A
2	14.82	0.45	8.89	35.41	47.31			N/A	N/A
3	2.93	0.03	0.34	6.20	15.73			N/A	N/A
4	3.65	0.04	0.44	10.23	18.44			N/A	N/A
5	4.62	0.04	0.42	12.72	24.18			N/A	N/A

#### 17:30 - 17:45



Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	312.97	>199	>199	>199	>199			N/A	N/A
2	20.46	0.31	10.65	52.16	71.90			N/A	N/A
3	3.21	0.03	0.30	3.57	14.97			N/A	N/A
4	4.28	0.04	0.37	10.49	23.08			N/A	N/A
5	5.25	0.03	0.35	11.01	28.52			N/A	N/A

### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	365.98	>199	>199	>199	>199			N/A	N/A
2	5.55	0.05	0.48	15.88	27.99			N/A	N/A
3	1.59	0.05	0.67	3.92	5.90			N/A	N/A
4	1.58	0.05	0.45	4.15	6.74			N/A	N/A
5	1.84	0.04	0.44	4.94	8.32			N/A	N/A

### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	363.50	>199	>199	>199	>199			N/A	N/A
2	2.43	0.03	0.32	4.54	12.77			N/A	N/A
3	0.85	0.03	0.35	1.98	3.87			N/A	N/A
4	0.78	0.03	0.31	1.51	3.80			N/A	N/A
5	0.98	0.03	0.32	1.90	4.88			N/A	N/A

# 2023, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	27.46	D

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-3	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
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1		ONE HOUR	✓	725	100.000
2		ONE HOUR	✓	682	100.000
3		ONE HOUR	✓	334	100.000
4		ONE HOUR	✓	232	100.000
5		ONE HOUR	✓	399	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	302	240	130	52
	2	247	2	42	107	284
	3	216	51	0	12	55
	4	125	89	11	0	7
	5	58	281	55	5	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.93	48.01	9.9	51.2	E	665	998
2	0.85	25.25	5.0	24.9	D	626	939
3	0.56	12.39	1.2	4.1	B	306	460
4	0.56	17.61	1.2	5.1	C	213	319
5	0.60	12.23	1.5	3.9	B	366	549

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	369	946	0.577	540	483	0.0	1.3	8.759	A
2	513	128	368	980	0.524	509	541	0.0	1.1	7.584	A
3	251	63	618	812	0.310	250	260	0.0	0.4	6.379	A
4	175	44	678	599	0.291	173	190	0.0	0.4	8.410	A

5	300	75	554	871	0.345	298	297	0.0	0.5	6.262	A
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### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	163	443	909	0.717	647	579	1.3	2.4	13.557	B
2	613	153	441	941	0.652	610	649	1.1	1.8	10.792	B
3	300	75	741	747	0.402	299	311	0.4	0.7	8.023	A
4	209	52	813	540	0.386	208	227	0.4	0.6	10.792	B
5	359	90	664	813	0.441	358	356	0.5	0.8	7.888	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	540	858	0.930	775	705	2.4	8.3	35.697	E
2	751	188	530	894	0.840	740	785	1.8	4.6	21.947	C
3	368	92	895	665	0.553	366	374	0.7	1.2	11.942	B
4	255	64	987	464	0.551	253	274	0.6	1.2	16.910	C
5	439	110	809	737	0.596	437	431	0.8	1.4	11.890	B

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	544	857	0.932	792	712	8.3	9.9	48.010	E
2	751	188	540	888	0.845	749	795	4.6	5.0	25.248	D
3	368	92	908	658	0.559	368	381	1.2	1.2	12.388	B
4	255	64	998	459	0.556	255	278	1.2	1.2	17.610	C
5	439	110	816	733	0.599	439	437	1.4	1.5	12.232	B

### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	652	163	448	906	0.719	681	589	9.9	2.7	17.780	C
2	613	153	461	930	0.659	625	667	5.0	2.0	12.233	B
3	300	75	763	735	0.408	302	324	1.2	0.7	8.359	A
4	209	52	830	533	0.391	211	236	1.2	0.7	11.253	B
5	359	90	675	807	0.444	361	365	1.5	0.8	8.121	A

### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	136	373	944	0.578	551	490	2.7	1.4	9.274	A
2	513	128	375	976	0.526	517	549	2.0	1.1	7.900	A
3	251	63	628	807	0.312	252	264	0.7	0.5	6.503	A
4	175	44	688	595	0.293	176	193	0.7	0.4	8.596	A
5	300	75	562	867	0.346	301	302	0.8	0.5	6.378	A

## Queue Variation Results for each time segment

### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.33	0.57	1.22	1.69	1.86			N/A	N/A
2	1.08	0.55	1.00	1.40	1.45			N/A	N/A
3	0.44	0.00	0.00	0.44	0.44			N/A	N/A
4	0.41	0.00	0.00	0.41	0.41			N/A	N/A

5	0.52	0.52	1.00	1.40	1.45			N/A	N/A
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### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.41	0.06	0.96	6.30	9.46			N/A	N/A
2	1.81	0.06	0.88	4.47	6.56			N/A	N/A
3	0.66	0.11	0.85	1.37	1.44			N/A	N/A
4	0.62	0.11	0.84	1.37	1.43			N/A	N/A
5	0.78	0.10	0.86	1.43	1.50			N/A	N/A

### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	8.34	0.08	1.69	23.81	36.79			N/A	N/A
2	4.57	0.04	0.38	11.60	24.68			N/A	N/A
3	1.20	0.03	0.27	1.20	1.20			N/A	N/A
4	1.18	0.03	0.27	1.18	2.49			N/A	N/A
5	1.43	0.03	0.27	1.43	2.47			N/A	N/A

### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	9.95	0.05	0.74	28.85	51.22			N/A	N/A
2	4.99	0.03	0.32	7.17	24.91			N/A	N/A
3	1.24	0.03	0.28	1.24	4.12			N/A	N/A
4	1.22	0.03	0.29	1.38	5.12			N/A	N/A
5	1.47	0.03	0.28	1.47	3.93			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.71	0.04	0.40	7.34	13.72			N/A	N/A
2	2.00	0.05	0.45	5.43	8.99			N/A	N/A
3	0.70	0.08	0.77	1.39	1.47			N/A	N/A
4	0.66	0.06	0.65	1.39	1.48			N/A	N/A
5	0.81	0.08	0.81	1.07	1.59			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.40	0.03	0.31	2.08	6.96			N/A	N/A
2	1.13	0.03	0.33	2.53	5.70			N/A	N/A
3	0.46	0.04	0.39	1.24	1.39			N/A	N/A
4	0.42	0.04	0.36	1.22	1.39			N/A	N/A
5	0.54	0.04	0.42	1.36	1.50			N/A	N/A

# 2023, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

## Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.50	A

## Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	892	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	71	100.000
2		ONE HOUR	✓	66	100.000
3		ONE HOUR	✓	32	100.000
4		ONE HOUR	✓	23	100.000
5		ONE HOUR	✓	39	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	30	23	13	5
	2	24	0	4	10	28
	3	21	5	0	1	5
	4	12	9	1	0	1
	5	6	27	5	1	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.07	3.49	0.1	0.5	A	65	98
2	0.06	3.35	0.1	0.5	A	61	91
3	0.03	3.40	0.0	0.5	A	29	44
4	0.03	4.34	0.0	0.5	A	21	32
5	0.04	3.34	0.0	0.5	A	36	54

## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36	1118	0.048	53	47	0.0	0.1	3.381	A
2	50	12	36	1157	0.043	50	53	0.0	0.0	3.251	A
3	24	6	61	1109	0.022	24	25	0.0	0.0	3.317	A
4	17	4	66	868	0.020	17	19	0.0	0.0	4.232	A
5	29	7	54	1135	0.026	29	29	0.0	0.0	3.256	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43	1114	0.057	64	57	0.1	0.1	3.426	A
2	59	15	43	1153	0.051	59	64	0.0	0.1	3.291	A
3	29	7	73	1102	0.026	29	30	0.0	0.0	3.352	A
4	21	5	79	862	0.024	21	22	0.0	0.0	4.277	A
5	35	9	65	1129	0.031	35	35	0.0	0.0	3.290	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53	1109	0.070	78	69	0.1	0.1	3.490	A
2	73	18	53	1148	0.063	73	78	0.1	0.1	3.347	A
3	35	9	89	1094	0.032	35	36	0.0	0.0	3.400	A
4	25	6	97	854	0.030	25	28	0.0	0.0	4.342	A
5	43	11	79	1121	0.038	43	43	0.0	0.0	3.337	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	78	20	53	1109	0.070	78	69	0.1	0.1	3.490	A
2	73	18	53	1148	0.063	73	78	0.1	0.1	3.347	A
3	35	9	89	1094	0.032	35	36	0.0	0.0	3.400	A
4	25	6	97	854	0.030	25	28	0.0	0.0	4.342	A
5	43	11	79	1121	0.038	43	43	0.0	0.0	3.337	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	64	16	43	1114	0.057	64	57	0.1	0.1	3.429	A
2	59	15	43	1153	0.051	59	64	0.1	0.1	3.291	A
3	29	7	73	1102	0.026	29	30	0.0	0.0	3.352	A

4	21	5	79	862	0.024	21	22	0.0	0.0	4.278	A
5	35	9	65	1129	0.031	35	35	0.0	0.0	3.290	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	53	13	36	1118	0.048	53	47	0.1	0.1	3.381	A
2	50	12	36	1157	0.043	50	53	0.1	0.0	3.251	A
3	24	6	61	1109	0.022	24	25	0.0	0.0	3.321	A
4	17	4	66	868	0.020	17	19	0.0	0.0	4.234	A
5	29	7	54	1134	0.026	29	29	0.0	0.0	3.257	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

### 23:00 - 23:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.03	0.03	0.25	0.45	0.48			N/A	N/A

### 23:15 - 23:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.03	0.26	0.47	0.49			N/A	N/A
2	0.07	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.04	0.03	0.25	0.45	0.48			N/A	N/A

### 23:30 - 23:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.08	0.00	0.00	0.08	0.08			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.04	0.00	0.00	0.04	0.04			N/A	N/A

### 23:45 - 00:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

00:00 - 00:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

## 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	393.13	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-29	Arm 4

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	775	100.000
2		ONE HOUR	✓	900	100.000
3		ONE HOUR	✓	453	100.000
4		ONE HOUR	✓	355	100.000
5		ONE HOUR	✓	496	100.000

## Origin-Destination Data



## Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	66	134	189	386
	2	253	15	35	173	424
	3	291	53	0	7	102
	4	218	127	8	0	2
	5	70	343	80	3	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.06	140.15	35.2	85.0	F	711	1067
2	1.35	707.32	160.7	200.0	F	826	1239
3	1.11	253.59	33.1	69.7	F	416	624
4	1.38	847.95	70.8	133.7	F	326	489
5	0.76	20.25	3.0	14.9	C	455	683

### Main Results for each time segment

#### 07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	467	896	0.651	576	614	0.0	1.8	11.022	B
2	678	169	595	859	0.789	664	448	0.0	3.4	17.418	C
3	341	85	1068	573	0.595	335	191	0.0	1.4	14.824	B
4	267	67	1128	402	0.664	260	276	0.0	1.8	24.205	C
5	373	93	711	789	0.474	370	677	0.0	0.9	8.530	A

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	697	174	551	853	0.817	688	709	1.8	4.0	20.782	C
2	809	202	710	798	1.014	760	529	3.4	15.8	60.368	F
3	407	102	1243	480	0.849	395	227	1.4	4.4	38.271	E

4	319	80	1316	320	0.998	292	323	1.8	8.6	88.957	F
5	446	111	817	733	0.608	443	791	0.9	1.5	12.333	B

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	636	809	1.055	783	741	4.0	21.6	73.923	F
2	991	248	813	743	1.334	741	606	15.8	78.3	241.422	F
3	499	125	1296	452	1.105	438	258	4.4	19.6	119.938	F
4	391	98	1391	287	1.362	285	343	8.6	35.2	303.756	F
5	546	137	836	722	0.756	541	839	1.5	2.9	19.231	C

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	853	213	640	807	1.058	799	743	21.6	35.2	140.150	F
2	991	248	828	735	1.349	734	611	78.3	142.4	548.994	F
3	499	125	1302	449	1.112	445	261	19.6	33.1	231.730	F
4	391	98	1400	283	1.382	282	346	35.2	62.3	638.749	F
5	546	137	837	722	0.756	546	846	2.9	3.0	20.250	C

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	697	174	559	849	0.821	813	722	35.2	6.2	93.361	F
2	809	202	826	736	1.099	736	546	142.4	160.7	707.317	F
3	407	102	1313	443	0.920	430	248	33.1	27.5	253.585	F
4	319	80	1394	286	1.117	285	349	62.3	70.8	846.272	F
5	446	111	829	726	0.614	451	850	3.0	1.6	13.329	B

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	583	146	498	880	0.663	600	748	6.2	2.0	13.545	B
2	678	169	618	847	0.800	841	479	160.7	119.8	600.958	F
3	341	85	1256	473	0.721	438	204	27.5	3.3	119.904	F
4	267	67	1377	293	0.912	289	317	70.8	65.3	847.949	F
5	373	93	870	704	0.530	375	795	1.6	1.2	11.004	B

### Queue Variation Results for each time segment

#### 07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.80	0.32	1.08	2.91	3.65			N/A	N/A
2	3.40	0.03	0.34	6.94	18.29			N/A	N/A
3	1.41	0.09	1.09	2.77	3.71			N/A	N/A
4	1.83	0.03	0.26	1.83	1.83			N/A	N/A
5	0.88	0.55	1.00	1.40	1.45			N/A	N/A

#### 08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	3.98	0.08	1.17	10.45	15.24			N/A	N/A
2	15.79	0.32	8.60	39.32	53.63			N/A	N/A
3	4.37	0.14	2.05	10.49	14.39			N/A	N/A

4	8.65	0.04	0.40	21.91	47.31			N/A	N/A
5	1.50	0.08	1.10	3.03	4.16			N/A	N/A

#### 08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	21.58	2.52	17.00	43.25	53.65			N/A	N/A
2	78.27	39.78	74.80	113.15	125.96			N/A	N/A
3	19.59	3.75	16.44	36.12	43.58			N/A	N/A
4	35.18	3.28	26.89	73.79	92.86			N/A	N/A
5	2.86	0.03	0.32	4.99	14.92			N/A	N/A

#### 08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	35.23	5.22	28.69	69.17	84.98			N/A	N/A
2	142.39	>199	>199	>199	>199			N/A	N/A
3	33.08	8.22	28.86	58.65	69.65			N/A	N/A
4	62.30	20.17	56.49	104.45	121.64			N/A	N/A
5	2.97	0.03	0.29	2.97	10.78			N/A	N/A

#### 08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	6.19	0.06	0.95	17.91	29.77			N/A	N/A
2	160.70	>199	>199	>199	>199			N/A	N/A
3	27.48	6.89	23.95	48.43	57.45			N/A	N/A
4	70.76	25.10	64.93	115.73	133.71			N/A	N/A
5	1.65	0.05	0.49	4.27	6.72			N/A	N/A

#### 09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.04	0.03	0.30	2.04	8.94			N/A	N/A
2	119.75	61.03	114.68	173.51	193.16			N/A	N/A
3	3.31	0.04	0.36	8.02	17.69			N/A	N/A
4	65.31	18.98	58.42	112.81	132.62			N/A	N/A
5	1.16	0.04	0.41	2.91	4.88			N/A	N/A

## 2023LG, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	421.56	F

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-33	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1080	100.000
2		ONE HOUR	✓	739	100.000
3		ONE HOUR	✓	401	100.000
4		ONE HOUR	✓	298	100.000
5		ONE HOUR	✓	514	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	3	402	351	264	60
	2	146	3	55	155	380
	3	267	48	0	11	75
	4	161	125	8	0	4
	5	65	359	83	6	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	1.53	1118.18	278.7	278.7	F	991	1487
2	0.95	55.60	11.8	57.0	F	678	1017
3	0.72	20.52	2.4	11.0	C	368	552
4	0.75	32.56	2.8	14.3	D	273	410
5	0.78	22.38	3.4	16.8	C	472	707

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	472	893	0.910	784	478	0.0	7.2	28.112	D
2	556	139	566	875	0.636	550	691	0.0	1.7	10.862	B
3	302	75	751	741	0.407	299	364	0.0	0.7	8.092	A
4	224	56	731	576	0.389	222	320	0.0	0.6	10.087	B
5	387	97	567	864	0.448	384	386	0.0	0.8	7.442	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	566	845	1.149	835	573	7.2	41.1	119.525	F
2	664	166	612	850	0.782	658	790	1.7	3.3	18.155	C
3	360	90	868	679	0.531	359	402	0.7	1.1	11.172	B
4	268	67	870	516	0.520	266	357	0.6	1.0	14.339	B
5	462	116	679	805	0.574	460	456	0.8	1.3	10.369	B

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	687	783	1.519	782	693	41.1	142.8	432.902	F
2	814	203	598	858	0.949	788	872	3.3	9.7	41.016	E
3	442	110	974	623	0.709	437	412	1.1	2.3	18.856	C
4	328	82	1036	443	0.741	322	375	1.0	2.6	28.500	D
5	566	141	822	730	0.775	559	536	1.3	3.1	20.186	C

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1189	297	696	778	1.528	778	703	142.8	245.5	870.291	F
2	814	203	596	858	0.948	805	878	9.7	11.8	55.603	F
3	442	110	989	615	0.718	441	413	2.3	2.4	20.519	C
4	328	82	1052	436	0.753	327	378	2.6	2.8	32.557	D
5	566	141	834	724	0.782	565	545	3.1	3.4	22.384	C

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	971	243	579	838	1.158	838	591	245.5	278.7	1118.182	F
2	664	166	616	848	0.784	696	802	11.8	4.0	27.193	D
3	360	90	904	660	0.546	365	407	2.4	1.2	12.394	B
4	268	67	903	501	0.535	274	366	2.8	1.2	16.316	C
5	462	116	700	794	0.582	470	477	3.4	1.4	11.352	B

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	813	203	480	889	0.914	886	488	278.7	260.4	1094.937	F
2	556	139	631	840	0.662	564	735	4.0	2.0	13.394	B
3	302	75	796	718	0.421	304	399	1.2	0.7	8.740	A

4	224	56	752	567	0.396	226	348	1.2	0.7	10.630	B
5	387	97	578	858	0.451	389	400	1.4	0.8	7.714	A

### Queue Variation Results for each time segment

#### 16:45 - 17:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	7.19	0.03	0.28	7.19	12.59			N/A	N/A
2	1.69	0.60	1.15	2.11	2.61			N/A	N/A
3	0.68	0.55	1.00	1.40	1.45			N/A	N/A
4	0.63	0.55	1.00	1.40	1.45			N/A	N/A
5	0.80	0.55	1.00	1.40	1.45			N/A	N/A

#### 17:00 - 17:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	41.09	0.29	18.43	110.31	156.48			N/A	N/A
2	3.29	0.08	1.04	8.35	11.97			N/A	N/A
3	1.10	0.09	0.96	1.89	2.54			N/A	N/A
4	1.05	0.09	0.93	1.79	2.31			N/A	N/A
5	1.31	0.07	0.89	2.79	3.88			N/A	N/A

#### 17:15 - 17:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	142.77	>199	>199	>199	>199			N/A	N/A
2	9.74	0.10	3.00	26.91	39.75			N/A	N/A
3	2.27	0.03	0.31	2.95	11.00			N/A	N/A
4	2.56	0.03	0.34	5.77	13.65			N/A	N/A
5	3.14	0.03	0.33	6.28	16.81			N/A	N/A

#### 17:30 - 17:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	245.46	>199	>199	>199	>199			N/A	N/A
2	11.80	0.07	1.23	34.65	57.02			N/A	N/A
3	2.43	0.03	0.29	2.43	9.44			N/A	N/A
4	2.81	0.03	0.32	4.42	14.33			N/A	N/A
5	3.37	0.03	0.30	3.37	14.84			N/A	N/A

#### 17:45 - 18:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	278.66	>199	>199	>199	>199			N/A	N/A
2	3.98	0.04	0.44	11.09	20.31			N/A	N/A
3	1.24	0.06	0.71	2.78	3.97			N/A	N/A
4	1.19	0.05	0.48	2.86	4.41			N/A	N/A
5	1.43	0.05	0.48	3.61	5.60			N/A	N/A

#### 18:00 - 18:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	260.36	>199	>199	>199	>199			N/A	N/A
2	2.04	0.03	0.33	4.13	10.77			N/A	N/A
3	0.74	0.04	0.37	1.72	2.87			N/A	N/A
4	0.67	0.03	0.33	1.52	2.92			N/A	N/A
5	0.83	0.03	0.34	1.93	3.83			N/A	N/A

# 2023LG, IP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	19.17	C

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	2	Arm 1

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	686	100.000
2		ONE HOUR	✓	647	100.000
3		ONE HOUR	✓	316	100.000
4		ONE HOUR	✓	221	100.000
5		ONE HOUR	✓	378	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	1	286	227	123	49
	2	234	2	41	101	269
	3	204	49	0	11	52
	4	119	85	10	0	7
	5	55	266	52	5	0

## Vehicle Mix

## Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.87	29.56	5.8	31.5	D	629	944
2	0.79	18.68	3.6	17.8	C	594	891
3	0.51	10.75	1.0	3.7	B	290	435
4	0.50	15.06	1.0	4.2	C	203	304
5	0.55	10.62	1.2	3.4	B	347	520

### Main Results for each time segment

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	351	956	0.540	512	458	0.0	1.2	8.025	A
2	487	122	349	990	0.492	483	514	0.0	1.0	7.050	A
3	238	59	585	830	0.287	236	246	0.0	0.4	6.051	A
4	166	42	643	615	0.271	165	179	0.0	0.4	7.973	A
5	285	71	526	886	0.321	283	282	0.0	0.5	5.950	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	420	920	0.670	613	549	1.2	2.0	11.623	B
2	582	145	418	953	0.610	579	616	1.0	1.5	9.565	A
3	284	71	702	768	0.370	283	295	0.4	0.6	7.421	A
4	199	50	770	559	0.355	198	215	0.4	0.5	9.951	A
5	340	85	631	831	0.409	339	338	0.5	0.7	7.306	A

#### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	514	872	0.866	742	670	2.0	5.4	25.323	D
2	712	178	506	906	0.786	705	749	1.5	3.4	17.255	C
3	348	87	853	687	0.506	346	358	0.6	1.0	10.498	B
4	243	61	938	485	0.501	242	261	0.5	1.0	14.665	B
5	416	104	769	758	0.549	414	411	0.7	1.2	10.416	B

#### 13:30 - 13:45



Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	755	189	516	871	0.867	753	675	5.4	5.8	29.559	D
2	712	178	513	903	0.789	712	757	3.4	3.6	18.678	C
3	348	87	862	683	0.510	348	363	1.0	1.0	10.749	B
4	243	61	946	482	0.505	243	264	1.0	1.0	15.062	C
5	416	104	775	755	0.551	416	415	1.2	1.2	10.619	B

#### 13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	617	154	424	918	0.672	632	556	5.8	2.1	13.169	B
2	582	145	429	947	0.614	589	627	3.6	1.6	10.257	B
3	284	71	716	760	0.374	286	302	1.0	0.6	7.614	A
4	199	50	782	554	0.359	200	220	1.0	0.6	10.231	B
5	340	85	639	827	0.411	342	344	1.2	0.7	7.459	A

#### 14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	354	954	0.541	520	463	2.1	1.2	8.365	A
2	487	122	354	987	0.493	490	521	1.6	1.0	7.272	A
3	238	59	594	825	0.288	239	250	0.6	0.4	6.146	A
4	166	42	650	612	0.272	167	182	0.6	0.4	8.115	A
5	285	71	532	883	0.322	285	285	0.7	0.5	6.037	A

### Queue Variation Results for each time segment

#### 12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.15	0.55	1.03	1.15	1.15			N/A	N/A
2	0.95	0.55	1.00	1.40	1.45			N/A	N/A
3	0.40	0.00	0.00	0.40	0.40			N/A	N/A
4	0.37	0.00	0.00	0.37	0.37			N/A	N/A
5	0.47	0.00	0.00	0.47	0.47			N/A	N/A

#### 13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.96	0.06	0.90	4.90	7.27			N/A	N/A
2	1.52	0.06	0.89	3.52	4.97			N/A	N/A
3	0.58	0.09	0.81	1.36	1.43			N/A	N/A
4	0.54	0.54	1.00	1.40	1.45			N/A	N/A
5	0.68	0.11	0.85	1.37	1.44			N/A	N/A

#### 13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	5.35	0.04	0.43	14.83	28.02			N/A	N/A
2	3.38	0.03	0.33	6.07	17.77			N/A	N/A
3	1.00	0.03	0.26	1.00	1.00			N/A	N/A
4	0.97	0.03	0.27	0.97	1.14			N/A	N/A
5	1.19	0.03	0.27	1.19	1.19			N/A	N/A

#### 13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	5.85	0.03	0.34	11.37	31.45			N/A	N/A
2	3.56	0.03	0.29	3.56	13.52			N/A	N/A
3	1.02	0.03	0.28	1.02	3.65			N/A	N/A
4	1.00	0.03	0.29	1.29	4.25			N/A	N/A
5	1.21	0.03	0.28	1.21	3.36			N/A	N/A

### 13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.13	0.04	0.42	5.78	10.10			N/A	N/A
2	1.63	0.05	0.49	4.20	6.57			N/A	N/A
3	0.60	0.07	0.74	1.35	1.43			N/A	N/A
4	0.57	0.06	0.60	1.32	1.42			N/A	N/A
5	0.71	0.09	0.80	1.39	1.46			N/A	N/A

### 14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.20	0.03	0.32	2.47	6.14			N/A	N/A
2	0.99	0.04	0.35	2.43	4.61			N/A	N/A
3	0.41	0.03	0.34	1.13	1.32			N/A	N/A
4	0.38	0.03	0.33	1.09	1.30			N/A	N/A
5	0.48	0.04	0.41	1.26	1.39			N/A	N/A

## 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.48	A

### Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	900	

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
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1		ONE HOUR	✓	67	100.000
2		ONE HOUR	✓	63	100.000
3		ONE HOUR	✓	31	100.000
4		ONE HOUR	✓	22	100.000
5		ONE HOUR	✓	36	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To				
		1	2	3	4	5
From	1	0	28	22	12	5
	2	23	0	4	10	26
	3	20	5	0	1	5
	4	12	8	1	0	1
	5	5	26	5	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1	2	3	4	5
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.07	3.47	0.1	0.5	A	61	92
2	0.06	3.33	0.1	0.5	A	58	87
3	0.03	3.39	0.0	0.5	A	28	43
4	0.03	4.33	0.0	0.5	A	20	30
5	0.04	3.32	0.0	0.5	A	33	50

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	50	13	34	1119	0.045	50	45	0.0	0.0	3.367	A
2	47	12	34	1158	0.041	47	50	0.0	0.0	3.241	A
3	23	6	57	1111	0.021	23	24	0.0	0.0	3.309	A
4	17	4	63	869	0.019	16	17	0.0	0.0	4.222	A

5	27	7	52	1136	0.024	27	28	0.0	0.0	3.246	A
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### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40	1116	0.054	60	54	0.0	0.1	3.410	A
2	57	14	40	1154	0.049	57	60	0.0	0.1	3.278	A
3	28	7	68	1105	0.025	28	29	0.0	0.0	3.341	A
4	20	5	75	864	0.023	20	21	0.0	0.0	4.265	A
5	32	8	62	1130	0.029	32	33	0.0	0.0	3.277	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50	1111	0.066	74	66	0.1	0.1	3.469	A
2	69	17	50	1150	0.060	69	74	0.1	0.1	3.332	A
3	34	9	84	1097	0.031	34	35	0.0	0.0	3.387	A
4	24	6	92	856	0.028	24	25	0.0	0.0	4.326	A
5	40	10	76	1123	0.035	40	41	0.0	0.0	3.322	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	74	18	50	1111	0.066	74	66	0.1	0.1	3.470	A
2	69	17	50	1149	0.060	69	74	0.1	0.1	3.332	A
3	34	9	84	1097	0.031	34	35	0.0	0.0	3.387	A
4	24	6	92	856	0.028	24	25	0.0	0.0	4.326	A
5	40	10	76	1123	0.035	40	41	0.0	0.0	3.322	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	60	15	40	1116	0.054	60	54	0.1	0.1	3.413	A
2	57	14	40	1154	0.049	57	60	0.1	0.1	3.279	A
3	28	7	68	1105	0.025	28	29	0.0	0.0	3.342	A
4	20	5	76	864	0.023	20	21	0.0	0.0	4.265	A
5	32	8	62	1130	0.029	32	33	0.0	0.0	3.280	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	50	13	34	1119	0.045	50	45	0.1	0.0	3.371	A
2	47	12	34	1158	0.041	47	50	0.1	0.0	3.244	A
3	23	6	57	1111	0.021	23	24	0.0	0.0	3.312	A
4	17	4	63	869	0.019	17	17	0.0	0.0	4.224	A
5	27	7	52	1136	0.024	27	28	0.0	0.0	3.249	A

## Queue Variation Results for each time segment

### 22:45 - 23:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A

5	0.02	0.00	0.00	0.02	0.02			N/A	N/A
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**23:00 - 23:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.03	0.25	0.45	0.48			N/A	N/A
2	0.05	0.03	0.25	0.45	0.48			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.02	0.02	0.25	0.45	0.48			N/A	N/A
5	0.03	0.03	0.25	0.45	0.48			N/A	N/A

**23:15 - 23:30**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.03	0.26	0.47	0.49			N/A	N/A
2	0.06	0.03	0.26	0.47	0.49			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.04	0.00	0.00	0.04	0.04			N/A	N/A

**23:30 - 23:45**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.03	0.00	0.00	0.03	0.03			N/A	N/A
5	0.04	0.00	0.00	0.04	0.04			N/A	N/A

**23:45 - 00:00**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.05	0.00	0.00	0.05	0.05			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.03	0.00	0.00	0.03	0.03			N/A	N/A

**00:00 - 00:15**

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.04	0.00	0.00	0.04	0.04			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.02	0.00	0.00	0.02	0.02			N/A	N/A
5	0.02	0.00	0.00	0.02	0.02			N/A	N/A



**Mickledale**

# Junctions 9

## PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896  
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Filename: DDC-DS-J3 A614-mickle temp tm 3 arm.j9

Path: L:\60625845\_A614 MRN DfT responses\08\_Models\Delays During Construction Models

Report generation date: 12/11/2020 10:53:42

- »2023, AM
- »2023, PM
- »2023, IP
- »2023, OP
- »2023LG, AM
- »2023LG, PM
- »2023LG, IP
- »2023LG, OP

### Summary of junction performance

	AM				PM				IP				OP			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
<b>2023</b>																
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	9.89	0.02	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A
<b>2023LG</b>																
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	9.51	0.02	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A	0.0	0.00	0.00	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

### File summary

#### File Description

Title	A614/Mick - TM 3 arms
Location	
Site number	
Date	06/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	NCCADMIN\br18
Description	



## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

## Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023	AM	ONE HOUR	07:45	09:15	15
D2	2023	PM	ONE HOUR	16:45	18:15	15
D3	2023	IP	ONE HOUR	12:45	14:15	15
D4	2023	OP	ONE HOUR	22:45	00:15	15
D5	2023LG	AM	ONE HOUR	07:45	09:15	15
D6	2023LG	PM	ONE HOUR	16:45	18:15	15
D7	2023LG	IP	ONE HOUR	12:45	14:15	15
D8	2023LG	OP	ONE HOUR	22:45	00:15	15

## Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

# 2023, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	A614S		Major
B	Inkersall La		Minor
C	A614N		Major

### Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.50			150.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

### Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.00	150	65

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	616	0.105	0.265	0.167	0.378
1	B-C	731	0.105	0.265	-	-
1	C-B	661	0.239	0.239	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	914	100.000
B		✓	4	100.000
C		✓	1012	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	15	899
	B	2	0	2
	C	1012	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
--------	---------	---------------	-----------------	---------

B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	395	0.000	0	0.0	0.000	A
C-AB	0	496	0.000	0	0.0	0.000	A
C-A	762			762			
A-B	11			11			
A-C	677			677			

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	335	0.000	0	0.0	0.000	A
C-AB	0	464	0.000	0	0.0	0.000	A
C-A	910			910			
A-B	13			13			
A-C	808			808			

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	245	0.000	0	0.0	0.000	A
C-AB	0	420	0.000	0	0.0	0.000	A
C-A	1114			1114			
A-B	17			17			
A-C	990			990			

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	245	0.000	0	0.0	0.000	A
C-AB	0	420	0.000	0	0.0	0.000	A
C-A	1114			1114			
A-B	17			17			
A-C	990			990			

### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	335	0.000	0	0.0	0.000	A
C-AB	0	464	0.000	0	0.0	0.000	A
C-A	910			910			
A-B	13			13			
A-C	808			808			

### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
--------	-----------------------	-------------------	-----	---------------------	-----------------	-----------	-------------------------------

B-AC	0	395	0.000	0	0.0	0.000	A
C-AB	0	496	0.000	0	0.0	0.000	A
C-A	762			762			
A-B	11			11			
A-C	677			677			

## 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2023	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	941	100.000
B		✓	2	100.000
C		✓	898	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	937
	B	2	0	0
	C	898	0	0

## Vehicle Mix

## Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	400	0.000	0	0.0	0.000	A
C-AB	0	491	0.000	0	0.0	0.000	A
C-A	676			676			
A-B	3			3			
A-C	705			705			

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	342	0.000	0	0.0	0.000	A
C-AB	0	458	0.000	0	0.0	0.000	A
C-A	807			807			
A-B	4			4			
A-C	842			842			

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	255	0.000	0	0.0	0.000	A
C-AB	0	413	0.000	0	0.0	0.000	A
C-A	989			989			
A-B	4			4			
A-C	1032			1032			

#### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	255	0.000	0	0.0	0.000	A
C-AB	0	413	0.000	0	0.0	0.000	A
C-A	989			989			

A-B	4			4			
A-C	1032			1032			

#### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	342	0.000	0	0.0	0.000	A
C-AB	0	458	0.000	0	0.0	0.000	A
C-A	807			807			
A-B	4			4			
A-C	842			842			

#### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	400	0.000	0	0.0	0.000	A
C-AB	0	491	0.000	0	0.0	0.000	A
C-A	676			676			
A-B	3			3			
A-C	705			705			

## 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.06	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2023	IP	ONE HOUR	12:45	14:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	612	100.000
B		✓	7	100.000
C		✓	602	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	10	602
	B	5	0	2
	C	602	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	9.89	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	460	0.011	5	0.0	7.907	A
C-AB	0	551	0.000	0	0.0	0.000	A
C-A	453			453			
A-B	8			8			
A-C	453			453			

#### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	424	0.015	6	0.0	8.627	A
C-AB	0	529	0.000	0	0.0	0.000	A
C-A	541			541			
A-B	9			9			
A-C	541			541			

#### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
--------	-----------------------	-------------------	-----	---------------------	-----------------	-----------	-------------------------------

B-AC	8	372	0.021	8	0.0	9.889	A
C-AB	0	500	0.000	0	0.0	0.000	A
C-A	663			663			
A-B	11			11			
A-C	663			663			

### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	372	0.021	8	0.0	9.889	A
C-AB	0	500	0.000	0	0.0	0.000	A
C-A	663			663			
A-B	11			11			
A-C	663			663			

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	424	0.015	6	0.0	8.628	A
C-AB	0	529	0.000	0	0.0	0.000	A
C-A	541			541			
A-B	9			9			
A-C	541			541			

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	460	0.011	5	0.0	7.911	A
C-AB	0	551	0.000	0	0.0	0.000	A
C-A	453			453			
A-B	8			8			
A-C	453			453			

# 2023, OP

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2023	OP	ONE HOUR	22:45	00:15	15



Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	60	100.000
B		✓	1	100.000
C		✓	59	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	59	1
	B	1	0	0
	C	59	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	659	0.000	0	0.0	0.000	A
C-AB	0	650	0.000	0	0.0	0.000	A
C-A	44			44			
A-B	44			44			
A-C	0.75			0.75			

### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	657	0.000	0	0.0	0.000	A
C-AB	0	648	0.000	0	0.0	0.000	A
C-A	53			53			
A-B	53			53			
A-C	0.90			0.90			

### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	655	0.000	0	0.0	0.000	A
C-AB	0	645	0.000	0	0.0	0.000	A
C-A	65			65			
A-B	65			65			
A-C	1			1			

### 23:30 - 23:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	655	0.000	0	0.0	0.000	A
C-AB	0	645	0.000	0	0.0	0.000	A
C-A	65			65			
A-B	65			65			
A-C	1			1			

### 23:45 - 00:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	657	0.000	0	0.0	0.000	A
C-AB	0	648	0.000	0	0.0	0.000	A
C-A	53			53			
A-B	53			53			
A-C	0.90			0.90			

### 00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	659	0.000	0	0.0	0.000	A
C-AB	0	650	0.000	0	0.0	0.000	A
C-A	44			44			
A-B	44			44			
A-C	0.75			0.75			

## 2023LG, AM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2023LG	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	867	100.000
B		✓	4	100.000
C		✓	961	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To		
	A	B	C
A	0	14	853
B	2	0	2
C	961	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A	B	C
A	0	0	0
B	0	0	0
C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

## Main Results for each time segment

### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	410	0.000	0	0.0	0.000	A
C-AB	0	505	0.000	0	0.0	0.000	A
C-A	723			723			
A-B	11			11			
A-C	642			642			

### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	355	0.000	0	0.0	0.000	A
C-AB	0	474	0.000	0	0.0	0.000	A
C-A	864			864			
A-B	13			13			
A-C	767			767			

### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	271	0.000	0	0.0	0.000	A
C-AB	0	432	0.000	0	0.0	0.000	A
C-A	1058			1058			
A-B	15			15			
A-C	939			939			

### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	271	0.000	0	0.0	0.000	A
C-AB	0	432	0.000	0	0.0	0.000	A
C-A	1058			1058			
A-B	15			15			
A-C	939			939			

### 08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	355	0.000	0	0.0	0.000	A
C-AB	0	474	0.000	0	0.0	0.000	A
C-A	864			864			
A-B	13			13			
A-C	767			767			

### 09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	410	0.000	0	0.0	0.000	A
C-AB	0	505	0.000	0	0.0	0.000	A
C-A	723			723			
A-B	11			11			
A-C	642			642			

# 2023LG, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2023LG	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	888	100.000
B		✓	2	100.000
C		✓	847	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	884
	B	2	0	0
	C	847	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

## Main Results for each time segment

### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	416	0.000	0	0.0	0.000	A
C-AB	0	501	0.000	0	0.0	0.000	A
C-A	638			638			
A-B	3			3			
A-C	666			666			

### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	362	0.000	0	0.0	0.000	A
C-AB	0	470	0.000	0	0.0	0.000	A
C-A	761			761			
A-B	4			4			
A-C	795			795			

### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	283	0.000	0	0.0	0.000	A
C-AB	0	427	0.000	0	0.0	0.000	A
C-A	933			933			
A-B	4			4			
A-C	973			973			

### 17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	283	0.000	0	0.0	0.000	A
C-AB	0	427	0.000	0	0.0	0.000	A
C-A	933			933			
A-B	4			4			
A-C	973			973			

### 17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	362	0.000	0	0.0	0.000	A
C-AB	0	470	0.000	0	0.0	0.000	A
C-A	761			761			
A-B	4			4			
A-C	795			795			

### 18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	416	0.000	0	0.0	0.000	A
C-AB	0	501	0.000	0	0.0	0.000	A
C-A	638			638			
A-B	3			3			
A-C	666			666			

## 2023LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.06	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2023LG	IP	ONE HOUR	12:45	14:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	581	100.000
B		✓	7	100.000
C		✓	571	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	10	571
	B	5	0	2
	C	571	0	0

## Vehicle Mix

## Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	9.51	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 12:45 - 13:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	470	0.011	5	0.0	7.744	A
C-AB	0	556	0.000	0	0.0	0.000	A
C-A	430			430			
A-B	8			8			
A-C	430			430			

#### 13:00 - 13:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	435	0.014	6	0.0	8.392	A
C-AB	0	536	0.000	0	0.0	0.000	A
C-A	513			513			
A-B	9			9			
A-C	513			513			

#### 13:15 - 13:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	386	0.020	8	0.0	9.508	A
C-AB	0	508	0.000	0	0.0	0.000	A
C-A	629			629			
A-B	11			11			
A-C	629			629			

#### 13:30 - 13:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	386	0.020	8	0.0	9.508	A
C-AB	0	508	0.000	0	0.0	0.000	A
C-A	629			629			



A-B	11			11			
A-C	629			629			

### 13:45 - 14:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	435	0.014	6	0.0	8.393	A
C-AB	0	536	0.000	0	0.0	0.000	A
C-A	513			513			
A-B	9			9			
A-C	513			513			

### 14:00 - 14:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	470	0.011	5	0.0	7.744	A
C-AB	0	556	0.000	0	0.0	0.000	A
C-A	430			430			
A-B	8			8			
A-C	430			430			

## 2023LG, OP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2023LG	OP	ONE HOUR	22:45	00:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	57	100.000
B		✓	1	100.000
C		✓	56	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	56
	B	1	0	0
	C	56	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 22:45 - 23:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	653	0.000	0	0.0	0.000	A
C-AB	0	651	0.000	0	0.0	0.000	A
C-A	42			42			
A-B	0.75			0.75			
A-C	42			42			

#### 23:00 - 23:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	650	0.000	0	0.0	0.000	A
C-AB	0	649	0.000	0	0.0	0.000	A
C-A	50			50			
A-B	0.90			0.90			
A-C	50			50			

#### 23:15 - 23:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
--------	-----------------------	-------------------	-----	---------------------	-----------------	-----------	-------------------------------

B-AC	0	646	0.000	0	0.0	0.000	A
C-AB	0	646	0.000	0	0.0	0.000	A
C-A	62			62			
A-B	1			1			
A-C	62			62			

23:30 - 23:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	646	0.000	0	0.0	0.000	A
C-AB	0	646	0.000	0	0.0	0.000	A
C-A	62			62			
A-B	1			1			
A-C	62			62			

23:45 - 00:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	650	0.000	0	0.0	0.000	A
C-AB	0	649	0.000	0	0.0	0.000	A
C-A	50			50			
A-B	0.90			0.90			
A-C	50			50			

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	653	0.000	0	0.0	0.000	A
C-AB	0	651	0.000	0	0.0	0.000	A
C-A	42			42			
A-B	0.75			0.75			
A-C	42			42			

# **Lowdham**

**Phase 1 – Junctions 9**

**Phase 2 - LinSig**

# Junctions 9

## ARCADY 9 - Roundabout Module

Version: 9.5.0.6896  
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Filename: DDC-DS-J6 (Lowdham) TM phase 1 20 weeks.j9

Path: L:\60625845\_A614 MRN DfT responses\08\_Models\Delays During Construction Models

Report generation date: 12/11/2020 10:55:18

- » Proposed Layout - 2023, AM
- » Proposed Layout - 2023, PM
- » Proposed Layout - 2023, IP
- » Proposed Layout - 2023, OP
- » Proposed Layout - 2023LG, AM
- » Proposed Layout - 2023LG, PM
- » Proposed Layout - 2023LG, IP
- » Proposed Layout - 2023LG, OP

### Summary of junction performance

	AM					PM					IP					OP				
	Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)	Queue (PCU)	Delay (s)	RF C	LOS	Junction Delay (s)
<b>Proposed Layout - 2023</b>																				
1 - Epperstone By-Pass	392.3	1347.00	1.58	F	847.23	116.0	440.10	1.25	F	737.38	4.1	20.27	0.81	C	20.80	0.1	3.36	0.06	A	2.92
2 - Southwell Road	1.7	14.11	0.64	B		1.6	12.14	0.62	B		0.9	8.52	0.47	A		0.0	3.01	0.03	A	
3 - A6097	296.9	1065.25	1.46	F		463.8	1575.48	1.60	F		9.5	38.58	0.92	E		0.1	3.37	0.07	A	
4 - Nottingham Road	0.6	2.65	0.36	A		0.9	3.41	0.47	A		0.4	2.42	0.30	A		0.0	1.41	0.02	A	
<b>Proposed Layout - 2023LG</b>																				
1 - Epperstone By-Pass	307.4	1063.03	1.48	F	655.94	74.0	246.14	1.15	F	532.97	3.0	15.58	0.76	C	14.54	0.1	3.36	0.06	A	2.84
2 - Southwell Road	1.5	13.04	0.61	B		1.4	11.38	0.59	B		0.8	7.78	0.44	A		0.0	2.99	0.03	A	
3 - A6097	224.9	810.13	1.37	F		355.2	1193.15	1.49	F		5.8	24.82	0.87	C		0.1	3.35	0.07	A	
4 - Nottingham Road	0.5	2.60	0.35	A		0.8	3.29	0.45	A		0.4	2.34	0.28	A		0.0	1.41	0.02	A	

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

### File summary

## File Description

Title	A6097/ A612 rdbt 45/50m ICD - wide A6097/A612 rdbt phase 1 TM
Location	Lowdham
Site number	Junction 11
Date	04/04/2013
Version	
Status	50m ICD
Identifier	
Client	
Jobnumber	90372
Enumerator	T Nichol
Description	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓
D2	2023	PM	ONE HOUR	16:45	18:15	15		✓
D3	2023	IP	ONE HOUR	12:15	13:45	15		✓
D4	2023	OP	ONE HOUR	22:45	00:15	15		✓
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓
D14	2023LG	PM	ONE HOUR	16:45	18:15	15		✓
D15	2023LG	IP	ONE HOUR	12:15	13:45	15		✓
D16	2023LG	OP	ONE HOUR	22:45	00:15	15		✓

## Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed Layout	✓	100.000	100.000

# Proposed Layout - 2023, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D1 - 2023, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	847.23	F

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	Epperstone By-Pass	
2	Southwell Road	
3	A6097	
4	Nottingham Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Epperstone By-Pass	3.50	4.50	5.0	29.0	45.0	35.0	
2 - Southwell Road	3.50	4.50	10.0	43.0	45.0	35.0	
3 - A6097	3.50	4.50	5.0	22.0	45.0	30.0	
4 - Nottingham Road	7.00	10.50	20.0	50.0	50.0	45.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Epperstone By-Pass	0.538	1243
2 - Southwell Road	0.553	1301
3 - A6097	0.541	1251
4 - Nottingham Road	0.798	2737

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D1	2023	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1320	100.000
2 - Southwell Road		ONE HOUR	✓	408	100.000
3 - A6097		ONE HOUR	✓	1214	100.000
4 - Nottingham Road		ONE HOUR	✓	692	100.000

## Origin-Destination Data

## Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	2	175	779	364
	2 - Southwell Road	75	0	74	259
	3 - A6097	792	122	0	300
	4 - Nottingham Road	227	206	258	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	1.58	1347.00	392.3	F	1320	1320
2 - Southwell Road	0.64	14.11	1.7	B	408	408
3 - A6097	1.46	1065.25	296.9	F	1214	1214
4 - Nottingham Road	0.36	2.65	0.6	A	692	692

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1187	297	512	967	1.227	964	883	13.7	69.5	168.640	F
2 - Southwell Road	367	92	1069	711	0.516	365	407	0.7	1.0	10.372	B
3 - A6097	1091	273	567	944	1.156	936	867	9.1	48.0	123.357	F
4 - Nottingham Road	622	156	773	2120	0.293	622	730	0.3	0.4	2.402	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1453	363	603	918	1.583	918	930	69.5	203.4	542.177	F
2 - Southwell Road	449	112	1081	704	0.638	447	440	1.0	1.7	13.841	B
3 - A6097	1337	334	621	914	1.462	914	907	48.0	153.6	405.164	F
4 - Nottingham Road	762	190	772	2121	0.359	761	764	0.4	0.6	2.646	A

#### 08:30 - 08:45



Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1453	363	604	918	1.583	918	930	203.4	337.3	1032.898	F
2 - Southwell Road	449	112	1081	704	0.638	449	440	1.7	1.7	14.106	B
3 - A6097	1337	334	623	913	1.463	913	907	153.6	259.5	808.066	F
4 - Nottingham Road	762	190	772	2121	0.359	762	765	0.6	0.6	2.647	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1187	297	513	967	1.228	967	888	337.3	392.3	1347.001	F
2 - Southwell Road	367	92	1071	709	0.517	369	408	1.7	1.1	10.665	B
3 - A6097	1091	273	571	942	1.159	941	870	259.5	296.9	1065.254	F
4 - Nottingham Road	622	156	778	2116	0.294	623	735	0.6	0.4	2.413	A

## Proposed Layout - 2023, PM

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	737.38	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	963	100.000
2 - Southwell Road		ONE HOUR	✓	436	100.000
3 - A6097		ONE HOUR	✓	1451	100.000
4 - Nottingham Road		ONE HOUR	✓	836	100.000

## Origin-Destination Data

## Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	190	633	139
	2 - Southwell Road	138	0	129	169
	3 - A6097	1005	155	1	290
	4 - Nottingham Road	272	321	243	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	1.25	440.10	116.0	F	884	1325
2 - Southwell Road	0.62	12.14	1.6	B	400	600
3 - A6097	1.60	1575.48	463.8	F	1331	1997
4 - Nottingham Road	0.47	3.41	0.9	A	767	1151

### Main Results for each time segment

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	725	181	533	956	0.758	713	1012	0.0	2.9	14.215	B
2 - Southwell Road	328	82	756	884	0.371	326	490	0.0	0.6	6.425	A
3 - A6097	1092	273	333	1070	1.021	1017	748	0.0	18.9	45.786	E
4 - Nottingham Road	629	157	917	2005	0.314	628	432	0.0	0.5	2.610	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	866	216	618	910	0.951	837	1085	2.9	10.0	39.074	E
2 - Southwell Road	392	98	891	809	0.484	391	564	0.6	0.9	8.575	A
3 - A6097	1304	326	397	1036	1.259	1034	885	18.9	86.6	195.336	F
4 - Nottingham Road	752	188	952	1978	0.380	751	479	0.5	0.6	2.933	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1060	265	728	851	1.246	847	1145	10.0	63.4	168.703	F
2 - Southwell Road	480	120	948	778	0.617	477	627	0.9	1.6	11.886	B
3 - A6097	1598	399	459	1002	1.594	1002	966	86.6	235.5	585.217	F
4 - Nottingham Road	920	230	954	1976	0.466	919	508	0.6	0.9	3.405	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1060	265	729	851	1.246	850	1146	63.4	116.0	381.210	F
2 - Southwell Road	480	120	951	776	0.619	480	628	1.6	1.6	12.143	B
3 - A6097	1598	399	462	1001	1.596	1001	969	235.5	384.7	1100.279	F
4 - Nottingham Road	920	230	954	1976	0.466	920	509	0.9	0.9	3.410	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	866	216	618	910	0.951	902	1084	116.0	106.8	440.103	F
2 - Southwell Road	392	98	944	780	0.503	394	577	1.6	1.0	9.387	A
3 - A6097	1304	326	409	1030	1.267	1029	929	384.7	453.4	1458.341	F
4 - Nottingham Road	752	188	949	1979	0.380	753	489	0.9	0.6	2.938	A

#### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	725	181	538	953	0.761	944	1038	106.8	52.0	305.139	F
2 - Southwell Road	328	82	942	781	0.420	329	540	1.0	0.7	7.994	A
3 - A6097	1092	273	369	1051	1.040	1051	902	453.4	463.8	1575.476	F
4 - Nottingham Road	629	157	946	1982	0.318	630	474	0.6	0.5	2.663	A

## Proposed Layout - 2023, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	20.80	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	683	100.000
2 - Southwell Road		ONE HOUR	✓	346	100.000
3 - A6097		ONE HOUR	✓	857	100.000
4 - Nottingham Road		ONE HOUR	✓	578	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	99	450	133
	2 - Southwell Road	88	1	98	159
	3 - A6097	496	113	3	245
	4 - Nottingham Road	161	185	231	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.81	20.27	4.1	C	627	940
2 - Southwell Road	0.47	8.52	0.9	A	317	476
3 - A6097	0.92	38.58	9.5	E	786	1180
4 - Nottingham Road	0.30	2.42	0.4	A	530	796

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	514	129	401	1027	0.501	510	558	0.0	1.0	6.913	A
2 - Southwell Road	260	65	613	963	0.271	259	298	0.0	0.4	5.105	A

3 - A6097	645	161	287	1096	0.589	640	585	0.0	1.4	7.803	A
4 - Nottingham Road	435	109	524	2319	0.188	434	402	0.0	0.2	1.910	A

### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	614	154	479	985	0.623	612	668	1.0	1.6	9.579	A
2 - Southwell Road	311	78	734	896	0.347	310	357	0.4	0.5	6.143	A
3 - A6097	770	193	343	1065	0.723	766	701	1.4	2.5	11.869	B
4 - Nottingham Road	520	130	628	2236	0.232	519	482	0.2	0.3	2.097	A

### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	752	188	585	928	0.810	743	808	1.6	3.9	18.591	C
2 - Southwell Road	381	95	894	808	0.472	380	434	0.5	0.9	8.384	A
3 - A6097	944	236	419	1024	0.921	921	854	2.5	8.2	29.896	D
4 - Nottingham Road	636	159	756	2133	0.298	636	583	0.3	0.4	2.404	A

### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	752	188	587	927	0.811	751	818	3.9	4.1	20.271	C
2 - Southwell Road	381	95	901	804	0.474	381	437	0.9	0.9	8.515	A
3 - A6097	944	236	421	1023	0.923	938	860	8.2	9.5	38.581	E
4 - Nottingham Road	636	159	769	2123	0.300	636	591	0.4	0.4	2.421	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	614	154	484	982	0.625	623	687	4.1	1.7	10.282	B
2 - Southwell Road	311	78	745	890	0.350	312	363	0.9	0.5	6.247	A
3 - A6097	770	193	347	1063	0.725	797	710	9.5	2.8	14.774	B
4 - Nottingham Road	520	130	651	2218	0.234	520	494	0.4	0.3	2.122	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	514	129	403	1026	0.501	517	565	1.7	1.0	7.111	A
2 - Southwell Road	260	65	619	959	0.272	261	301	0.5	0.4	5.161	A
3 - A6097	645	161	289	1094	0.590	650	591	2.8	1.5	8.206	A
4 - Nottingham Road	435	109	532	2312	0.188	435	407	0.3	0.2	1.917	A

## Proposed Layout - 2023, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	2.92	A

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	67	100.000
2 - Southwell Road		ONE HOUR	✓	35	100.000
3 - A6097		ONE HOUR	✓	83	100.000
4 - Nottingham Road		ONE HOUR	✓	47	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	10	44	13
	2 - Southwell Road	9	0	10	16
	3 - A6097	48	11	0	24
	4 - Nottingham Road	16	8	23	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	1	10	2
	2 - Southwell Road	1	0	1	2
	3 - A6097	10	1	0	2
	4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.06	3.36	0.1	A	61	92
2 - Southwell Road	0.03	3.01	0.0	A	32	48
3 - A6097	0.07	3.37	0.1	A	76	114
4 - Nottingham Road	0.02	1.41	0.0	A	43	65

## Main Results for each time segment

### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	50	13	32	1226	0.041	50	55	0.0	0.0	3.275	A
2 - Southwell Road	26	7	60	1268	0.021	26	22	0.0	0.0	2.940	A
3 - A6097	62	16	29	1235	0.051	62	58	0.0	0.1	3.263	A
4 - Nottingham Road	35	9	51	2696	0.013	35	40	0.0	0.0	1.391	A

### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	60	15	38	1222	0.049	60	66	0.0	0.1	3.312	A
2 - Southwell Road	31	8	72	1262	0.025	31	26	0.0	0.0	2.968	A
3 - A6097	75	19	34	1232	0.061	75	69	0.1	0.1	3.305	A
4 - Nottingham Road	42	11	61	2688	0.016	42	48	0.0	0.0	1.399	A

### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	74	18	46	1218	0.061	74	80	0.1	0.1	3.364	A
2 - Southwell Road	39	10	88	1253	0.031	39	32	0.0	0.0	3.007	A
3 - A6097	91	23	42	1228	0.074	91	85	0.1	0.1	3.366	A
4 - Nottingham Road	52	13	75	2677	0.019	52	58	0.0	0.0	1.410	A

### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	74	18	46	1218	0.061	74	80	0.1	0.1	3.365	A
2 - Southwell Road	39	10	88	1253	0.031	39	32	0.0	0.0	3.007	A
3 - A6097	91	23	42	1228	0.074	91	85	0.1	0.1	3.366	A
4 - Nottingham Road	52	13	75	2677	0.019	52	58	0.0	0.0	1.410	A

### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	60	15	38	1222	0.049	60	66	0.1	0.1	3.312	A
2 - Southwell Road	31	8	72	1262	0.025	31	26	0.0	0.0	2.968	A
3 - A6097	75	19	34	1232	0.061	75	69	0.1	0.1	3.308	A
4 - Nottingham Road	42	11	61	2688	0.016	42	48	0.0	0.0	1.399	A

### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	50	13	32	1226	0.041	50	55	0.1	0.0	3.275	A
2 - Southwell Road	26	7	60	1268	0.021	26	22	0.0	0.0	2.940	A
3 - A6097	62	16	29	1235	0.051	63	58	0.1	0.1	3.265	A
4 - Nottingham Road	35	9	51	2696	0.013	35	40	0.0	0.0	1.394	A

# Proposed Layout - 2023LG, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Sets	D13 - 2023LG, AM	Time results are shown for central hour only. (Model is run for a 90 minute period.)
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	655.94	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Results for central hour only	Run automatically
D13	2023LG	AM	ONE HOUR	07:45	09:15	15	✓	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	1252	100.000
2 - Southwell Road		ONE HOUR	✓	390	100.000
3 - A6097		ONE HOUR	✓	1151	100.000
4 - Nottingham Road		ONE HOUR	✓	668	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	2	166	740	344
	2 - Southwell Road	71	0	74	245
	3 - A6097	751	115	0	285
	4 - Nottingham Road	227	195	245	1

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0



# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	1.48	1063.03	307.4	F	1252	1252
2 - Southwell Road	0.61	13.04	1.5	B	390	390
3 - A6097	1.37	810.13	224.9	F	1151	1151
4 - Nottingham Road	0.35	2.60	0.5	A	668	668

## Main Results for each time segment

### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1126	281	489	979	1.149	970	878	8.3	47.1	116.483	F
2 - Southwell Road	351	88	1063	714	0.491	349	397	0.6	0.9	9.827	A
3 - A6097	1035	259	552	952	1.087	934	860	5.9	31.1	85.380	F
4 - Nottingham Road	601	150	768	2124	0.283	600	718	0.3	0.4	2.362	A

### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1378	345	577	932	1.479	932	931	47.1	158.8	405.804	F
2 - Southwell Road	429	107	1079	705	0.609	427	430	0.9	1.5	12.836	B
3 - A6097	1267	317	605	923	1.372	923	901	31.1	117.3	298.678	F
4 - Nottingham Road	735	184	773	2120	0.347	735	754	0.4	0.5	2.598	A

### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1378	345	578	932	1.479	932	931	158.8	270.5	815.540	F
2 - Southwell Road	429	107	1079	705	0.609	429	430	1.5	1.5	13.038	B
3 - A6097	1267	317	606	922	1.374	922	902	117.3	203.5	625.242	F
4 - Nottingham Road	735	184	774	2120	0.347	735	755	0.5	0.5	2.600	A

### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1126	281	492	978	1.151	978	889	270.5	307.4	1063.030	F
2 - Southwell Road	351	88	1070	710	0.494	353	400	1.5	1.0	10.127	B
3 - A6097	1035	259	557	949	1.090	949	865	203.5	224.9	810.128	F
4 - Nottingham Road	601	150	780	2115	0.284	601	726	0.5	0.4	2.378	A

# Proposed Layout - 2023LG, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

# Junction Network

## Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	532.97	F

## Junction Network Options

Driving side	Lighting
Left	Normal/unknown

# Traffic Demand

## Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2023LG	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	908	100.000
2 - Southwell Road		ONE HOUR	✓	418	100.000
3 - A6097		ONE HOUR	✓	1369	100.000
4 - Nottingham Road		ONE HOUR	✓	803	100.000

# Origin-Destination Data

## Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	178	597	132
	2 - Southwell Road	130	0	129	159
	3 - A6097	948	146	1	274
	4 - Nottingham Road	272	302	229	0

# Vehicle Mix

## Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	0	0	0
	2 - Southwell Road	0	0	0	0
	3 - A6097	0	0	0	0
	4 - Nottingham Road	0	0	0	0

# Results

## Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
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1 - Epperstone By-Pass	1.15	246.14	74.0	F	833	1250
2 - Southwell Road	0.59	11.38	1.4	B	384	575
3 - A6097	1.49	1193.15	355.2	F	1256	1884
4 - Nottingham Road	0.45	3.29	0.8	A	737	1105

## Main Results for each time segment

### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	684	171	505	971	0.704	674	986	0.0	2.3	11.804	B
2 - Southwell Road	315	79	715	906	0.347	313	464	0.0	0.5	6.043	A
3 - A6097	1031	258	315	1080	0.954	988	713	0.0	10.7	31.011	D
4 - Nottingham Road	605	151	888	2028	0.298	603	415	0.0	0.4	2.522	A

### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	816	204	589	926	0.882	801	1082	2.3	6.0	26.206	D
2 - Southwell Road	376	94	851	831	0.452	375	539	0.5	0.8	7.864	A
3 - A6097	1231	308	376	1047	1.175	1041	849	10.7	58.2	131.702	F
4 - Nottingham Road	722	180	950	1979	0.365	721	467	0.4	0.6	2.860	A

### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1000	250	693	870	1.149	859	1143	6.0	41.1	112.551	F
2 - Southwell Road	460	115	943	780	0.590	458	608	0.8	1.4	11.090	B
3 - A6097	1507	377	442	1011	1.491	1011	959	58.2	182.3	435.486	F
4 - Nottingham Road	884	221	952	1977	0.447	883	501	0.6	0.8	3.287	A

### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	1000	250	693	870	1.149	868	1143	41.1	74.0	246.136	F
2 - Southwell Road	460	115	951	776	0.593	460	610	1.4	1.4	11.384	B
3 - A6097	1507	377	445	1010	1.493	1010	966	182.3	306.7	865.036	F
4 - Nottingham Road	884	221	952	1977	0.447	884	503	0.8	0.8	3.291	A

### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	816	204	589	926	0.882	913	1081	74.0	49.8	244.801	F
2 - Southwell Road	376	94	941	781	0.481	378	561	1.4	0.9	8.963	A
3 - A6097	1231	308	395	1037	1.187	1037	924	306.7	355.2	1147.377	F
4 - Nottingham Road	722	180	948	1980	0.365	723	484	0.8	0.6	2.863	A

### 18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	684	171	514	966	0.708	872	1038	49.8	2.7	78.908	F
2 - Southwell Road	315	79	874	818	0.385	316	512	0.9	0.6	7.183	A

3 - A6097	1031	258	346	1063	0.969	1060	844	355.2	347.7	1193.152	F
4 - Nottingham Road	605	151	947	1981	0.305	605	459	0.6	0.4	2.617	A

## Proposed Layout - 2023LG, IP

### Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	14.54	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2023LG	IP	ONE HOUR	12:15	13:45	15	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	648	100.000
2 - Southwell Road		ONE HOUR	✓	332	100.000
3 - A6097		ONE HOUR	✓	813	100.000
4 - Nottingham Road		ONE HOUR	✓	556	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	1	94	427	126
	2 - Southwell Road	83	1	98	150
	3 - A6097	471	107	3	232
	4 - Nottingham Road	161	174	219	2

## Vehicle Mix

## Heavy Vehicle Percentages

	To			
	1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From				
1 - Epperstone By-Pass	0	0	0	0
2 - Southwell Road	0	0	0	0
3 - A6097	0	0	0	0
4 - Nottingham Road	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.76	15.58	3.0	C	595	892
2 - Southwell Road	0.44	7.78	0.8	A	305	457
3 - A6097	0.87	24.82	5.8	C	746	1119
4 - Nottingham Road	0.28	2.34	0.4	A	510	765

### Main Results for each time segment

#### 12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	488	122	380	1038	0.470	484	536	0.0	0.9	6.459	A
2 - Southwell Road	250	62	582	980	0.255	249	282	0.0	0.3	4.916	A
3 - A6097	612	153	272	1104	0.555	607	559	0.0	1.2	7.181	A
4 - Nottingham Road	419	105	498	2340	0.179	418	381	0.0	0.2	1.872	A

#### 12:30 - 12:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	583	146	454	998	0.584	581	642	0.9	1.4	8.576	A
2 - Southwell Road	298	75	698	916	0.326	298	337	0.3	0.5	5.820	A
3 - A6097	731	183	326	1075	0.680	728	670	1.2	2.1	10.274	B
4 - Nottingham Road	500	125	596	2261	0.221	500	457	0.2	0.3	2.043	A

#### 12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	713	178	555	944	0.756	707	780	1.4	2.9	14.830	B
2 - Southwell Road	366	91	851	831	0.440	364	411	0.5	0.8	7.692	A
3 - A6097	895	224	398	1036	0.864	882	818	2.1	5.4	21.704	C
4 - Nottingham Road	612	153	723	2160	0.283	612	556	0.3	0.4	2.325	A

#### 13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	713	178	557	943	0.757	713	787	2.9	3.0	15.584	C
2 - Southwell Road	366	91	856	828	0.441	366	414	0.8	0.8	7.778	A

3 - A6097	895	224	400	1034	0.865	893	822	5.4	5.8	24.824	C
4 - Nottingham Road	612	153	732	2153	0.284	612	561	0.4	0.4	2.336	A

### 13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	583	146	457	997	0.584	589	653	3.0	1.4	8.955	A
2 - Southwell Road	298	75	705	912	0.327	300	341	0.8	0.5	5.890	A
3 - A6097	731	183	328	1073	0.681	745	676	5.8	2.2	11.441	B
4 - Nottingham Road	500	125	609	2251	0.222	500	464	0.4	0.3	2.058	A

### 13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	488	122	382	1037	0.470	490	541	1.4	0.9	6.605	A
2 - Southwell Road	250	62	588	977	0.256	251	284	0.5	0.3	4.961	A
3 - A6097	612	153	274	1102	0.555	616	564	2.2	1.3	7.457	A
4 - Nottingham Road	419	105	504	2335	0.179	419	386	0.3	0.2	1.878	A

## Proposed Layout - 2023LG, OP

### Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Junction 6	Standard Roundabout		1, 2, 3, 4	2.84	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2023LG	OP	ONE HOUR	22:45	00:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Epperstone By-Pass		ONE HOUR	✓	63	100.000
2 - Southwell Road		ONE HOUR	✓	33	100.000
3 - A6097		ONE HOUR	✓	79	100.000
4 - Nottingham Road		ONE HOUR	✓	54	100.000

## Origin-Destination Data

## Demand (PCU/hr)

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	9	42	12
	2 - Southwell Road	8	0	10	15
	3 - A6097	46	10	0	23
	4 - Nottingham Road	16	17	21	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1 - Epperstone By-Pass	2 - Southwell Road	3 - A6097	4 - Nottingham Road
From	1 - Epperstone By-Pass	0	1	10	2
	2 - Southwell Road	1	0	1	2
	3 - A6097	10	1	0	2
	4 - Nottingham Road	1	1	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Epperstone By-Pass	0.06	3.36	0.1	A	58	87
2 - Southwell Road	0.03	2.99	0.0	A	30	45
3 - A6097	0.07	3.35	0.1	A	72	109
4 - Nottingham Road	0.02	1.41	0.0	A	50	74

### Main Results for each time segment

#### 22:45 - 23:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	47	12	36	1223	0.039	47	53	0.0	0.0	3.276	A
2 - Southwell Road	25	6	56	1270	0.020	25	27	0.0	0.0	2.931	A
3 - A6097	59	15	26	1237	0.048	59	55	0.0	0.1	3.252	A
4 - Nottingham Road	41	10	48	2699	0.015	41	38	0.0	0.0	1.387	A

#### 23:00 - 23:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	57	14	43	1219	0.046	57	63	0.0	0.1	3.313	A
2 - Southwell Road	30	7	67	1264	0.023	30	32	0.0	0.0	2.957	A
3 - A6097	71	18	31	1234	0.058	71	66	0.1	0.1	3.292	A
4 - Nottingham Road	49	12	57	2691	0.018	49	45	0.0	0.0	1.395	A

#### 23:15 - 23:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	69	17	53	1214	0.057	69	77	0.1	0.1	3.365	A
2 - Southwell Road	36	9	83	1256	0.029	36	40	0.0	0.0	2.994	A
3 - A6097	87	22	39	1230	0.071	87	80	0.1	0.1	3.349	A
4 - Nottingham Road	59	15	70	2681	0.022	59	55	0.0	0.0	1.407	A

#### 23:30 - 23:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	69	17	53	1214	0.057	69	77	0.1	0.1	3.365	A
2 - Southwell Road	36	9	83	1256	0.029	36	40	0.0	0.0	2.994	A
3 - A6097	87	22	39	1230	0.071	87	80	0.1	0.1	3.349	A
4 - Nottingham Road	59	15	70	2681	0.022	59	55	0.0	0.0	1.407	A

#### 23:45 - 00:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	57	14	43	1219	0.046	57	63	0.1	0.1	3.313	A
2 - Southwell Road	30	7	67	1264	0.023	30	32	0.0	0.0	2.960	A
3 - A6097	71	18	31	1234	0.058	71	66	0.1	0.1	3.293	A
4 - Nottingham Road	49	12	58	2691	0.018	49	45	0.0	0.0	1.398	A

#### 00:00 - 00:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Epperstone By-Pass	47	12	36	1223	0.039	47	53	0.1	0.0	3.277	A
2 - Southwell Road	25	6	56	1270	0.020	25	27	0.0	0.0	2.934	A
3 - A6097	59	15	26	1237	0.048	60	55	0.1	0.1	3.255	A
4 - Nottingham Road	41	10	48	2699	0.015	41	38	0.0	0.0	1.387	A

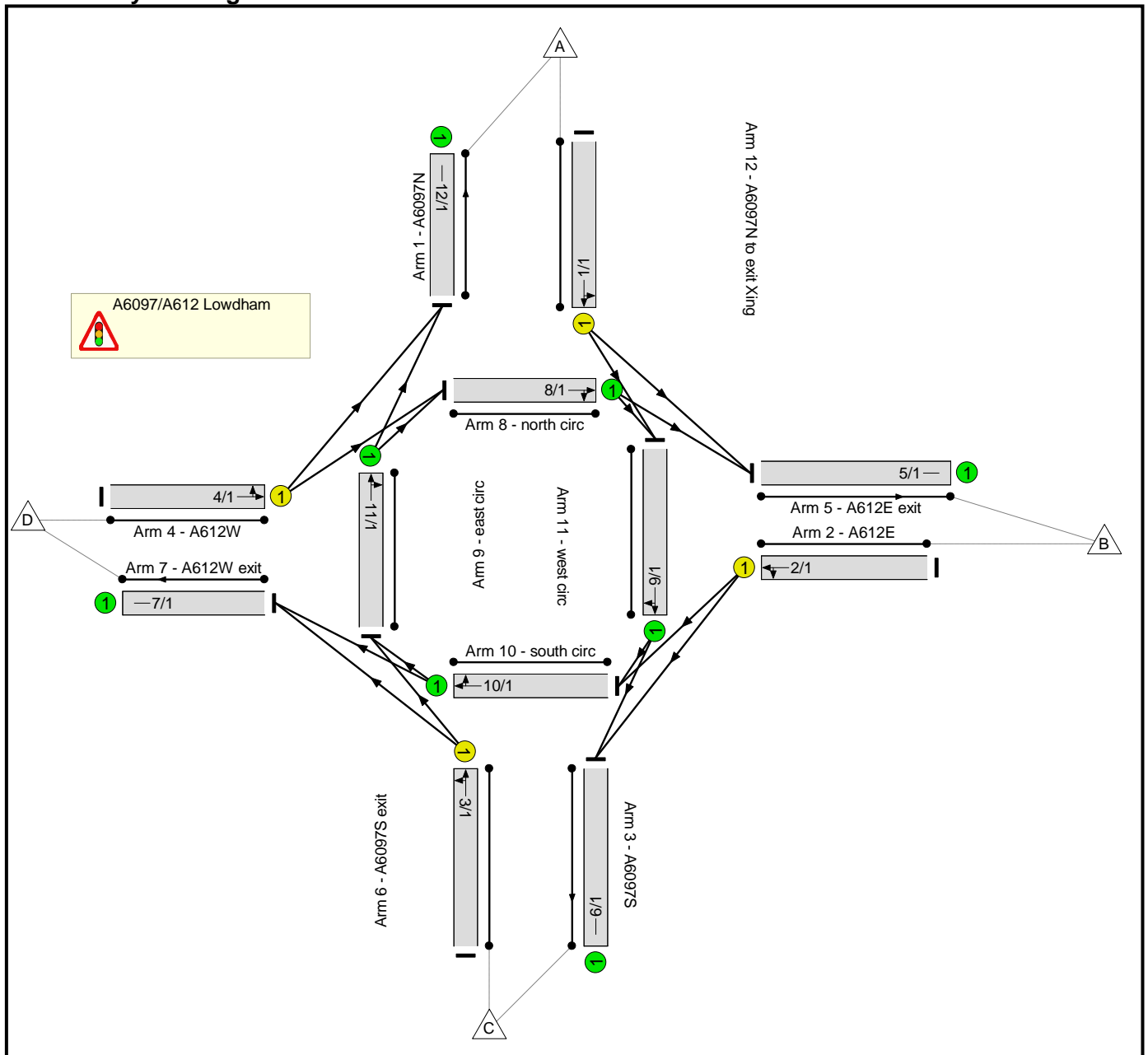


# Full Input Data And Results

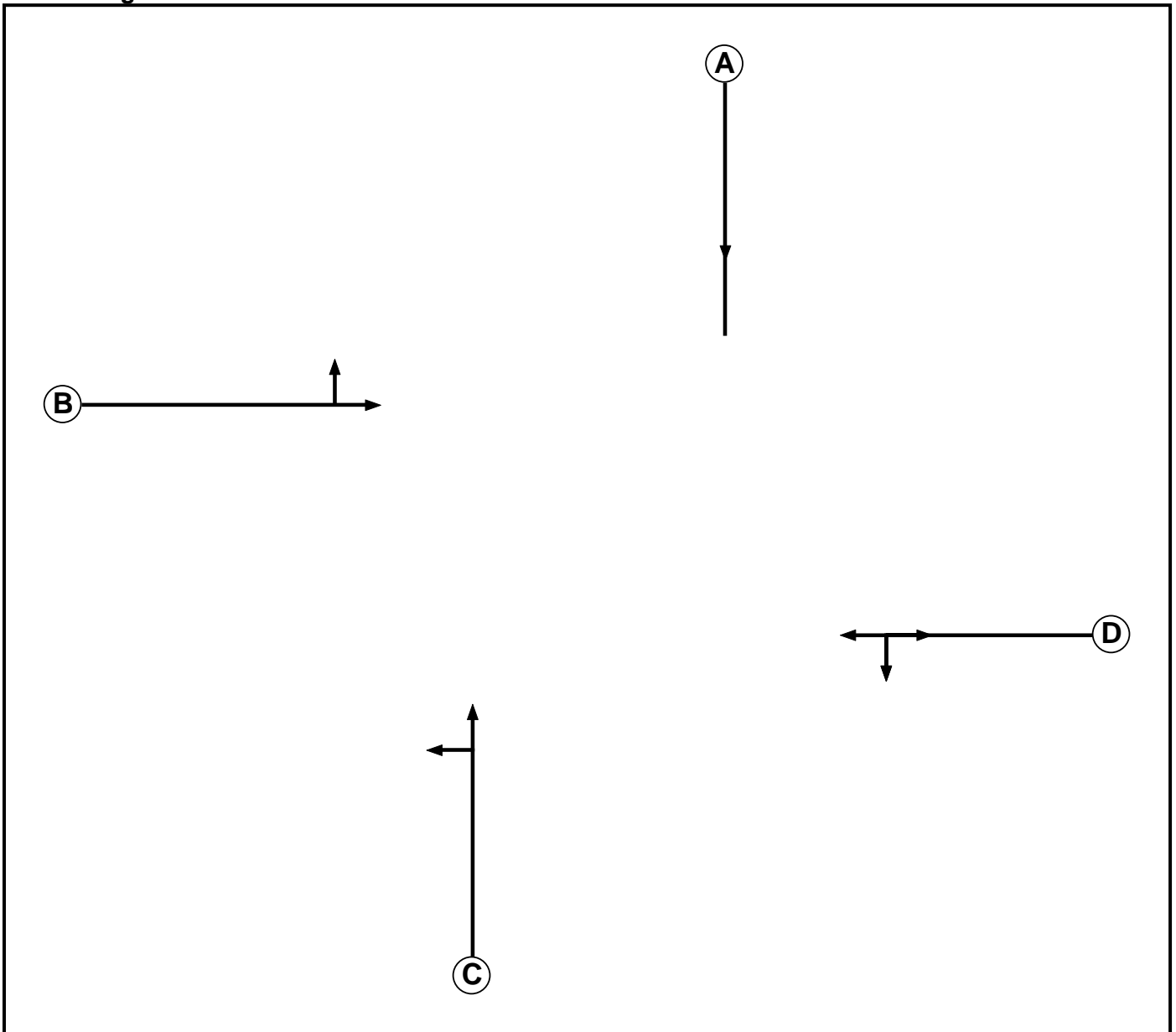
## User and Project Details

Project:	A614
Title:	Lowdhamtm phase 2/3 - submission to tuba
Location:	
Client:	NCC
Additional detail:	
File name:	DDC-DS-J6 a6097-a612 sigs at rdbt phase 2-3 tm.lsg3x
Author:	rr
Company:	via
Address:	tbh

## Network Layout Diagram



## Phase Diagram



## Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7

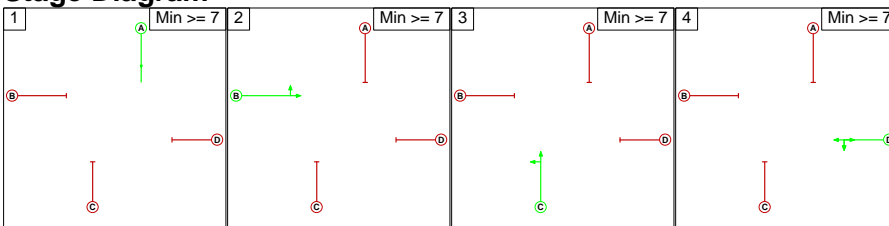
### Phase Intergrens Matrix

		Starting Phase			
		A	B	C	D
Terminating Phase	A	25	12	7	
	B	22	28	24	
	C	10	20	15	
	D	12	22	8	

### Phases in Stage

Stage No.	Phases in Stage
1	A
2	B
3	C
4	D

### Stage Diagram



### Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

### Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1	25	12	7	
	2	22	28	24	
	3	10	20	15	
	4	12	22	8	

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: A6097/A612 Lowdham**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: A6097/A612 Lowdham												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A6097N)	U	D	2	3	60.0	User	1900	-	-	-	-	-
2/1 (A612E)	U	D	2	3	60.0	User	1900	-	-	-	-	-
3/1 (A6097S)	U	C	2	3	60.0	User	1900	-	-	-	-	-
4/1 (A612W)	U	B	2	3	60.0	User	1900	-	-	-	-	-
5/1 (A612E exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (A6097S exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A612W exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (north circ)	U		2	3	60.0	User	1800	-	-	-	-	-
9/1 (east circ)	U		2	3	60.0	User	1800	-	-	-	-	-
10/1 (south circ)	U		2	3	60.0	User	1800	-	-	-	-	-
11/1 (west circ)	U		2	3	60.0	User	1800	-	-	-	-	-
12/1 (A6097N to exit Xing)	U		2	3	60.0	User	1800	-	-	-	-	-

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2023AM'	08:00	09:00	01:00	
2: '2023PM'	17:00	18:00	01:00	
3: '2023IP'	12:30	13:30	01:00	
4: '2023OP'	23:00	00:00	01:00	
5: '2023AM LG'	08:00	09:00	01:00	
6: '2023PM LG'	17:00	18:00	01:00	
7: '2023IP LG'	12:30	13:30	01:00	
8: '2023OP LG'	23:00	00:00	01:00	

## Full Input Data And Results

**Scenario 1: '2023am 60'** (FG1: '2023AM', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

**Desired Flow :**

	Destination					
		A	B	C	D	Tot.
Origin	A	2	175	779	364	1320
	B	75	0	78	259	412
	C	792	122	0	300	1214
	D	240	206	258	1	705
	Tot.	1109	503	1115	924	3651

### Traffic Lane Flows

Lane	Scenario 1: 2023am 60
<b>Junction: A6097/A612 Lowdham</b>	
1/1	1318
2/1	412
3/1	1214
4/1	704
5/1	503
6/1	1115
7/1	923
8/1	586
9/1	1401
10/1	698
11/1	989
12/1	1107

Full Input Data And Results

**Lane Saturation Flows**

Junction: A6097/A612 Lowdham								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

**Scenario 2: '2023pm 60'** (FG2: '2023PM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination					
		A	B	C	D	Tot.	
Origin	A	1	190	633	139	963	
	B	138	0	137	169	444	
	C	1005	155	1	290	1451	
	D	290	321	243	0	854	
	Tot.	1434	666	1014	598	3712	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2023pm 60
<b>Junction: A6097/A612 Lowdham</b>	
1/1	962
2/1	444
3/1	1450
4/1	854
5/1	666
6/1	1013
7/1	598
8/1	719
9/1	1015
10/1	446
11/1	1298
12/1	1433

**Lane Saturation Flows**

<b>Junction: A6097/A612 Lowdham</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800



Full Input Data And Results

Scenario 3: '2023ip 60' (FG3: '2023IP', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	1	99	450	133	683
	B	88	1	104	159	352
	C	496	113	3	245	857
	D	170	185	231	2	588
	Tot.	755	398	788	539	2480

**Traffic Lane Flows**

Lane	Scenario 3: 2023ip 60
<b>Junction: A6097/A612 Lowdham</b>	
1/1	682
2/1	351
3/1	854
4/1	586
5/1	397
6/1	785
7/1	537
8/1	529
9/1	814
10/1	380
11/1	697
12/1	754

Full Input Data And Results

**Lane Saturation Flows**

Junction: A6097/A612 Lowdham								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

**Scenario 4: '2023op 60'** (FG4: '2023OP', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination					
		A	B	C	D	Tot.	
Origin	A	0	10	44	13	67	
	B	9	0	10	16	35	
	C	48	11	0	24	83	
	D	17	18	29	0	64	
	Tot.	74	39	83	53	249	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: 2023op 60
<b>Junction: A6097/A612 Lowdham</b>	
1/1	67
2/1	35
3/1	83
4/1	64
5/1	39
6/1	83
7/1	53
8/1	58
9/1	86
10/1	38
11/1	68
12/1	74

**Lane Saturation Flows**

<b>Junction: A6097/A612 Lowdham</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

Full Input Data And Results

**Scenario 5: '2023am 60 LG'** (FG5: '2023AM LG', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	2	166	740	344	1252
	B	71	0	74	245	390
	C	751	115	0	285	1151
	D	227	195	245	1	668
	Tot.	1051	476	1059	875	3461

**Traffic Lane Flows**

Lane	Scenario 5: 2023am 60 LG
<b>Junction: A6097/A612 Lowdham</b>	
1/1	1250
2/1	390
3/1	1151
4/1	667
5/1	476
6/1	1059
7/1	874
8/1	555
9/1	1329
10/1	660
11/1	937
12/1	1049

Full Input Data And Results

**Lane Saturation Flows**

Junction: A6097/A612 Lowdham								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

**Scenario 6: '2023pm 60 LG'** (FG6: '2023PM LG', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination					
		A	B	C	D	Tot.	
Origin	A	1	178	597	132	908	
	B	130	0	129	159	418	
	C	948	146	1	274	1369	
	D	272	302	229	0	803	
	Tot.	1351	626	956	565	3498	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 6: 2023pm 60 LG
<b>Junction: A6097/A612 Lowdham</b>	
1/1	907
2/1	418
3/1	1368
4/1	803
5/1	626
6/1	955
7/1	565
8/1	677
9/1	958
10/1	421
11/1	1224
12/1	1350

**Lane Saturation Flows**

<b>Junction: A6097/A612 Lowdham</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

Full Input Data And Results

**Scenario 7: '2023ip 60 LG'** (FG7: '2023IP LG', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	94	427	126	647
	B	83	0	98	150	331
	C	471	107	0	232	810
	D	161	174	219	0	554
	Tot.	715	375	744	508	2342

**Traffic Lane Flows**

Lane	Scenario 7: 2023ip 60 LG
<b>Junction: A6097/A612 Lowdham</b>	
1/1	647
2/1	331
3/1	810
4/1	554
5/1	375
6/1	744
7/1	508
8/1	500
9/1	772
10/1	359
11/1	661
12/1	715

Full Input Data And Results

**Lane Saturation Flows**

Junction: A6097/A612 Lowdham								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

**Scenario 8: '2023op 60 LG'** (FG8: '2023OP LG', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination					
		A	B	C	D	Tot.	
Origin	A	0	9	42	12	63	
	B	8	0	10	15	33	
	C	46	10	0	23	79	
	D	16	17	21	0	54	
	Tot.	70	36	73	50	229	



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 8: 2023op 60 LG
<b>Junction: A6097/A612 Lowdham</b>	
1/1	63
2/1	33
3/1	79
4/1	54
5/1	36
6/1	73
7/1	50
8/1	48
9/1	75
10/1	35
11/1	64
12/1	70

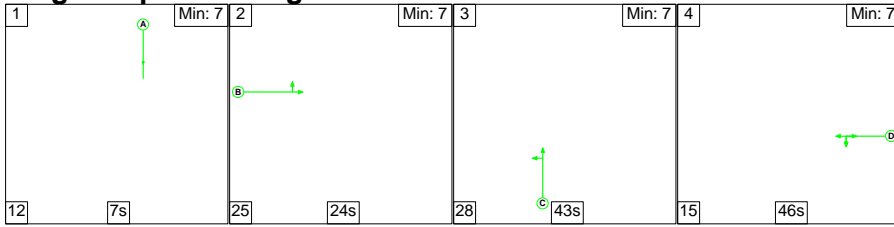
**Lane Saturation Flows**

<b>Junction: A6097/A612 Lowdham</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097N Lane 1)							1900	1900
2/1 (A612E Lane 1)							1900	1900
3/1 (A6097S Lane 1)							1900	1900
4/1 (A612W Lane 1)							1900	1900
5/1 (A612E exit Lane 1)							Inf	Inf
6/1 (A6097S exit Lane 1)							Inf	Inf
7/1 (A612W exit Lane 1)							Inf	Inf
8/1 (north circ Lane 1)							1800	1800
9/1 (east circ Lane 1)							1800	1800
10/1 (south circ Lane 1)							1800	1800
11/1 (west circ Lane 1)							1800	1800
12/1 (A6097N to exit Xing Lane 1)							1800	1800

## Full Input Data And Results

Scenario 1: '2023am 60' (FG1: '2023AM', Plan 1: 'Network Control Plan 1')

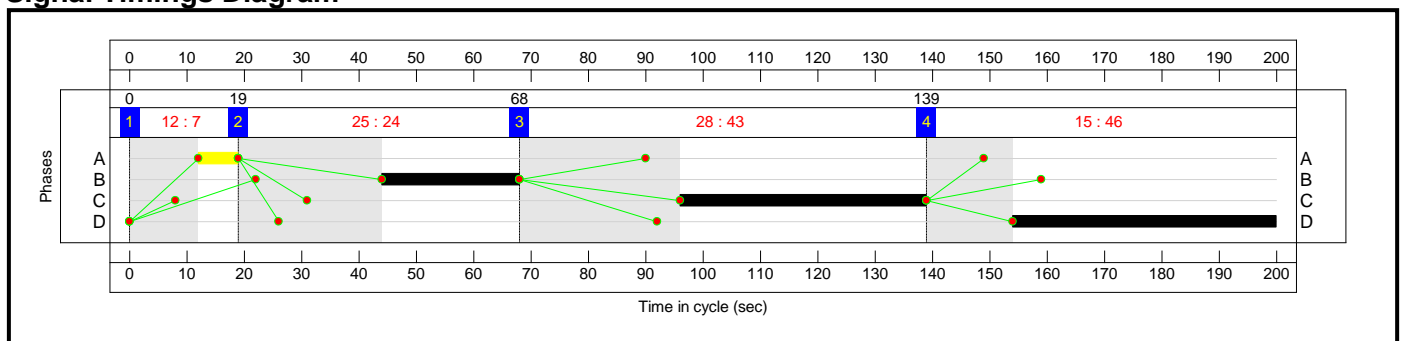
### Stage Sequence Diagram



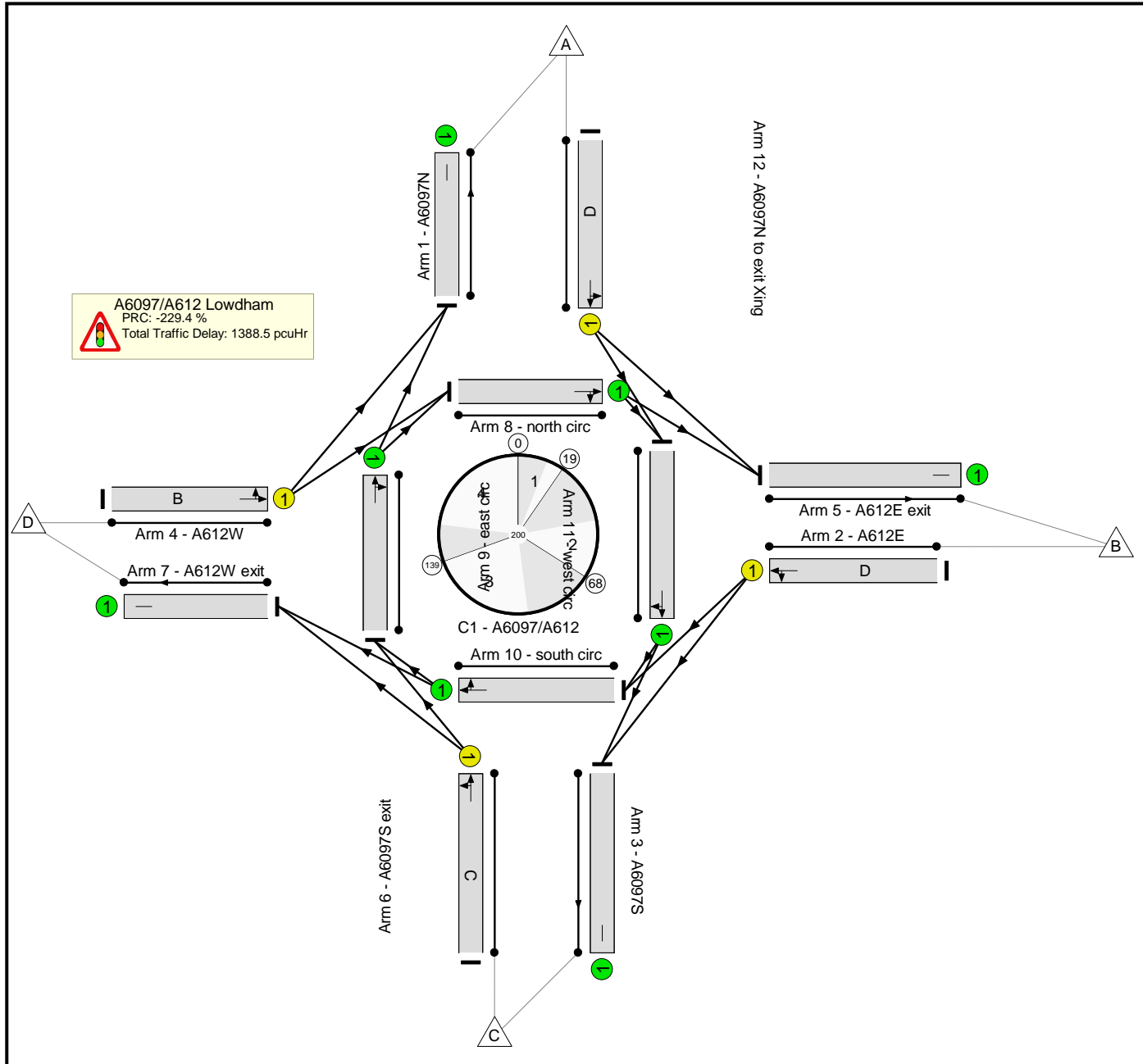
### Stage Timings

Stage	1	2	3	4
Duration	7	24	43	46
Change Point	0	19	68	139

### Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

Network Results

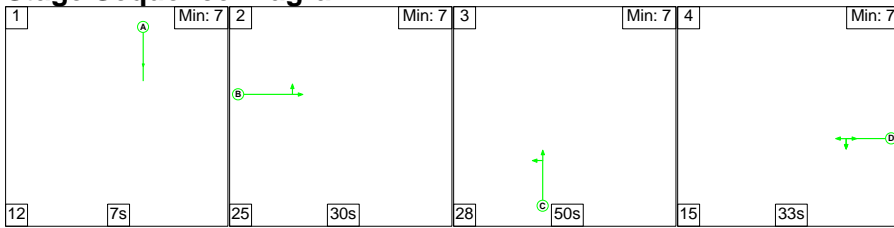
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	296.4%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	296.4%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	46	-	1318	1900	447	295.2%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	46	-	412	1900	447	92.3%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	43	-	1214	1900	418	290.4%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	24	-	704	1900	237	296.4%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	503	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	1115	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	923	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	586	1800	1800	11.0%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	1401	1800	1800	26.3%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	698	1800	1800	25.4%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	989	1800	1800	21.7%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	1107	1800	1800	23.8%



Full Input Data And Results

Scenario 2: '2023pm 60' (FG2: '2023PM', Plan 1: 'Network Control Plan 1')

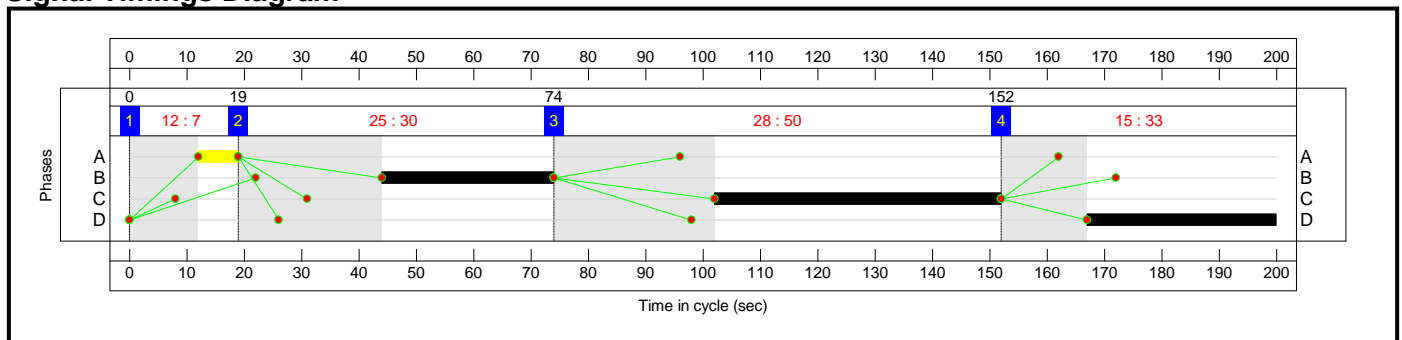
Stage Sequence Diagram



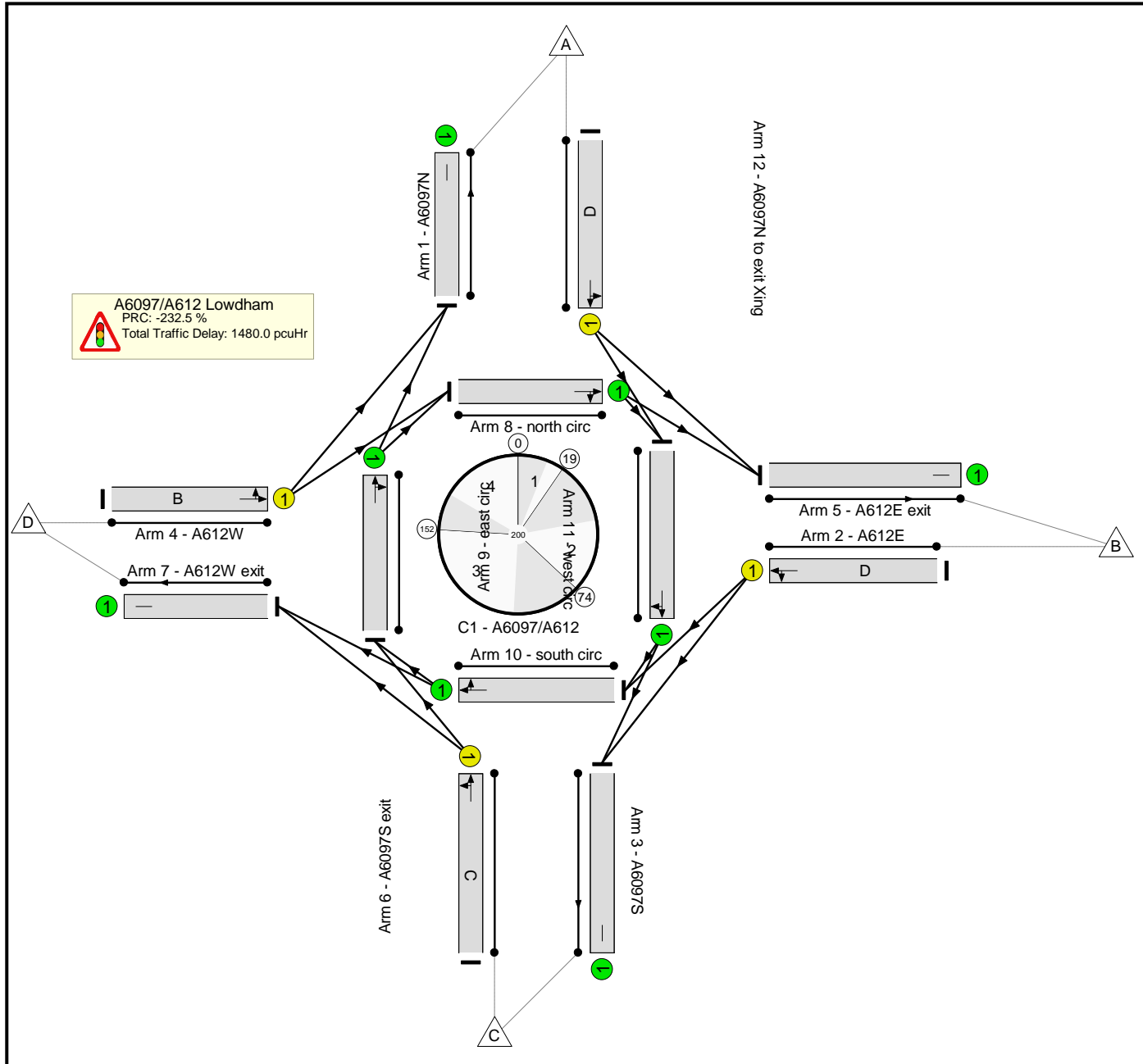
Stage Timings

Stage	1	2	3	4
Duration	7	30	50	33
Change Point	0	19	74	152

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	299.3%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	299.3%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	33	-	962	1900	323	297.8%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	33	-	444	1900	323	137.5%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	50	-	1450	1900	484	299.3%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	30	-	854	1900	295	290.0%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	1013	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	598	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	719	1800	1800	13.7%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	1015	1800	1800	19.1%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	446	1800	1800	15.0%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	1298	1800	1800	27.1%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	1433	1800	1800	29.8%

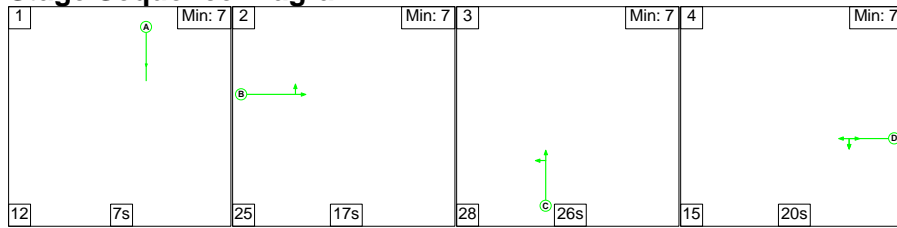




Full Input Data And Results

Scenario 3: '2023ip 60' (FG3: '2023IP', Plan 1: 'Network Control Plan 1')

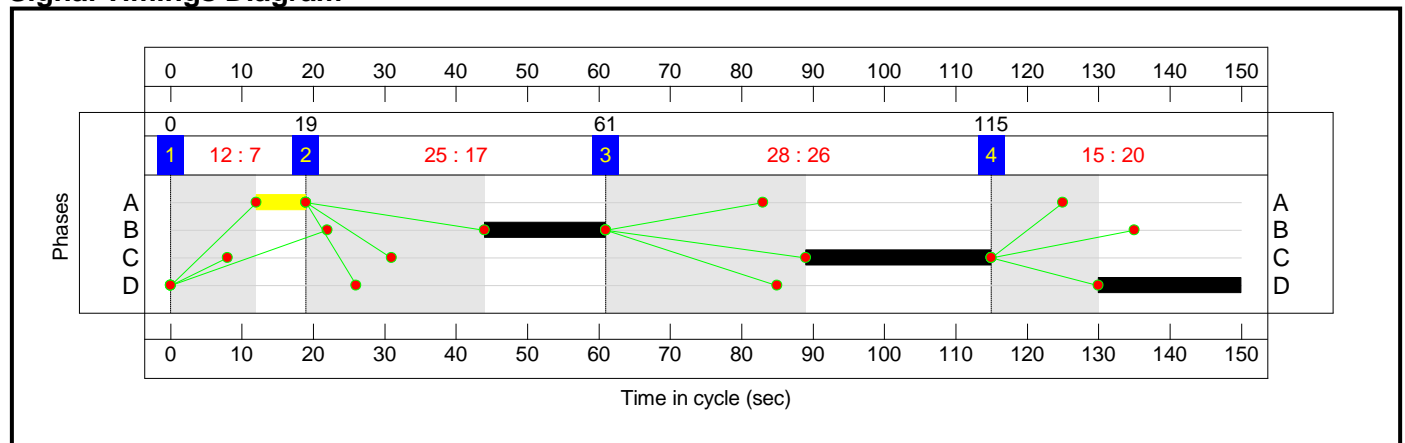
Stage Sequence Diagram



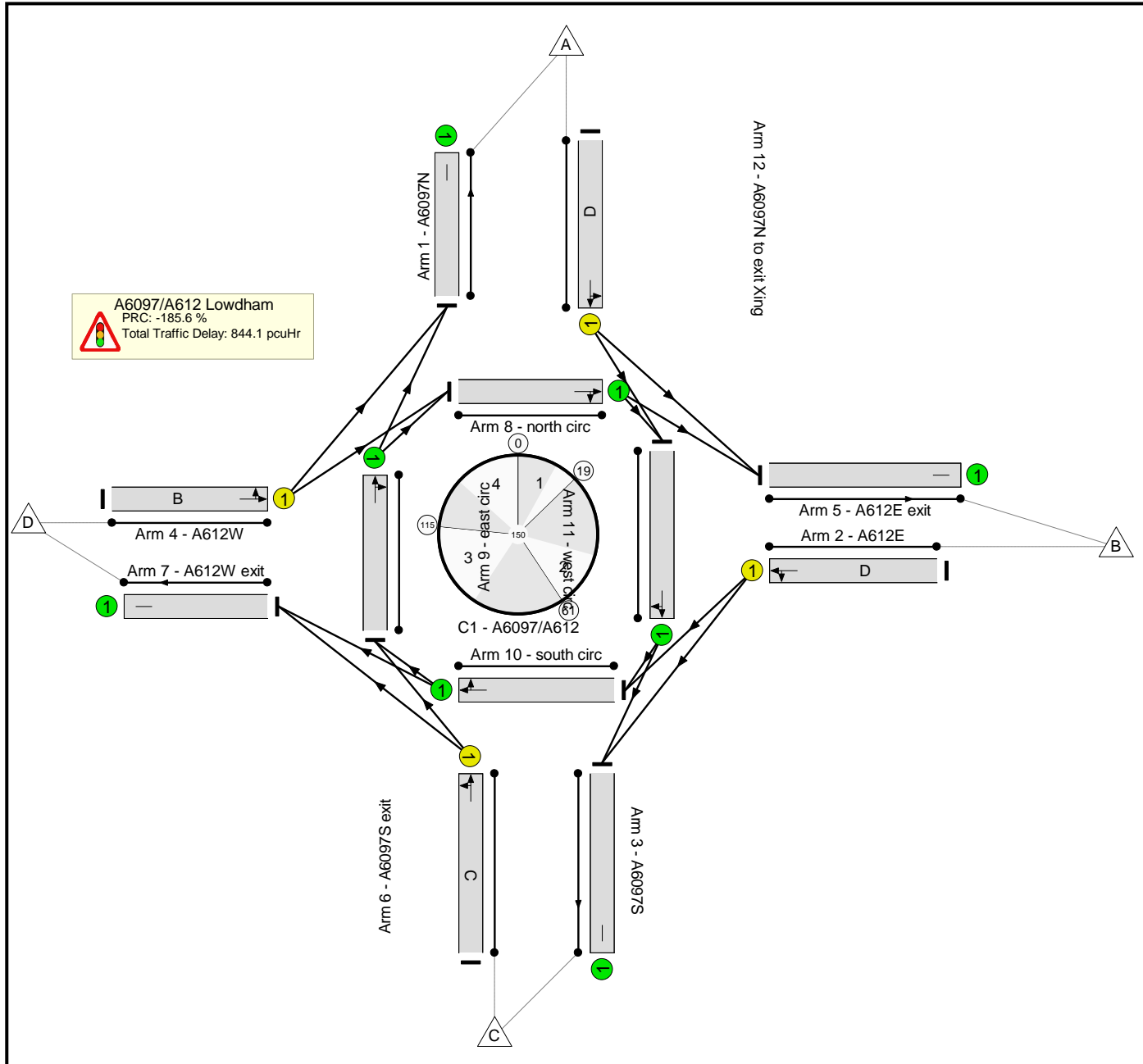
Stage Timings

Stage	1	2	3	4
Duration	7	17	26	20
Change Point	0	19	61	115

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

Network Results

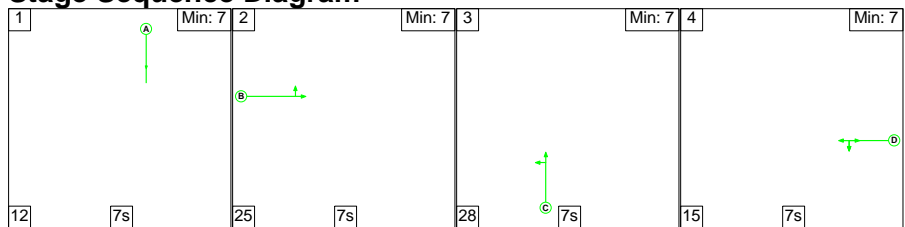
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	257.0%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	257.0%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	20	-	682	1900	266	256.4%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	20	-	351	1900	266	132.0%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	26	-	854	1900	342	249.7%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	17	-	586	1900	228	257.0%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	397	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	785	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	537	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	529	1800	1800	11.5%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	814	1800	1800	17.6%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	380	1800	1800	13.3%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	697	1800	1800	17.3%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	754	1800	1800	18.4%



Full Input Data And Results

Scenario 4: '2023op 60' (FG4: '2023OP', Plan 1: 'Network Control Plan 1')

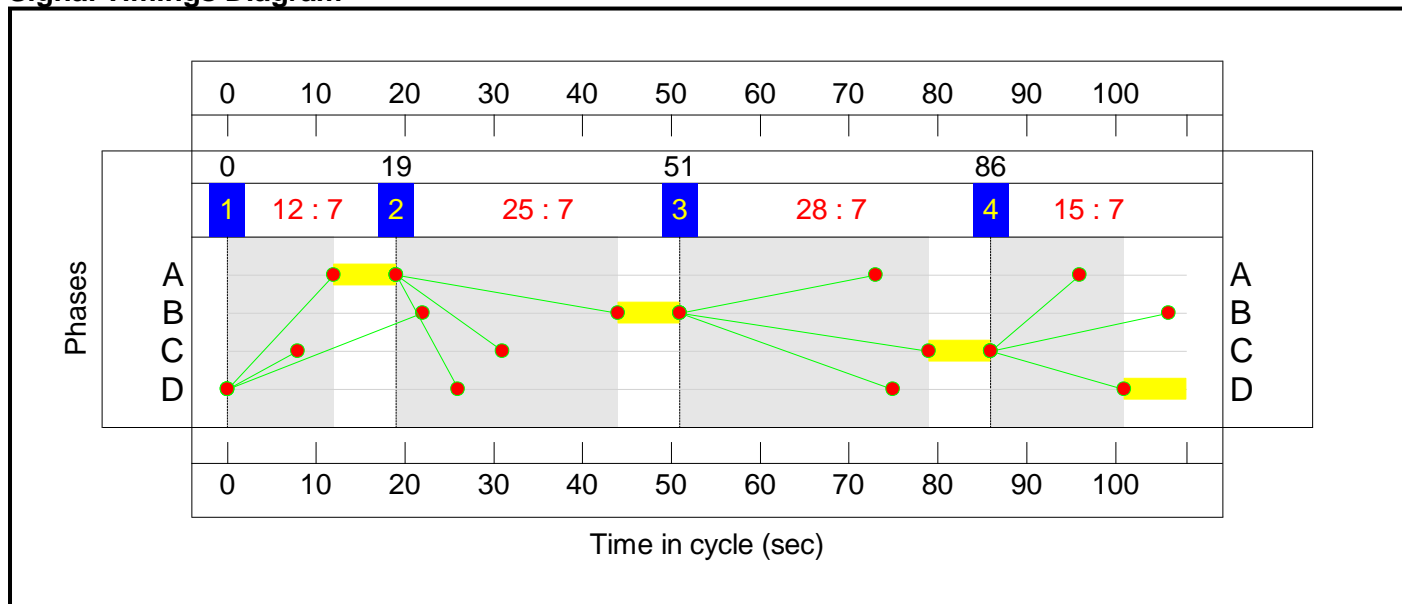
Stage Sequence Diagram



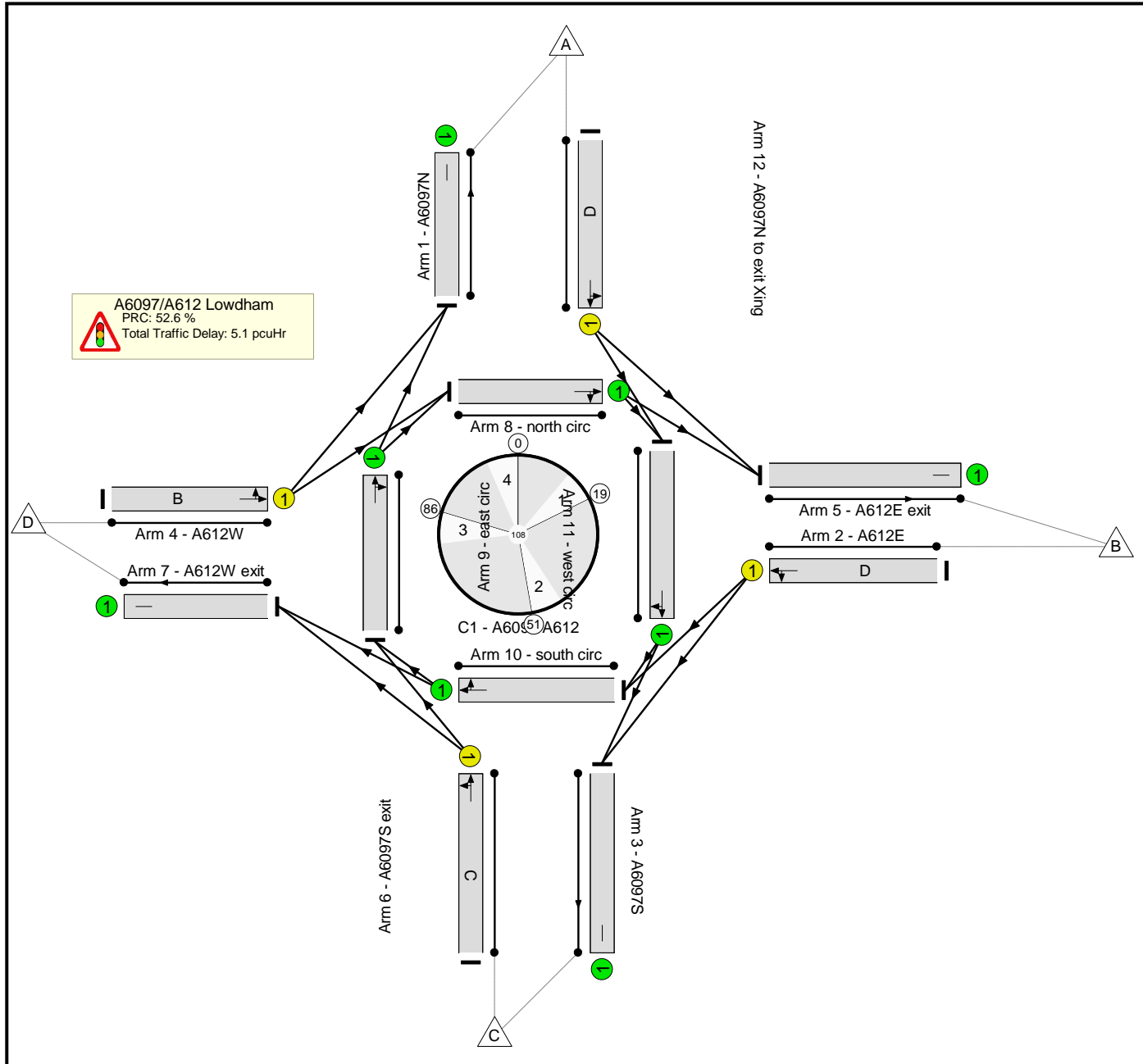
Stage Timings

Stage	1	2	3	4
Duration	7	7	7	7
Change Point	0	19	51	86

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	59.0%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	59.0%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	7	-	67	1900	141	47.6%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	7	-	35	1900	141	24.9%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	7	-	83	1900	141	59.0%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	7	-	64	1900	141	45.5%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	39	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	83	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	53	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	58	1800	1800	3.2%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	86	1800	1800	4.8%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	38	1800	1800	2.1%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	68	1800	1800	3.8%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	74	1800	1800	4.1%



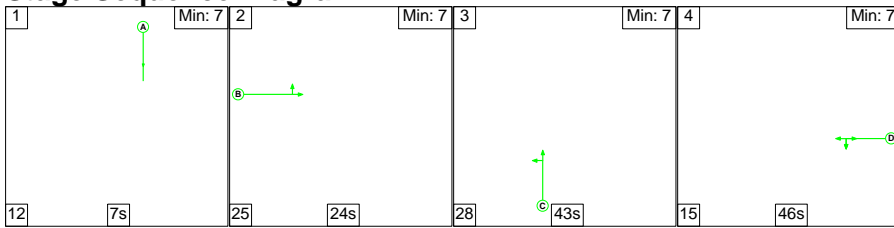
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Lowdhamtm phase 2/3 - submission to tuba	-	-	0	0	0	3.3	1.8	0.0	5.1	-	-	-	-
A6097/A612 Lowdham	-	-	0	0	0	3.3	1.8	0.0	5.1	-	-	-	-
1/1	67	67	-	-	-	0.9	0.4	-	1.3	72.1	1.9	0.4	2.4
2/1	35	35	-	-	-	0.5	0.2	-	0.6	64.2	1.0	0.2	1.1
3/1	83	83	-	-	-	1.1	0.7	-	1.8	78.9	2.4	0.7	3.1
4/1	64	64	-	-	-	0.9	0.4	-	1.3	71.1	1.8	0.4	2.2
5/1	39	39	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	83	83	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	53	53	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	58	58	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
9/1	86	86	-	-	-	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0
10/1	38	38	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
11/1	68	68	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
12/1	74	74	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
C1 - A6097/A612      PRC for Signalled Lanes (%): 52.6      Total Delay for Signalled Lanes (pcuHr): 5.05      Cycle Time (s): 108 PRC Over All Lanes (%): 52.6      Total Delay Over All Lanes(pcuHr): 5.14													

Full Input Data And Results

Scenario 5: '2023am 60 LG' (FG5: '2023AM LG', Plan 1: 'Network Control Plan 1')

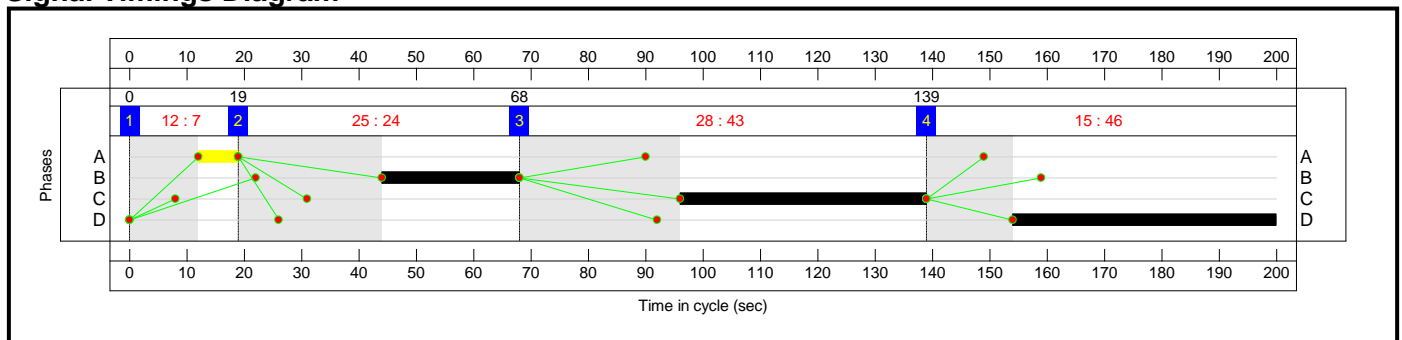
Stage Sequence Diagram



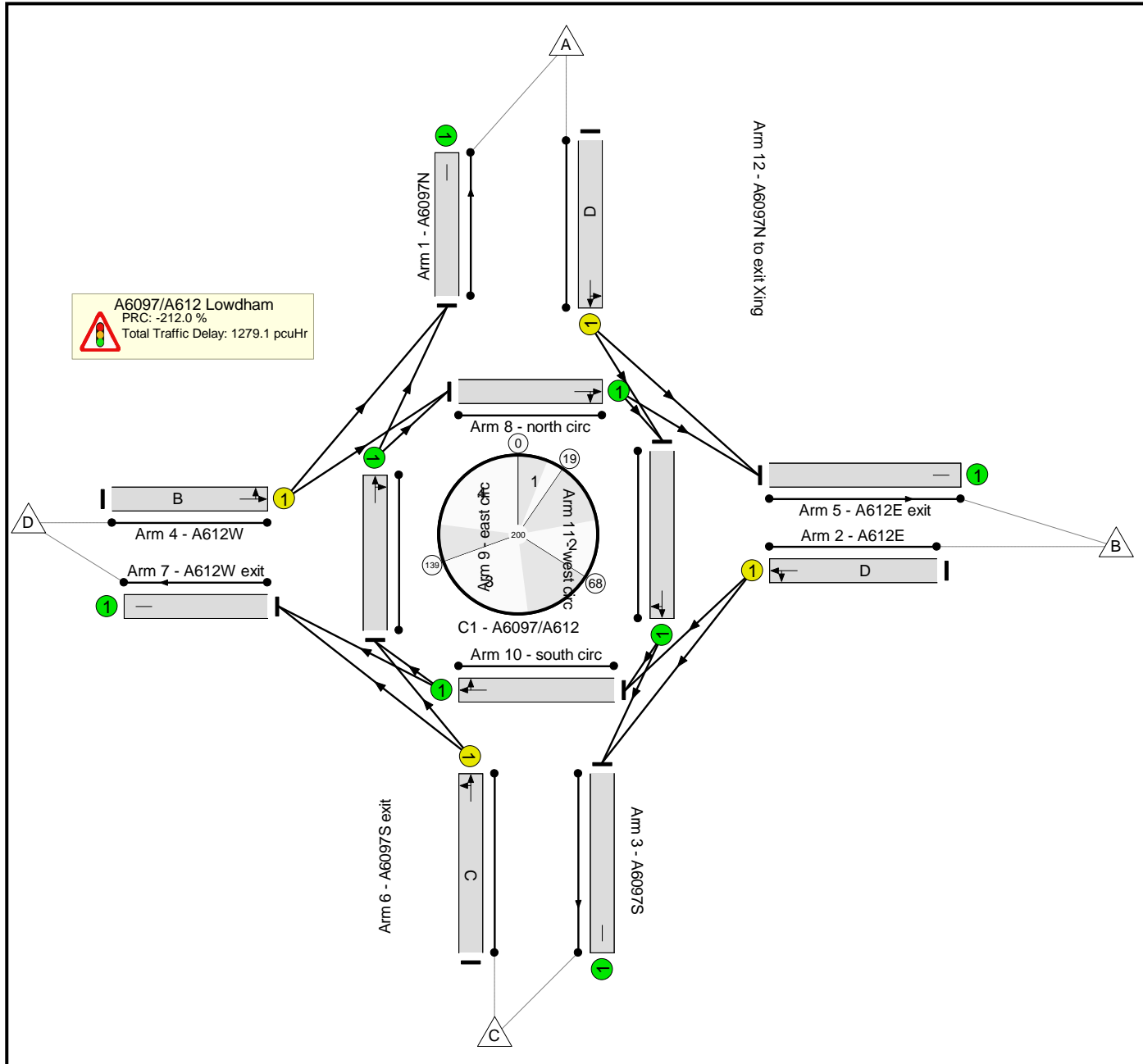
Stage Timings

Stage	1	2	3	4
Duration	7	24	43	46
Change Point	0	19	68	139

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

Network Results

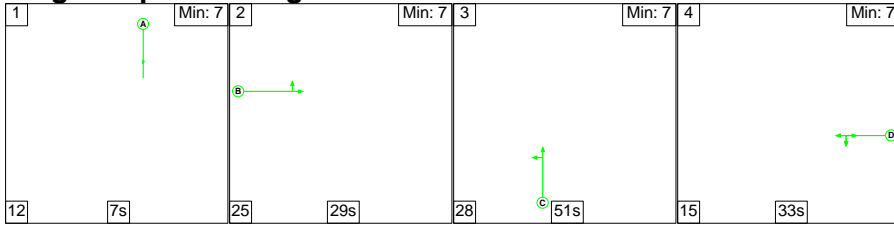
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	280.8%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	280.8%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	46	-	1250	1900	447	280.0%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	46	-	390	1900	447	87.3%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	43	-	1151	1900	418	275.4%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	24	-	667	1900	237	280.8%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	476	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	1059	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	874	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	555	1800	1800	11.0%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	1329	1800	1800	26.4%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	660	1800	1800	24.4%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	937	1800	1800	21.4%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	1049	1800	1800	23.6%



Full Input Data And Results

Scenario 6: '2023pm 60 LG' (FG6: '2023PM LG', Plan 1: 'Network Control Plan 1')

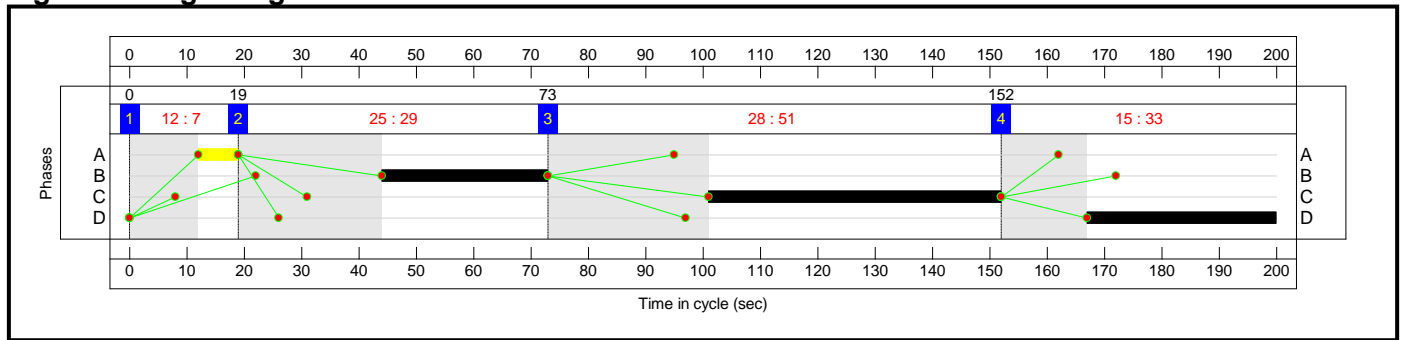
Stage Sequence Diagram



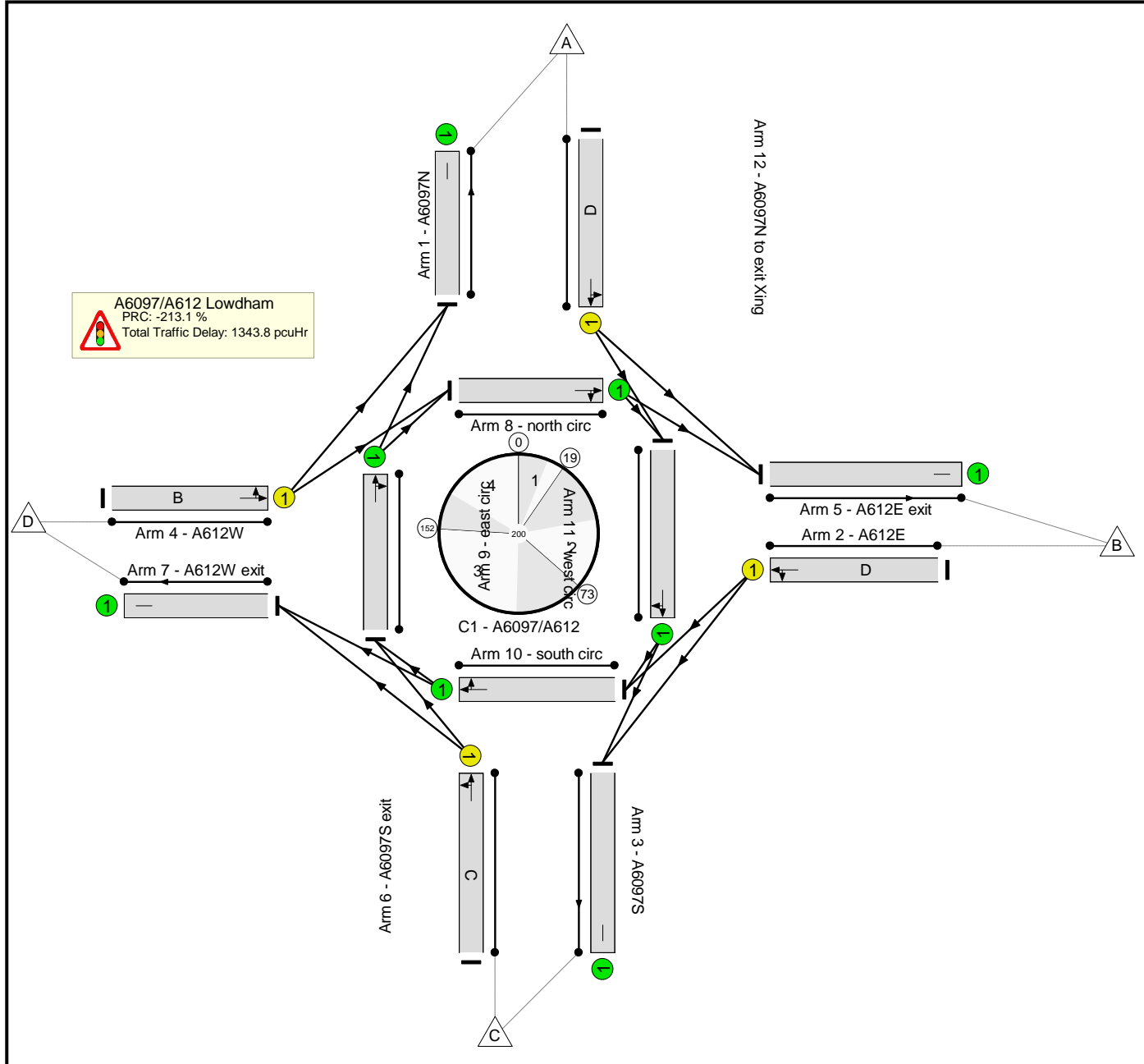
Stage Timings

Stage	1	2	3	4
Duration	7	29	51	33
Change Point	0	19	73	152

Signal Timings Diagram



Full Input Data And Results  
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	281.8%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	281.8%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	33	-	907	1900	323	280.8%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	33	-	418	1900	323	129.4%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	51	-	1368	1900	494	276.9%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	29	-	803	1900	285	281.8%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	626	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	955	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	565	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	677	1800	1800	13.4%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	958	1800	1800	18.9%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	421	1800	1800	15.0%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	1224	1800	1800	27.5%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	1350	1800	1800	30.0%

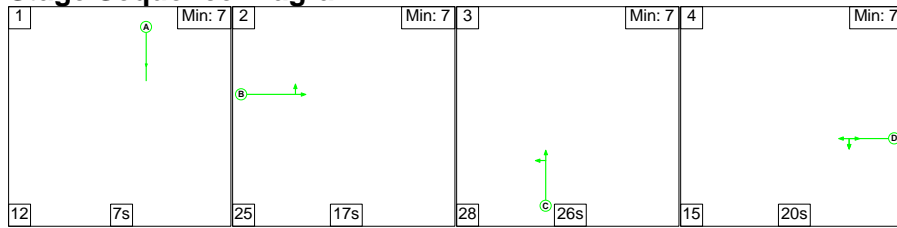




Full Input Data And Results

Scenario 7: '2023ip 60 LG' (FG7: '2023IP LG', Plan 1: 'Network Control Plan 1')

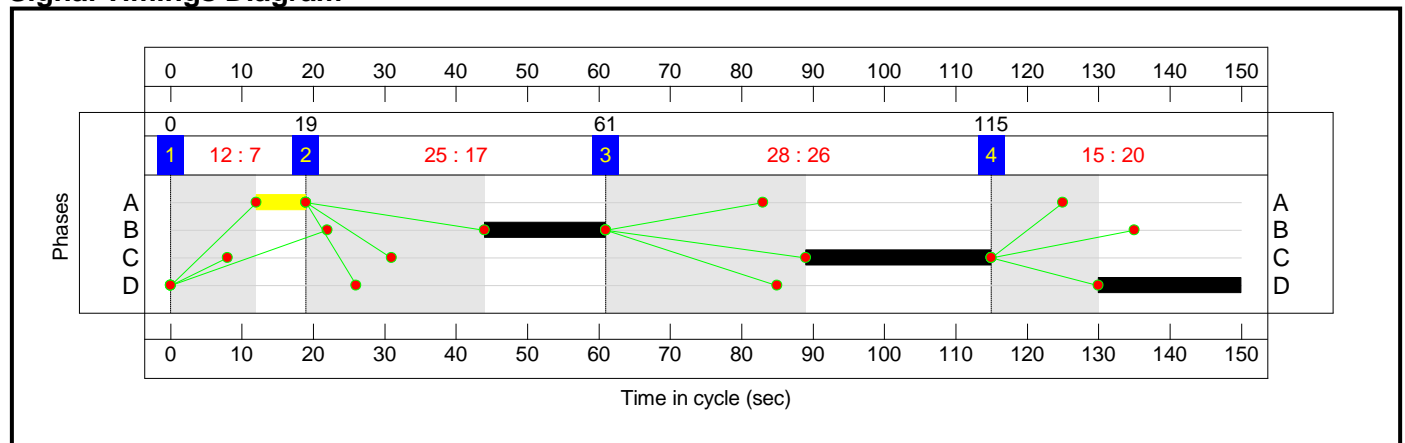
Stage Sequence Diagram



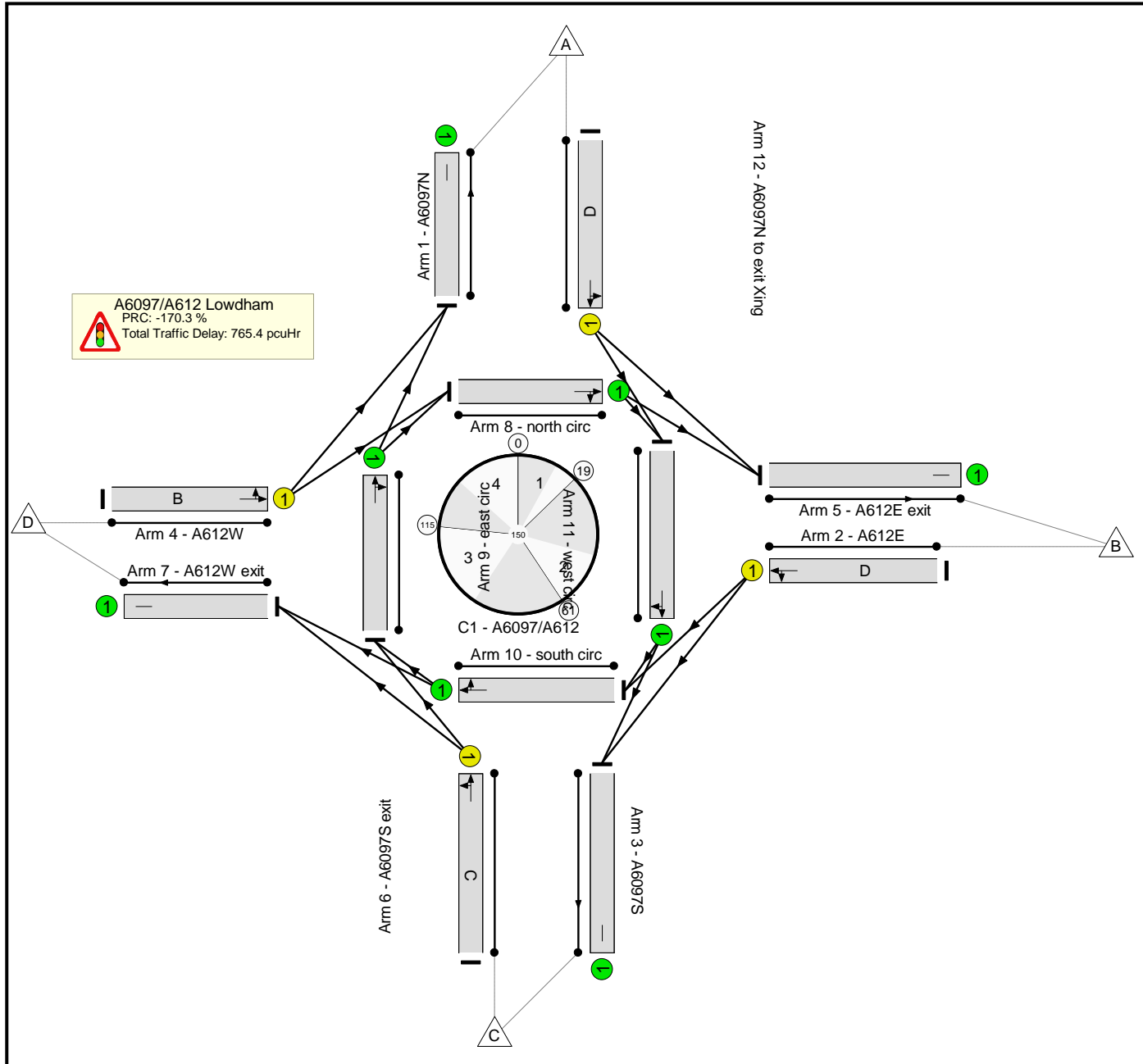
Stage Timings

Stage	1	2	3	4
Duration	7	17	26	20
Change Point	0	19	61	115

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

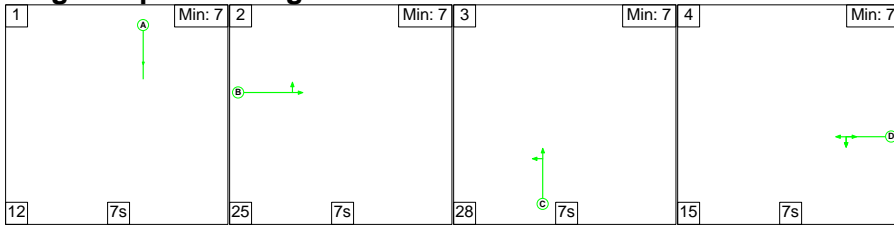
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network: Lowdhamtm phase 2/3 - submission to tuba</b>	-	-	N/A	-	-		-	-	-	-	-	-	243.2%
<b>A6097/A612 Lowdham</b>	-	-	N/A	-	-		-	-	-	-	-	-	243.2%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	20	-	647	1900	266	243.2%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	20	-	331	1900	266	124.4%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	26	-	810	1900	342	236.8%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	17	-	554	1900	228	243.0%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	375	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	744	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	508	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	500	1800	1800	11.5%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	772	1800	1800	17.6%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	359	1800	1800	13.3%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	661	1800	1800	17.3%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	715	1800	1800	18.4%



**Scenario 8: '2023op 60 LG' (FG8: '2023OP LG', Plan 1: 'Network Control Plan 1')**

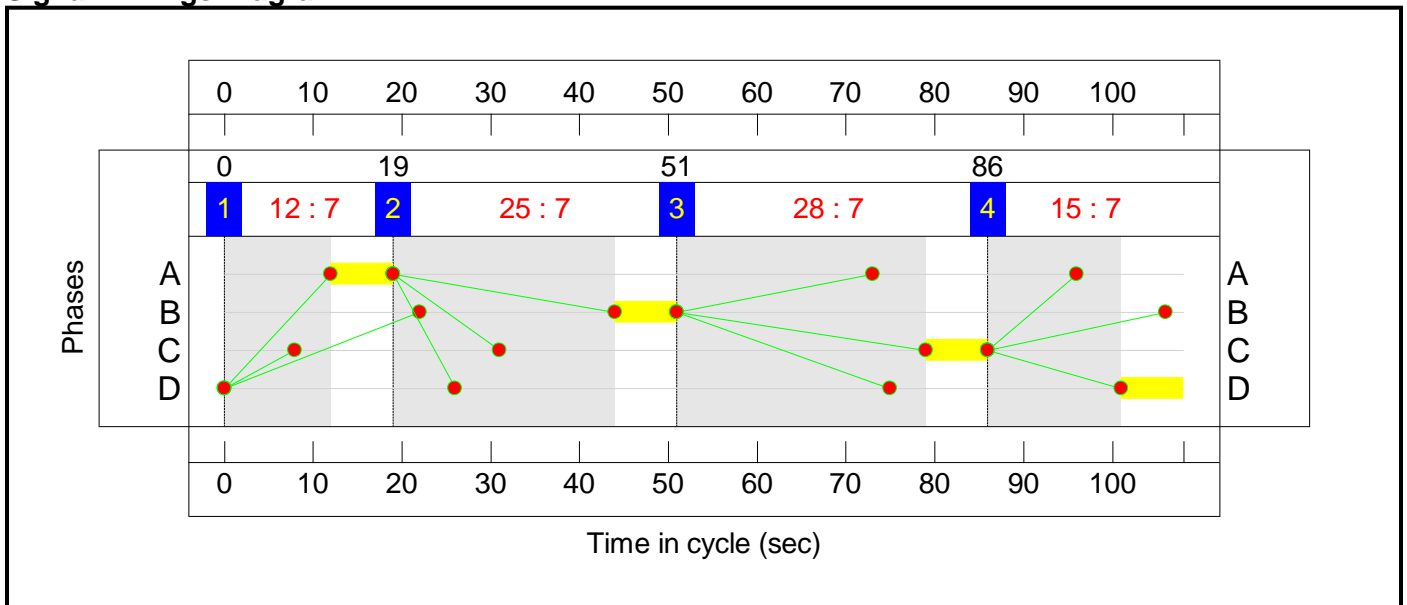
**Stage Sequence Diagram**



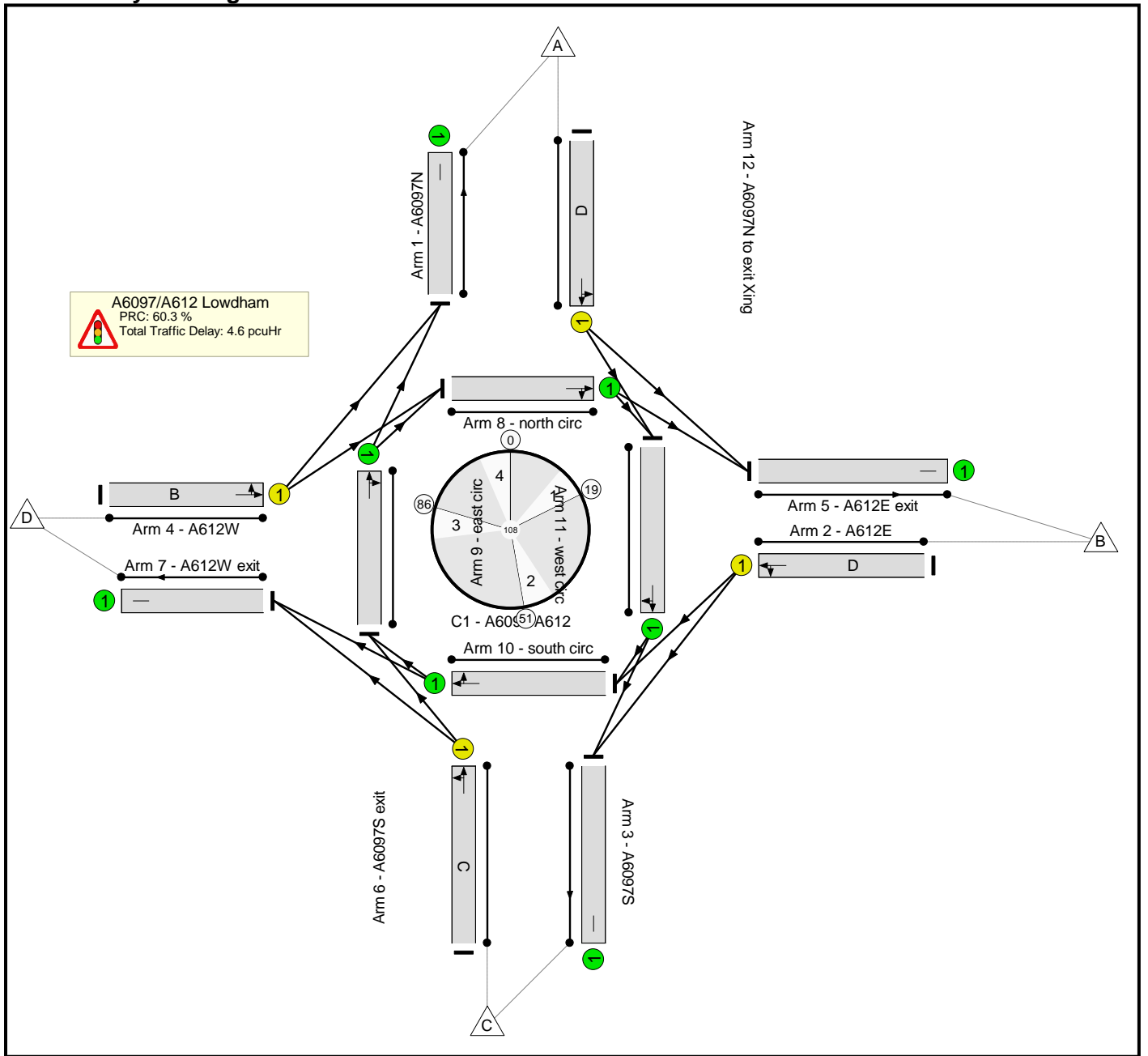
**Stage Timings**

Stage	1	2	3	4
Duration	7	7	7	7
Change Point	0	19	51	86

**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Lowdham m phase 2/3 - submission to tuba	-	-	N/A	-	-		-	-	-	-	-	-	56.1%
A6097/A612 Lowdham	-	-	N/A	-	-		-	-	-	-	-	-	56.1%
1/1	A6097N Left Ahead	U	N/A	N/A	D		1	7	-	63	1900	141	44.8%
2/1	A612E Left Ahead	U	N/A	N/A	D		1	7	-	33	1900	141	23.4%
3/1	A6097S Left Ahead	U	N/A	N/A	C		1	7	-	79	1900	141	56.1%
4/1	A612W Ahead Left	U	N/A	N/A	B		1	7	-	54	1900	141	38.4%
5/1	A612E exit	U	N/A	N/A	-		-	-	-	36	Inf	Inf	0.0%
6/1	A6097S exit	U	N/A	N/A	-		-	-	-	73	Inf	Inf	0.0%
7/1	A612W exit	U	N/A	N/A	-		-	-	-	50	Inf	Inf	0.0%
8/1	north circ Ahead Right	U	N/A	N/A	-		-	-	-	48	1800	1800	2.7%
9/1	east circ Ahead Right	U	N/A	N/A	-		-	-	-	75	1800	1800	4.2%
10/1	south circ Ahead Right	U	N/A	N/A	-		-	-	-	35	1800	1800	1.9%
11/1	west circ Right Ahead	U	N/A	N/A	-		-	-	-	64	1800	1800	3.6%
12/1	A6097N to exit Xing	U	N/A	N/A	-		-	-	-	70	1800	1800	3.9%



Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Overs at Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Overs at Queue (pcu)	Mean Max Queue (pcu)
Network: Lowdham phase 2/3 - submission to tuba	-	-	0	0	0	3.0	1.6	0.0	4.6	-	-	-	-
A6097/A612 Lowdham	-	-	0	0	0	3.0	1.6	0.0	4.6	-	-	-	-
1/1	63	63	-	-	-	0.8	0.4	-	1.2	70.8	1.8	0.4	2.2
2/1	33	33	-	-	-	0.4	0.2	-	0.6	63.8	0.9	0.2	1.1
3/1	79	79	-	-	-	1.1	0.6	-	1.7	76.9	2.3	0.6	2.9
4/1	54	54	-	-	-	0.7	0.3	-	1.0	68.3	1.5	0.3	1.8
5/1	36	36	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	73	73	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	50	50	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	48	48	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
9/1	75	75	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
10/1	35	35	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
11/1	64	64	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
12/1	70	70	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
C1 - A6097/A612 4.54 Cycle Time (s):							PRC for Signalled Lanes (%): 108	60.3	Total Delay for Signalled Lanes (pcuHr):				
							PRC Over All Lanes (%): 4.62	60.3	Total Delay Over All Lanes (pcuHr):				

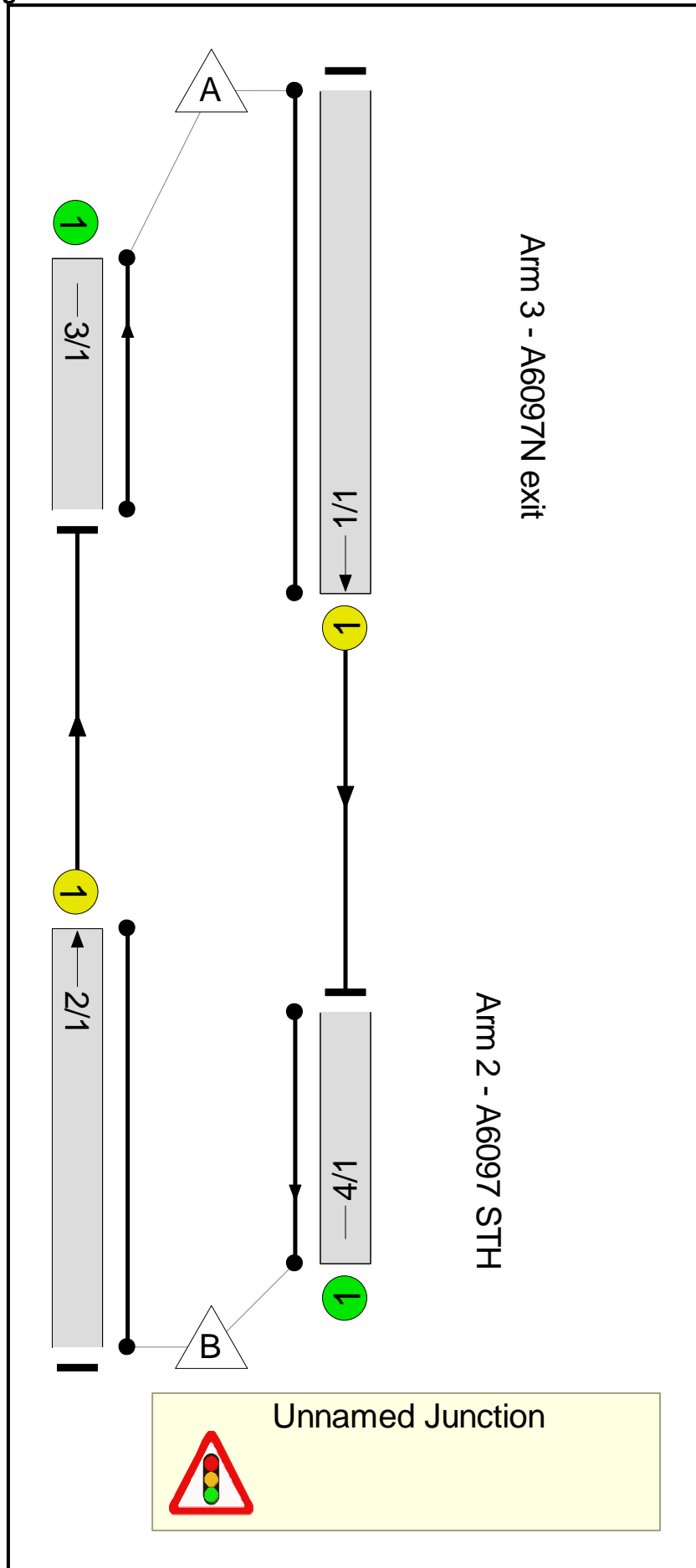
**Kirkhill**

**Full Input Data And Results**

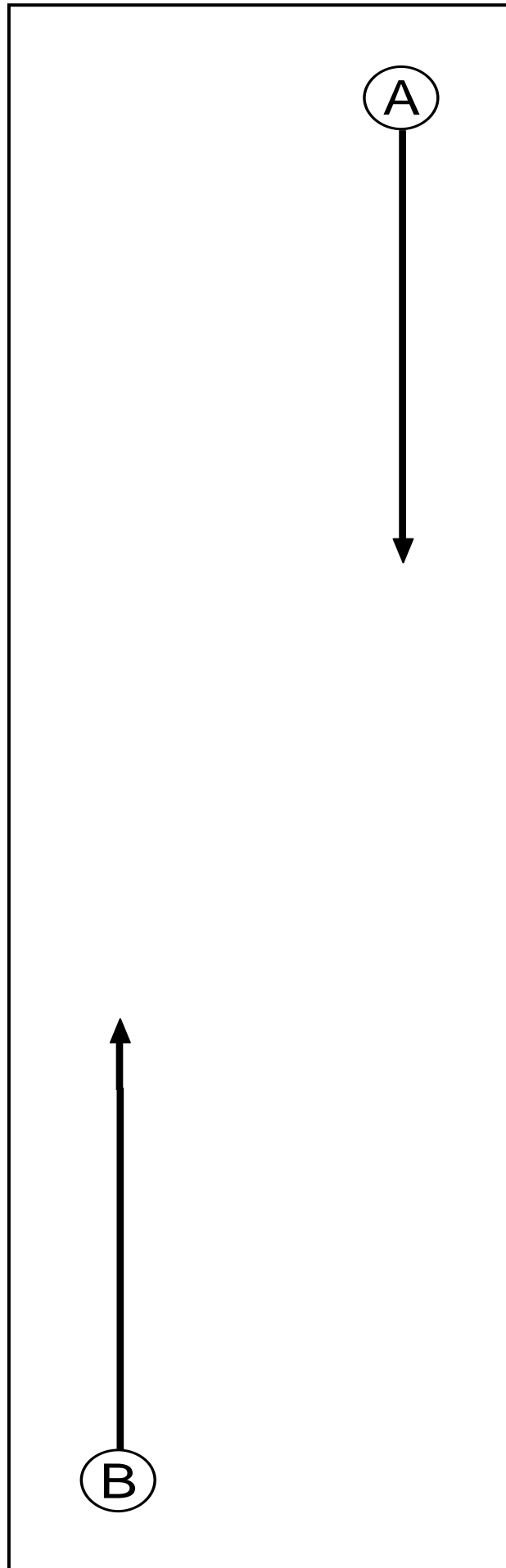
**User and Project Details**

<b>Project:</b>	<b>A614/ A6097</b>
<b>Title:</b>	<b>A6097/ KIRK HILL phase 1 tm</b>
<b>Location:</b>	A6097/ KIRK HILL, EAS BRIDGFORD
<b>Additional detail:</b>	
<b>File name:</b>	DDC-J90197 A6097-kirk hill temp sigs tm.lsg3x
<b>Author:</b>	rr
<b>Company:</b>	via
<b>Address:</b>	tbh

Network Layout Diagram



**Phase Diagram**



Full Input Data And Results

**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7

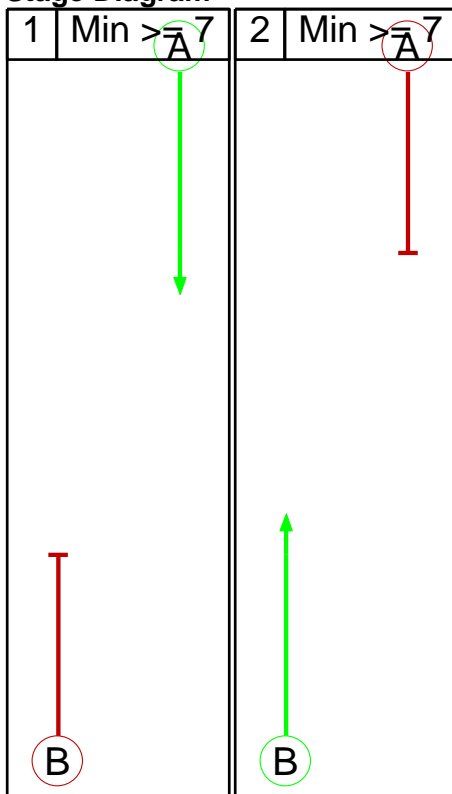
**Phase Intergreens Matrix**

	Starting Phase	
Terminating Phase	A	B
	A	24
	B	24

**Phases in Stage**

Stage No.	Phases in Stage
1	A
2	B

**Stage Diagram**



**Phase Delays**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Full Input Data And Results

**Prohibited Stage Change**

From Stage	To Stage	
	1	2
1		24
2	24	

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: Unnamed Junction**

There are no Opposed Lanes in this Junction



Full Input Data And Results

**Lane Input Data**

Junction: Unnamed Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A6097 NTH)	U	A	2	3	60.0	User	1900	-	-	-	-	-
2/1 (A6097 STH)	U	B	2	3	60.0	User	1900	-	-	-	-	-
3/1 (A6097N exit)	U		2	3	60.0	User	1800	-	-	-	-	-
4/1 (A6097S exit)	U		2	3	60.0	User	1800	-	-	-	-	-

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: 'am 2023'	08:00	09:00	01:00	
2: 'pm 2023'	17:00	18:00	01:00	
3: 'pm 2023+suppressed'	17:00	18:00	01:00	
4: 'ip 2023'	11:00	12:00	01:00	
5: 'op 2023'	22:00	23:00	01:00	

Scenario 1: 'am 2023' (FG1: 'am 2023', Plan 1: 'all stages')

**Traffic Flows, Desired**

Desired Flow :

	Destination			
	A	B	Tot.	
Origin	A	0	1188	1188
	B	985	0	985
	Tot.	985	1188	2173

**Traffic Lane Flows**

Lane	Scenario 1: am 2023
<b>Junction: Unnamed Junction</b>	
1/1	1188
2/1	985
3/1	985
4/1	1188

Full Input Data And Results

**Lane Saturation Flows**

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097 NTH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A6097 STH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A6097N exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A6097S exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

**Scenario 2: 'pm 2023'** (FG2: 'pm 2023', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination		
		A	B	Tot.
Origin	A	0	948	948
	B	968	0	968
	Tot.	968	948	1916

**Traffic Lane Flows**

Lane	Scenario 2: pm 2023
Junction: Unnamed Junction	
1/1	948
2/1	968
3/1	968
4/1	948

**Lane Saturation Flows**

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097 NTH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A6097 STH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A6097N exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A6097S exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

Full Input Data And Results

**Scenario 3: 'pm 2023+suppressed'** (FG3: 'pm 2023+suppressed', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination		
		A	B	Tot.
Origin	A	0	1115	1115
	B	1421	0	1421
	Tot.	1421	1115	2536

**Traffic Lane Flows**

Lane	Scenario 3: pm 2023+suppressed
<b>Junction: Unnamed Junction</b>	
1/1	1115
2/1	1421
3/1	1421
4/1	1115

**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097 NTH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A6097 STH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A6097N exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A6097S exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

**Scenario 4: 'ip 2023'** (FG4: 'ip 2023', Plan 1: 'all stages')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination		
		A	B	Tot.
Origin	A	0	642	642
	B	698	0	698
	Tot.	698	642	1340

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: ip 2023
<b>Junction: Unnamed Junction</b>	
1/1	642
2/1	698
3/1	698
4/1	642

**Lane Saturation Flows**

<b>Junction: Unnamed Junction</b>								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097 NTH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A6097 STH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A6097N exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A6097S exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

**Scenario 5: 'op 2023' (FG5: 'op 2023', Plan 1: 'all stages')**

**Traffic Flows, Desired**

**Desired Flow :**

		Destination		
		A	B	Tot.
Origin	A	0	55	55
	B	59	0	59
	Tot.	59	55	114

**Traffic Lane Flows**

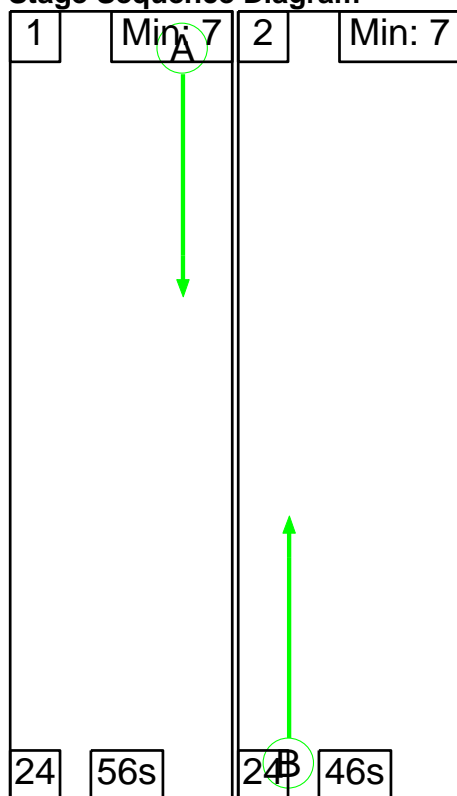
Lane	Scenario 5: op 2023
<b>Junction: Unnamed Junction</b>	
1/1	55
2/1	59
3/1	59
4/1	55

### Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A6097 NTH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A6097 STH Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A6097N exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800
4/1 (A6097S exit Lane 1)	This lane uses a directly entered Saturation Flow						1800	1800

Scenario 1: 'am 2023' (FG1: 'am 2023', Plan 1: 'all stages')

### Stage Sequence Diagram

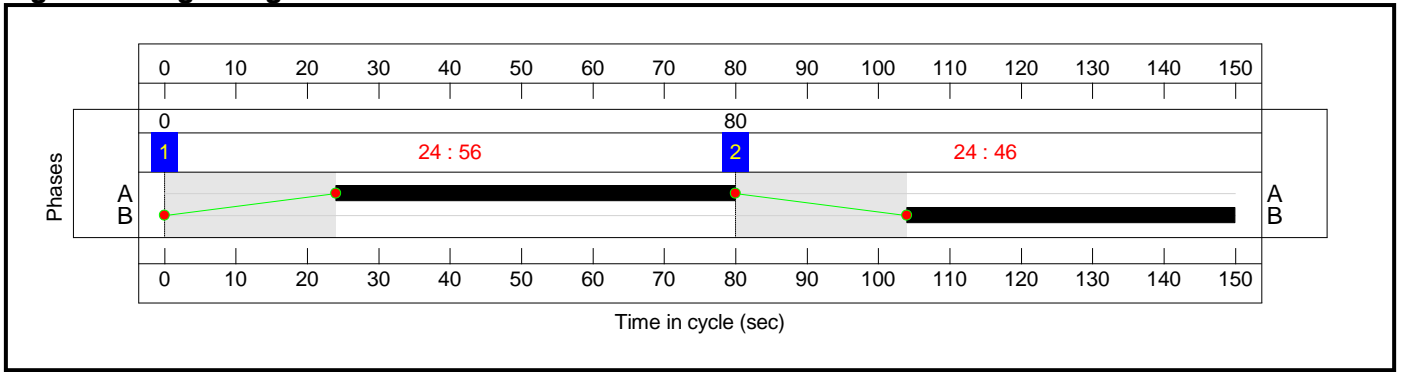


### Stage Timings

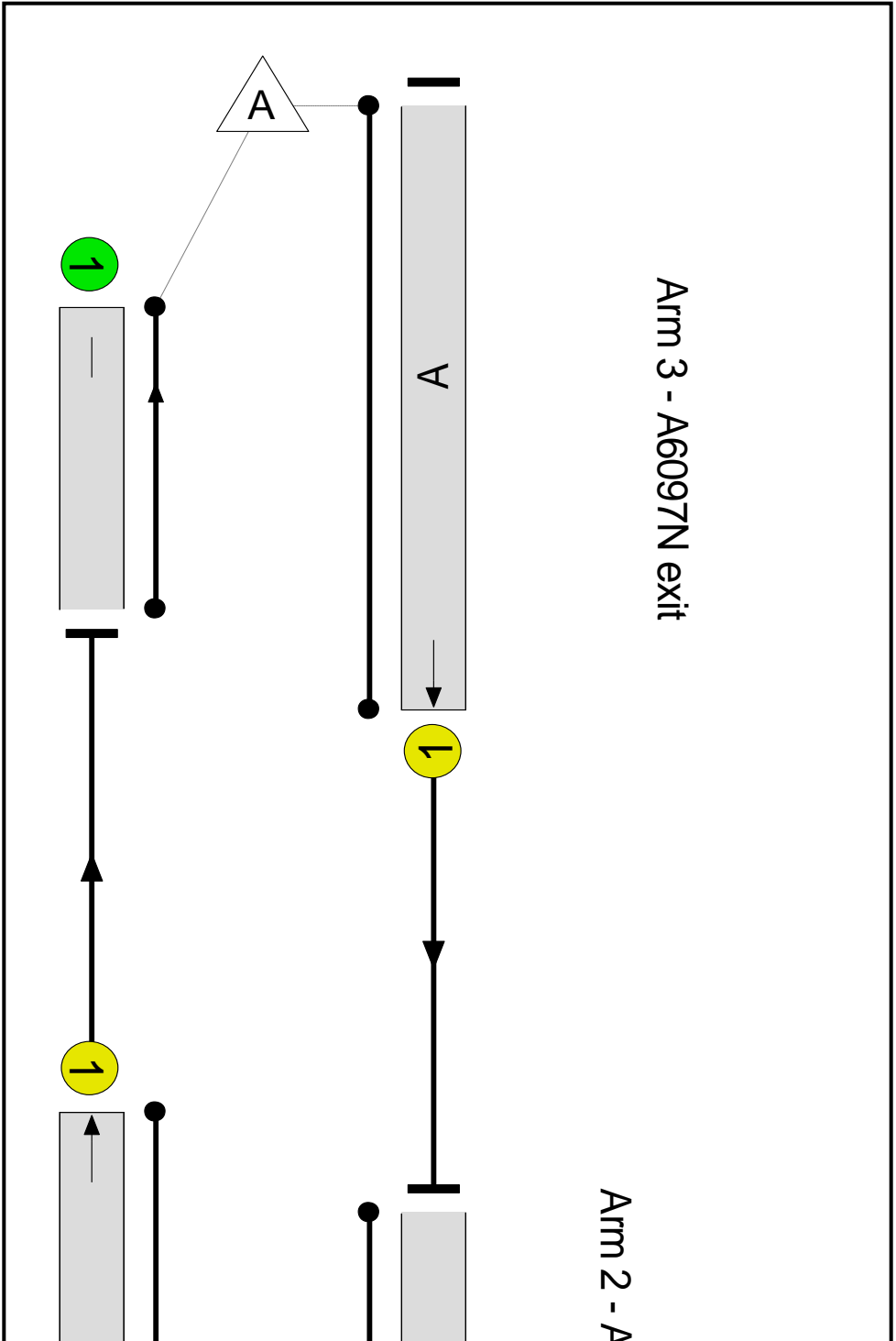
Stage	1	2
Duration	56	46
Change Point	0	80

# Full Input Data And Results

## Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Arm 3 - A6097N exit

Arm 2 - A



Full Input Data And Results

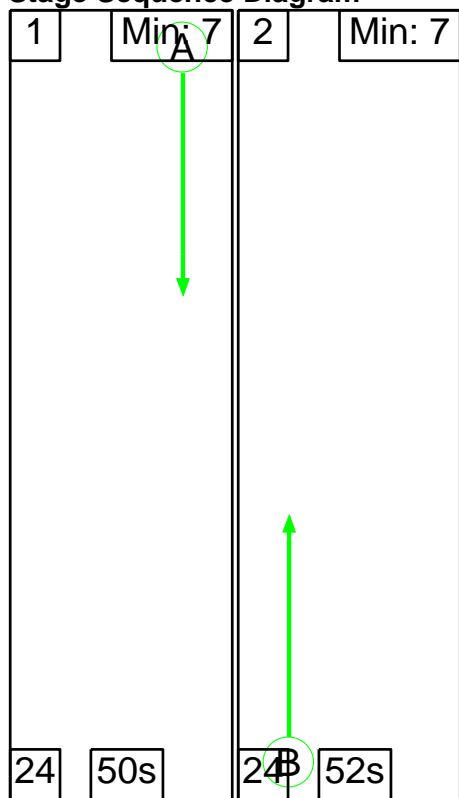
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A6097/ KIRK HILL phase 1 tm	-	-	N/A	-	-		-	-	-	-	-	-	165.5%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	165.5%
1/1	A6097 NTH Ahead	U	N/A	N/A	A		1	56	-	1188	1900	722	164.5%
2/1	A6097 STH Ahead	U	N/A	N/A	B		1	46	-	985	1900	595	165.5%
3/1	A6097N exit	U	N/A	N/A	-		-	-	-	985	1800	1800	33.1%
4/1	A6097S exit	U	N/A	N/A	-		-	-	-	1188	1800	1800	40.1%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A6097/ KIRK HILL phase 1 tm	-	-	0	0	0	96.4	430.9	0.0	527.3	-	-	-	-
Unnamed Junction	-	-	0	0	0	96.4	430.9	0.0	527.3	-	-	-	-
1/1	1188	722	-	-	-	47.2	234.3	-	281.5	852.9	68.9	234.3	303.2
2/1	985	595	-	-	-	48.8	196.1	-	244.9	895.2	72.7	196.1	268.8
3/1	595	595	-	-	-	0.1	0.2	-	0.4	2.3	21.0	0.2	21.3
4/1	722	722	-	-	-	0.2	0.3	-	0.5	2.7	26.3	0.3	26.6
C1      PRC for Signalled Lanes (%): -83.8      Total Delay for Signalled Lanes (pcuHr): 526.38      Cycle Time (s): 150 PRC Over All Lanes (%): -83.8      Total Delay Over All Lanes (pcuHr): 527.30													

Full Input Data And Results

Scenario 2: 'pm 2023' (FG2: 'pm 2023', Plan 1: 'all stages')

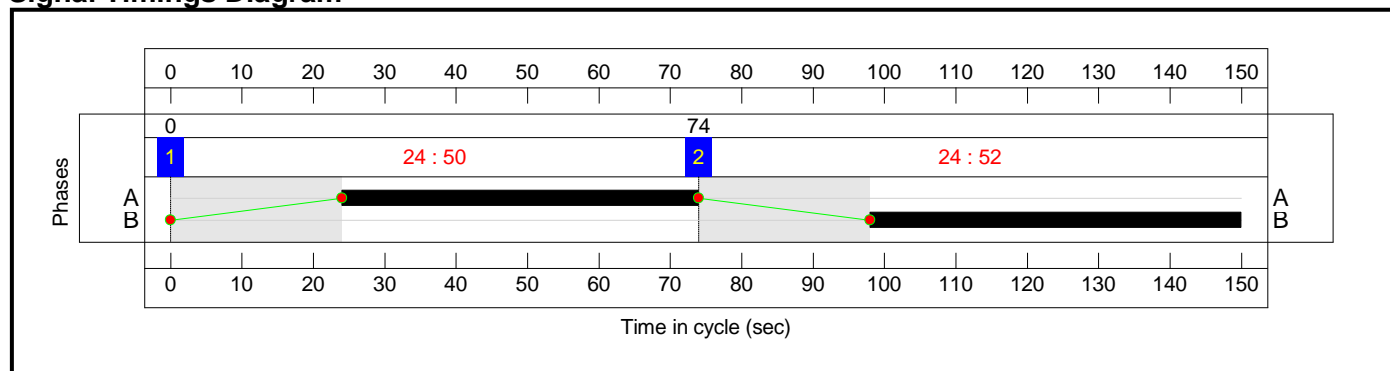
Stage Sequence Diagram



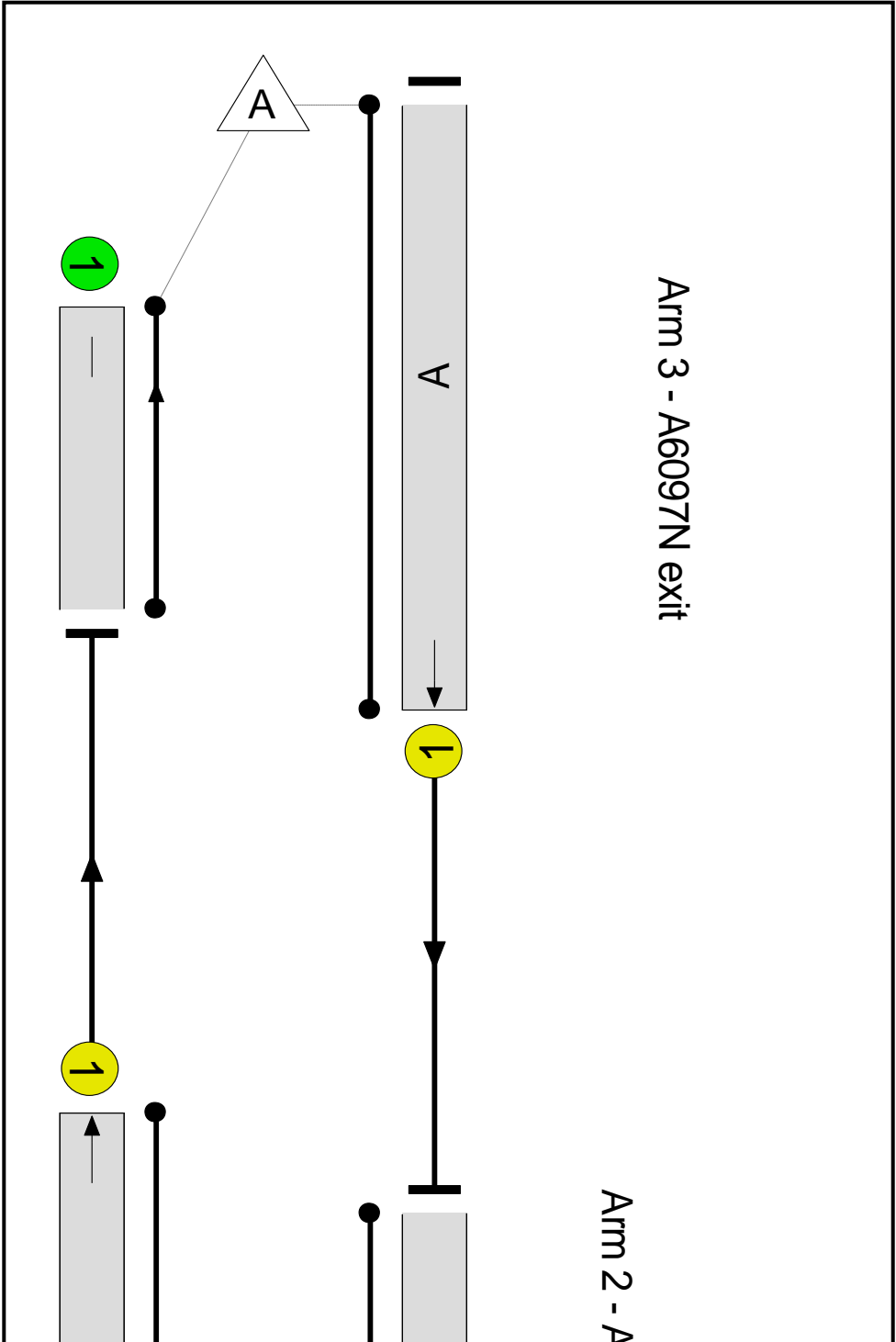
Stage Timings

Stage	1	2
Duration	50	52
Change Point	0	74

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

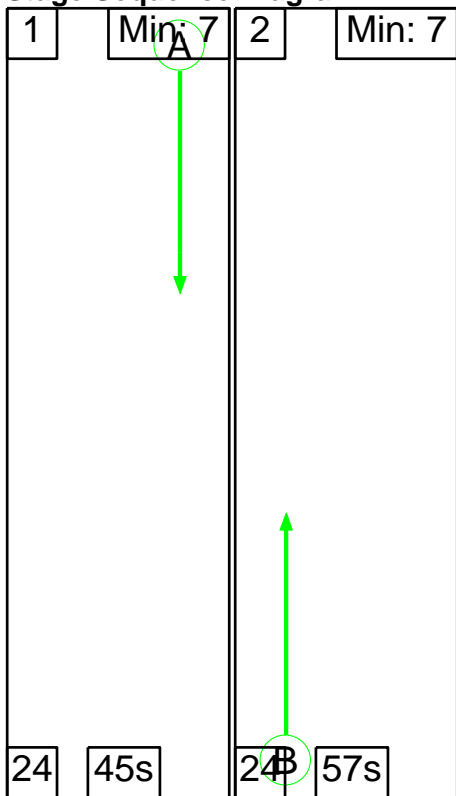
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A6097/ KIRK HILL phase 1 tm	-	-	N/A	-	-		-	-	-	-	-	-	146.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	146.7%
1/1	A6097 NTH Ahead	U	N/A	N/A	A		1	50	-	948	1900	646	146.7%
2/1	A6097 STH Ahead	U	N/A	N/A	B		1	52	-	968	1900	671	144.2%
3/1	A6097N exit	U	N/A	N/A	-		-	-	-	968	1800	1800	37.3%
4/1	A6097S exit	U	N/A	N/A	-		-	-	-	948	1800	1800	35.9%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A6097/ KIRK HILL phase 1 tm	-	-	0	0	0	74.0	303.1	0.0	377.1	-	-	-	-
Unnamed Junction	-	-	0	0	0	74.0	303.1	0.0	377.1	-	-	-	-
1/1	948	646	-	-	-	33.9	152.6	-	186.5	708.1	52.1	152.6	204.6
2/1	968	671	-	-	-	39.7	149.9	-	189.7	705.5	64.2	149.9	214.2
3/1	671	671	-	-	-	0.2	0.3	-	0.5	2.5	24.2	0.3	24.5
4/1	646	646	-	-	-	0.2	0.3	-	0.4	2.4	23.1	0.3	23.4
C1      PRC for Signalled Lanes (%): -63.1      Total Delay for Signalled Lanes (pcuHr): 376.17      Cycle Time (s): 150 PRC Over All Lanes (%): -63.1      Total Delay Over All Lanes (pcuHr): 377.07													

Full Input Data And Results

Scenario 3: 'pm 2023+suppressed' (FG3: 'pm 2023+suppressed', Plan 1: 'all stages')

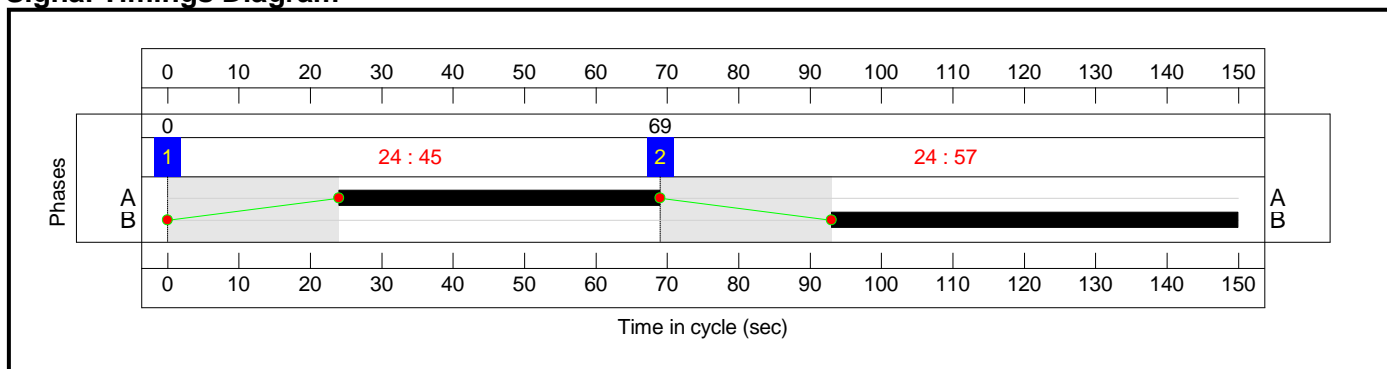
**Stage Sequence Diagram**



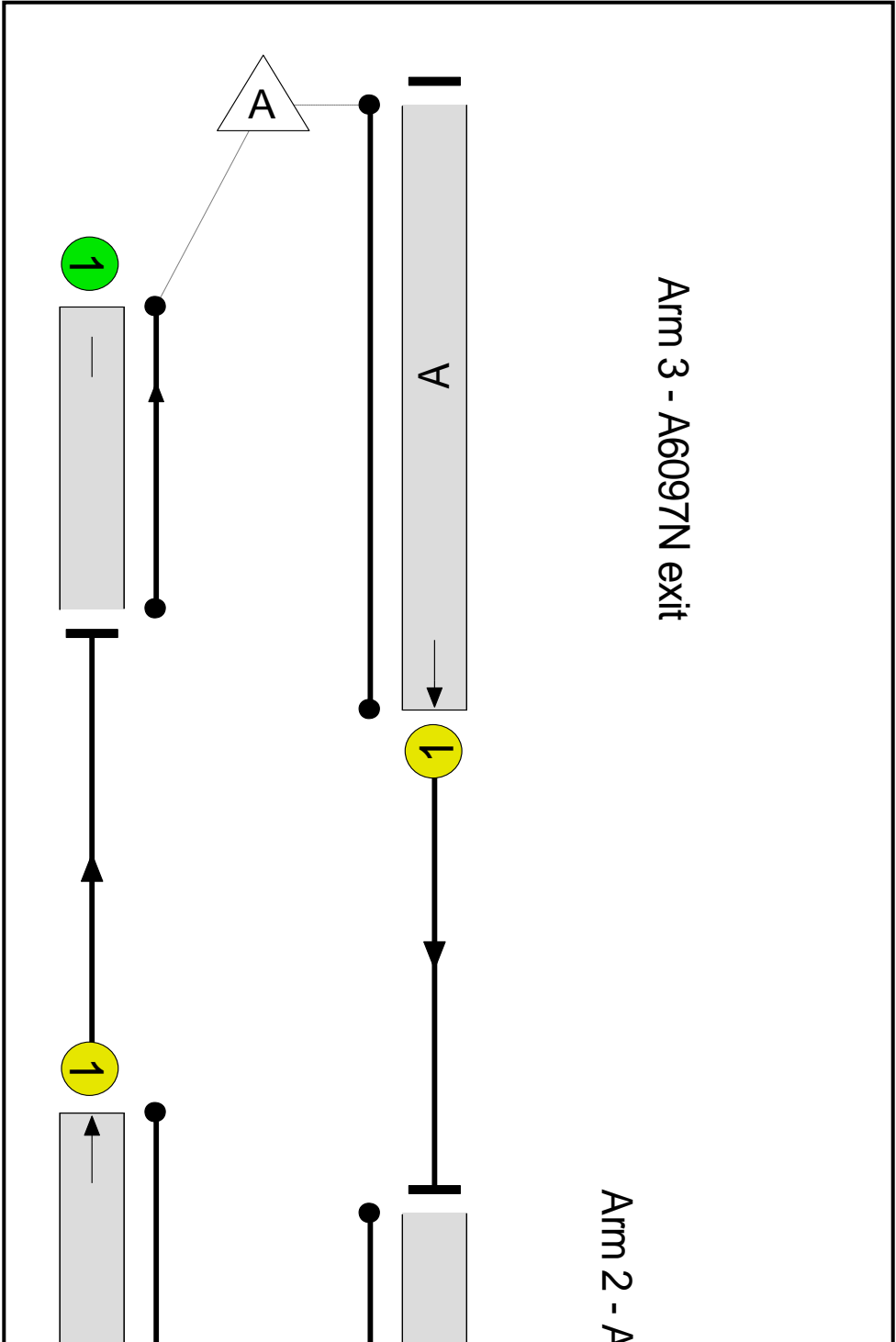
**Stage Timings**

Stage	1	2
Duration	45	57
Change Point	0	69

**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**





Full Input Data And Results

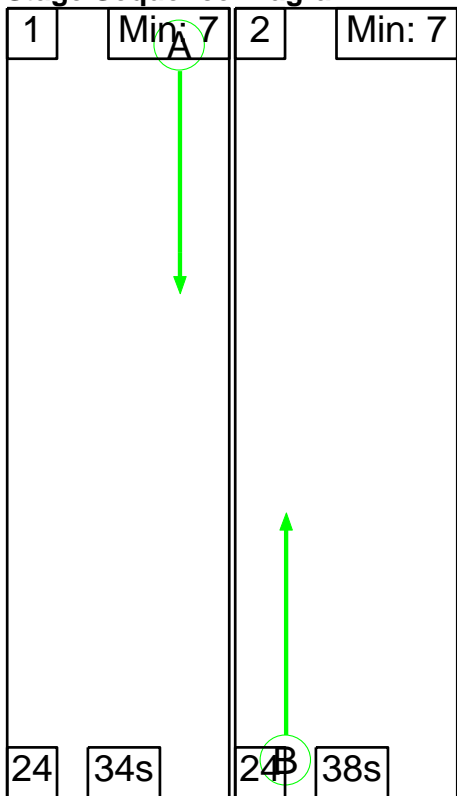
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A6097/ KIRK HILL phase 1 tm	-	-	N/A	-	-		-	-	-	-	-	-	193.4%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	193.4%
1/1	A6097 NTH Ahead	U	N/A	N/A	A		1	45	-	1115	1900	583	191.4%
2/1	A6097 STH Ahead	U	N/A	N/A	B		1	57	-	1421	1900	735	193.4%
3/1	A6097N exit	U	N/A	N/A	-		-	-	-	1421	1800	1800	40.8%
4/1	A6097S exit	U	N/A	N/A	-		-	-	-	1115	1800	1800	32.4%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A6097/ KIRK HILL phase 1 tm	-	-	0	0	0	134.0	612.0	0.0	746.0	-	-	-	-
Unnamed Junction	-	-	0	0	0	134.0	612.0	0.0	746.0	-	-	-	-
1/1	1115	583	-	-	-	53.3	267.2	-	320.5	1034.8	68.6	267.2	335.8
2/1	1421	735	-	-	-	80.4	344.2	-	424.6	1075.7	115.2	344.2	459.4
3/1	735	735	-	-	-	0.2	0.3	-	0.6	2.8	26.8	0.3	27.2
4/1	583	583	-	-	-	0.1	0.2	-	0.4	2.2	20.3	0.2	20.6
C1      PRC for Signalled Lanes (%): -114.9      Total Delay for Signalled Lanes (pcuHr): 745.11      Cycle Time (s): 150 PRC Over All Lanes (%): -114.9      Total Delay Over All Lanes (pcuHr): 746.03													

Full Input Data And Results

Scenario 4: 'ip 2023' (FG4: 'ip 2023', Plan 1: 'all stages')

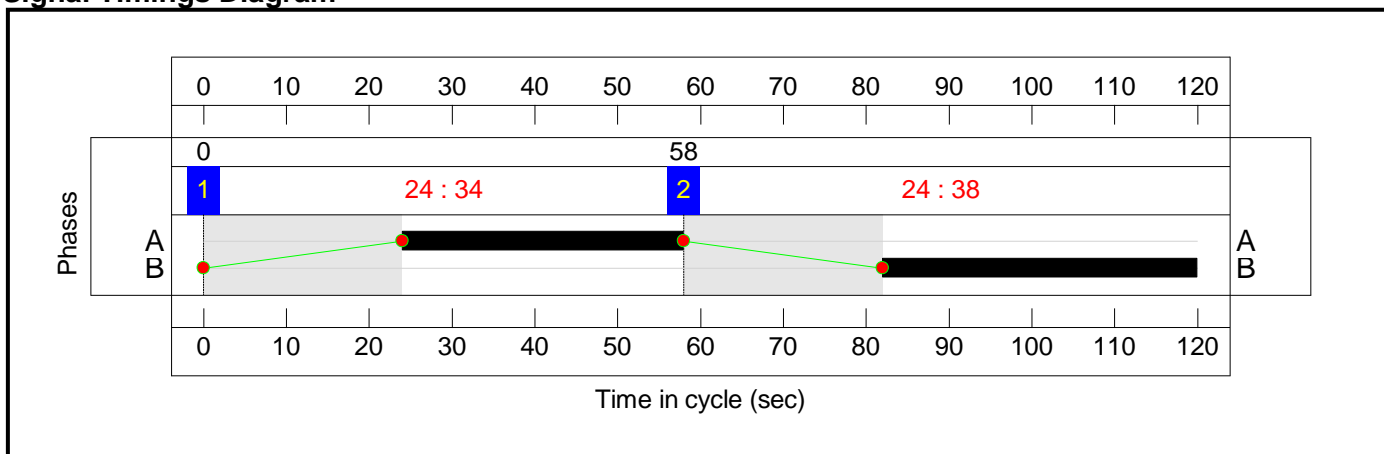
Stage Sequence Diagram



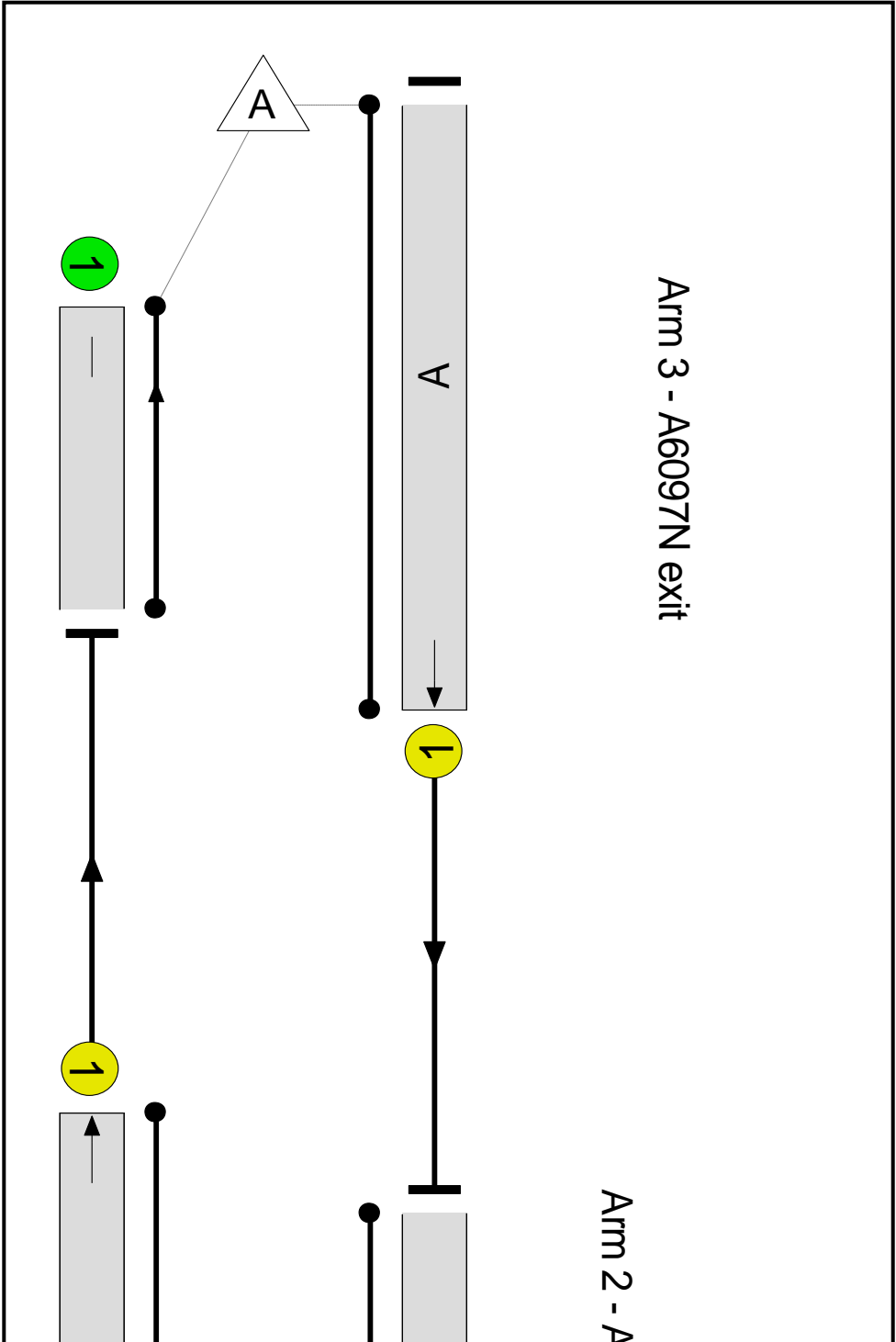
Stage Timings

Stage	1	2
Duration	34	38
Change Point	0	58

Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results

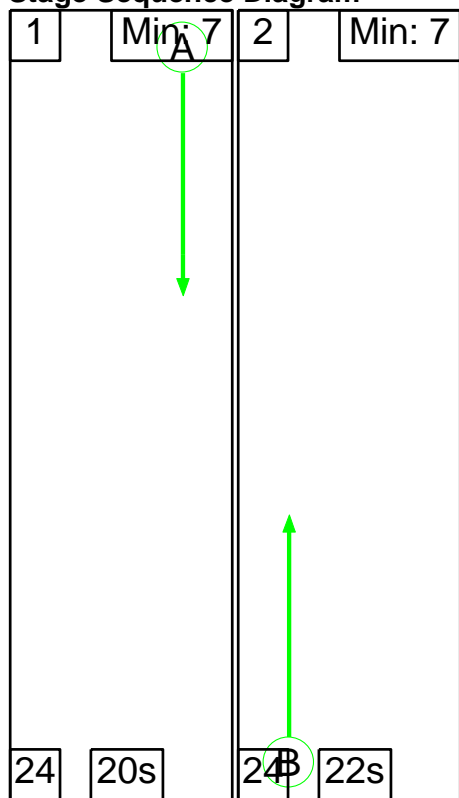
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A6097/ KIRK HILL phase 1 tm	-	-	N/A	-	-		-	-	-	-	-	-	115.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	115.8%
1/1	A6097 NTH Ahead	U	N/A	N/A	A		1	34	-	642	1900	554	115.8%
2/1	A6097 STH Ahead	U	N/A	N/A	B		1	38	-	698	1900	618	113.0%
3/1	A6097N exit	U	N/A	N/A	-		-	-	-	698	1800	1800	34.3%
4/1	A6097S exit	U	N/A	N/A	-		-	-	-	642	1800	1800	30.8%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A6097/ KIRK HILL phase 1 tm	-	-	0	0	0	26.2	92.0	0.0	118.1	-	-	-	-
Unnamed Junction	-	-	0	0	0	26.2	92.0	0.0	118.1	-	-	-	-
1/1	642	554	-	-	-	12.4	47.3	-	59.7	334.7	24.3	47.3	71.6
2/1	698	618	-	-	-	13.6	44.2	-	57.8	298.1	28.1	44.2	72.2
3/1	618	618	-	-	-	0.1	0.3	-	0.4	2.1	16.6	0.3	16.9
4/1	554	554	-	-	-	0.1	0.2	-	0.3	1.9	14.5	0.2	14.7
C1      PRC for Signalled Lanes (%): -28.7      Total Delay for Signalled Lanes (pcuHr): 117.49      Cycle Time (s): 120 PRC Over All Lanes (%): -28.7      Total Delay Over All Lanes (pcuHr): 118.14													

Full Input Data And Results

Scenario 5: 'op 2023' (FG5: 'op 2023', Plan 1: 'all stages')

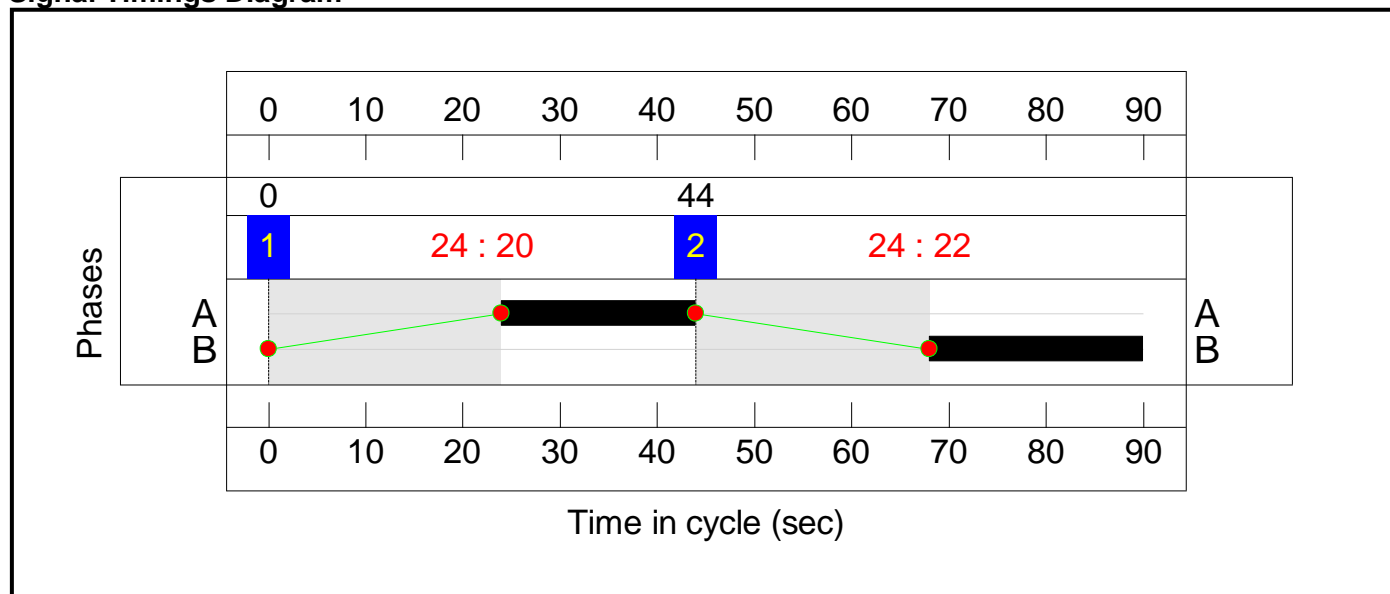
Stage Sequence Diagram



Stage Timings

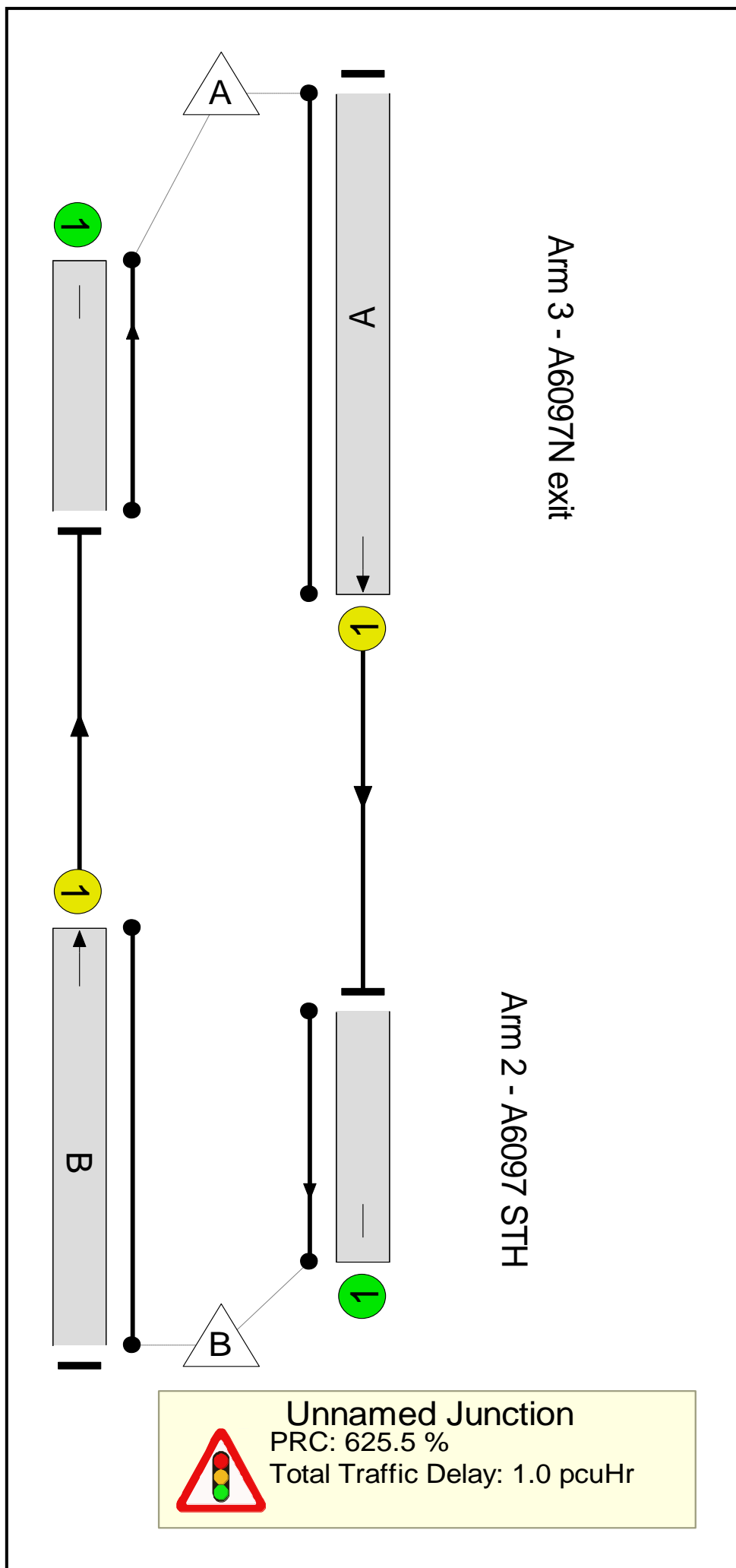
Stage	1	2
Duration	20	22
Change Point	0	44

Signal Timings Diagram



Full Input Data And Results

## **Network Layout Diagram**





**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A6097/ KIRK HILL phase 1 tm	-	-	N/A	-	-		-	-	-	-	-	-	12.4 %
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	12.4 %
1/1	A6097 NTH Ahead	U	N/A	N/A	A		1	20	-	55	1900	443	12.4 %
2/1	A6097 STH Ahead	U	N/A	N/A	B		1	22	-	59	1900	486	12.2 %
3/1	A6097N exit	U	N/A	N/A	-		-	-	-	59	1800	1800	3.3 %
4/1	A6097S exit	U	N/A	N/A	-		-	-	-	55	1800	1800	3.1 %
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcu Hr)	Rand + Oversat Delay (pcu Hr)	Storage Area Uniform Delay (pcu Hr)	Total Delay (pcu Hr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat at Queue (pcu)	Mean Max Queue (pcu)
Network: A6097/ KIRK HILL phase 1 tm	-	-	0	0	0	0.8	0.2	0.0	1.0	-	-	-	-
Unnamed Junction	-	-	0	0	0	0.8	0.2	0.0	1.0	-	-	-	-
1/1	55	55	-	-	-	0.4	0.1	-	0.5	31.9	1.1	0.1	1.2
2/1	59	59	-	-	-	0.4	0.1	-	0.5	30.0	1.1	0.1	1.2
3/1	59	59	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
4/1	55	55	-	-	-	0.0	0.0	-	0.0	1.0	0.0	0.0	0.0
Lanes (pcuHr):			C1		PRC for Signalled Lanes (%):				625.5	Total Delay for Signalled			
			0.98Cycle Time (s):		90								
Lanes(pcuHr):					PRC Over All Lanes (%):				625.5	Total Delay Over All			
					1.01								

## Appendix C – TUBA INPUT FILE

**Ollerton**

## SCHEME SPECIFIC PARAMETERS

### PARAMETERS

TUBA\_version 1.9.14  
run\_name TUBA-1\_Ollerton\_DCC  
do\_min\_name DM  
do\_som\_name DS  
  
first\_yr 2023  
horizon\_yr 2023  
modelled\_yrs 2023  
detail Yes  
current\_yr 2020  
print\_warn 20  
P&R\_car\_speed 65.0  
zones\_as\_sectors No

### TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

### SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

### DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_SOM\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

## USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

## INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05583	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30763	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43971	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11258	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
6	6	1	V	1	0	2023	0.03823	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
7	7	1	V	1	0	2023	0.03066	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DM.txt
8	1	2	V	1	0	2023	0.04371	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DM.txt
9	2	2	V	1	0	2023	0.27841	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DM.txt
10	3	2	V	1	0	2023	0.53249	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DM.txt
11	4	2	V	1	0	2023	0.01327	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DM.txt

12 5 2 V 1 0 2023 0.09729 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton PM 2023 DM.txt

13 6 2 V 1 0 2023 0.01600 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton PM 2023 DM.txt

14 7 2 V 1 0 2023 0.01884 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton PM 2023 DM.txt

15 1 3 V 1 0 2023 0.05528 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

16 2 3 V 1 0 2023 0.08674 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

17 3 3 V 1 0 2023 0.62682 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

18 4 3 V 1 0 2023 0.01654 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

19 5 3 V 1 0 2023 0.12130 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

20 6 3 V 1 0 2023 0.05474 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

21 7 3 V 1 0 2023 0.03858 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton IP 2023 DM.txt

22 1 4 V 1 0 2023 0.03313 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

23 2 4 V 1 0 2023 0.22108 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

24 3 4 V 1 0 2023 0.51462 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

25 4 4 V 1 0 2023 0.01654 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

26 5 4 V 1 0 2023 0.12130 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

27 6 4 V 1 0 2023 0.05474 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

28 7 4 V 1 0 2023 0.03858 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DM.txt

29 1 1 V 1 1 2023 0.05583 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton AM 2023 DS.txt

30 2 1 V 1 1 2023 0.30763 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton AM 2023 DS.txt

31	3	1	V	1	1	2023	0.43971	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DS.txt
32	4	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DS.txt
33	5	1	V	1	1	2023	0.11258	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DS.txt
34	6	1	V	1	1	2023	0.03823	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DS.txt
35	7	1	V	1	1	2023	0.03066	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton AM 2023 DS.txt
36	1	2	V	1	1	2023	0.04371	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
37	2	2	V	1	1	2023	0.27841	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
38	3	2	V	1	1	2023	0.53249	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
39	4	2	V	1	1	2023	0.01327	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
40	5	2	V	1	1	2023	0.09729	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
41	6	2	V	1	1	2023	0.01600	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
42	7	2	V	1	1	2023	0.01884	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton PM 2023 DS.txt
43	1	3	V	1	1	2023	0.05528	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
44	2	3	V	1	1	2023	0.08674	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
45	3	3	V	1	1	2023	0.62682	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
46	4	3	V	1	1	2023	0.01654	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
47	5	3	V	1	1	2023	0.12130	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
48	6	3	V	1	1	2023	0.05474	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt
49	7	3	V	1	1	2023	0.03858	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V_DDC_1_Ollerton IP 2023 DS.txt



50 1 4 V 1 1 2023 0.03313 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

51 2 4 V 1 1 2023 0.22108 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

52 3 4 V 1 1 2023 0.51462 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

53 4 4 V 1 1 2023 0.01654 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

54 5 4 V 1 1 2023 0.12130 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

55 6 4 V 1 1 2023 0.05474 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

56 7 4 V 1 1 2023 0.03858 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\V\_DDC\_1\_Ollerton OP 2023 DS.txt

57 1 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

58 2 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

59 3 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

60 4 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

61 5 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

62 6 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

63 7 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton AM 2023 DM.txt

64 1 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton PM 2023 DM.txt

65 2 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton PM 2023 DM.txt

66 3 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton PM 2023 DM.txt

67 4 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton PM 2023 DM.txt

68 5 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T\_DDC\_1\_Ollerton PM 2023 DM.txt

69 6 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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78 1 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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81 4 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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82 5 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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83 6 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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91	7	1	T	1	1	2023	1.00000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T_DDC_1_Ollerton AM 2023 DS.txt
92	1	2	T	1	1	2023	1.00000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T_DDC_1_Ollerton PM 2023 DS.txt
93	2	2	T	1	1	2023	1.00000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T_DDC_1_Ollerton PM 2023 DS.txt
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106	1	4	T	1	1	2023	1.00000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\1-Ollerton-DDC\Outputs\T_DDC_1_Ollerton OP 2023 DS.txt

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161 7 3 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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162 1 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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163 2 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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164 3 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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165 4 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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166 5 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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167 6 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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169 1 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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170 2 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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## SECTORS

\*mode Sector\_file\_name

**Mickledale**



## SCHEME SPECIFIC PARAMETERS

### PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-3\_Mickledale\_DCC\_V2

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2023

modelled\_yrs 2023

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

### TIME\_SLICES

*no.	duration(min)	annualisation	period	description
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1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

#### SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

#### DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

#### DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

#### DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

#### SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

#### DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

#### DO\_SOM\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

#### DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

#### BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

#### USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

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*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05500	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V_DDC_3_Mickledale AM 2023 DM.txt
2	2	1	V	1	0	2023	0.30304	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V_DDC_3_Mickledale AM 2023 DM.txt
3	3	1	V	1	0	2023	0.43315	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V_DDC_3_Mickledale AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01720	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V_DDC_3_Mickledale AM 2023 DM.txt

5 5 1 V 1 0 2023 0.12610 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V\_DDC\_3\_Mickledale AM 2023  
DM.txt

6 6 1 V 1 0 2023 0.03580 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V\_DDC\_3\_Mickledale AM 2023  
DM.txt

7 7 1 V 1 0 2023 0.02970 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V\_DDC\_3\_Mickledale AM 2023  
DM.txt

8 1 2 V 1 0 2023 0.04215 L:\60625845\_A614 MRN DfT  
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DM.txt

9 2 2 V 1 0 2023 0.26847 L:\60625845\_A614 MRN DfT  
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DM.txt

10 3 2 V 1 0 2023 0.51348 L:\60625845\_A614 MRN DfT  
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DM.txt

11 4 2 V 1 0 2023 0.01642 L:\60625845\_A614 MRN DfT  
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DM.txt

12 5 2 V 1 0 2023 0.12038 L:\60625845\_A614 MRN DfT  
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DM.txt

13 6 2 V 1 0 2023 0.02110 L:\60625845\_A614 MRN DfT  
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DM.txt

14 7 2 V 1 0 2023 0.01800 L:\60625845\_A614 MRN DfT  
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DM.txt

15 1 3 V 1 0 2023 0.05244 L:\60625845\_A614 MRN DfT  
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DM.txt

16 2 3 V 1 0 2023 0.08229 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V\_DDC\_3\_Mickledale IP 2023  
DM.txt

17 3 3 V 1 0 2023 0.59467 L:\60625845\_A614 MRN DfT  
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DM.txt

18 4 3 V 1 0 2023 0.01757 L:\60625845\_A614 MRN DfT  
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DM.txt

19 5 3 V 1 0 2023 0.12883 L:\60625845\_A614 MRN DfT  
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DM.txt

20 6 3 V 1 0 2023 0.07300 L:\60625845\_A614 MRN DfT  
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DM.txt

21 7 3 V 1 0 2023 0.05130 L:\60625845\_A614 MRN DfT  
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DM.txt

22 1 4 V 1 0 2023 0.03143 L:\60625845\_A614 MRN DfT  
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DM.txt

23 2 4 V 1 0 2023 0.20975 L:\60625845\_A614 MRN DfT  
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24 3 4 V 1 0 2023 0.48823 L:\60625845\_A614 MRN DfT  
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DM.txt

25 4 4 V 1 0 2023 0.01757 L:\60625845\_A614 MRN DfT  
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26 5 4 V 1 0 2023 0.12883 L:\60625845\_A614 MRN DfT  
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DM.txt

27 6 4 V 1 0 2023 0.07300 L:\60625845\_A614 MRN DfT  
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28 7 4 V 1 0 2023 0.05130 L:\60625845\_A614 MRN DfT  
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DM.txt

29 1 1 V 1 1 2023 0.05500 L:\60625845\_A614 MRN DfT  
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30 2 1 V 1 1 2023 0.30304 L:\60625845\_A614 MRN DfT  
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DS.txt

31 3 1 V 1 1 2023 0.43315 L:\60625845\_A614 MRN DfT  
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DS.txt

32 4 1 V 1 1 2023 0.01720 L:\60625845\_A614 MRN DfT  
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DS.txt

33 5 1 V 1 1 2023 0.12610 L:\60625845\_A614 MRN DfT  
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DS.txt

34 6 1 V 1 1 2023 0.03580 L:\60625845\_A614 MRN DfT  
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35 7 1 V 1 1 2023 0.02970 L:\60625845\_A614 MRN DfT  
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36 1 2 V 1 1 2023 0.04215 L:\60625845\_A614 MRN DfT  
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DS.txt

37 2 2 V 1 1 2023 0.26847 L:\60625845\_A614 MRN DfT  
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38 3 2 V 1 1 2023 0.51348 L:\60625845\_A614 MRN DfT  
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DS.txt

39 4 2 V 1 1 2023 0.01642 L:\60625845\_A614 MRN DfT  
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40 5 2 V 1 1 2023 0.12038 L:\60625845\_A614 MRN DfT  
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41 6 2 V 1 1 2023 0.02110 L:\60625845\_A614 MRN DfT  
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DS.txt

42 7 2 V 1 1 2023 0.01800 L:\60625845\_A614 MRN DfT  
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43 1 3 V 1 1 2023 0.05244 L:\60625845\_A614 MRN DfT  
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44 2 3 V 1 1 2023 0.08229 L:\60625845\_A614 MRN DfT  
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45 3 3 V 1 1 2023 0.59467 L:\60625845\_A614 MRN DfT  
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DS.txt

46 4 3 V 1 1 2023 0.01757 L:\60625845\_A614 MRN DfT  
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DS.txt

47 5 3 V 1 1 2023 0.12883 L:\60625845\_A614 MRN DfT  
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48 6 3 V 1 1 2023 0.07300 L:\60625845\_A614 MRN DfT  
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DS.txt

49 7 3 V 1 1 2023 0.05130 L:\60625845\_A614 MRN DfT  
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50 1 4 V 1 1 2023 0.03143 L:\60625845\_A614 MRN DfT  
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DS.txt

51 2 4 V 1 1 2023 0.20975 L:\60625845\_A614 MRN DfT  
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DS.txt

52 3 4 V 1 1 2023 0.48823 L:\60625845\_A614 MRN DfT  
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53 4 4 V 1 1 2023 0.01757 L:\60625845\_A614 MRN DfT  
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54 5 4 V 1 1 2023 0.12883 L:\60625845\_A614 MRN DfT  
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57 1 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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58 2 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

59 3 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

60 4 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

61 5 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

62 6 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

63 7 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

64 1 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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65 2 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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66 3 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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67 4 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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68 5 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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69 6 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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70 7 2 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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71 1 3 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

72 2 3 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

73 3 3 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

74 4 3 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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76 6 3 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

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DM.txt

79 2 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

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DM.txt

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DM.txt

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84 7 4 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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85 1 1 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

86 2 1 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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87 3 1 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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89 5 1 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

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DS.txt

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101 3 3 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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102 4 3 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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103 5 3 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

104 6 3 T 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt



113 1 1 D 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

114 2 1 D 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

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DM.txt

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DM.txt

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161 7 3 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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162 1 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

163 2 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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164 3 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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165 4 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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166 5 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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167 6 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

168 7 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

169 1 1 V 1 0 2037 0.05500 L:\60625845\_A614 MRN DfT  
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DM.txt

170 2 1 V 1 0 2037 0.30304 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\V\_DDC\_3\_Mickledale AM 2037  
DM.txt

171 3 1 V 1 0 2037 0.43315 L:\60625845\_A614 MRN DfT  
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DM.txt

172 4 1 V 1 0 2037 0.01720 L:\60625845\_A614 MRN DfT  
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DM.txt

173 5 1 V 1 0 2037 0.12610 L:\60625845\_A614 MRN DfT  
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DM.txt

174 6 1 V 1 0 2037 0.03580 L:\60625845\_A614 MRN DfT  
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DM.txt

175 7 1 V 1 0 2037 0.02970 L:\60625845\_A614 MRN DfT  
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DM.txt

176 1 2 V 1 0 2037 0.04215 L:\60625845\_A614 MRN DfT  
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DM.txt

177 2 2 V 1 0 2037 0.26847 L:\60625845\_A614 MRN DfT  
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DM.txt

178 3 2 V 1 0 2037 0.51348 L:\60625845\_A614 MRN DfT  
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DM.txt

179 4 2 V 1 0 2037 0.01642 L:\60625845\_A614 MRN DfT  
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DM.txt

180 5 2 V 1 0 2037 0.12038 L:\60625845\_A614 MRN DfT  
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DM.txt

181 6 2 V 1 0 2037 0.02110 L:\60625845\_A614 MRN DfT  
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DM.txt

182 7 2 V 1 0 2037 0.01800 L:\60625845\_A614 MRN DfT  
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DM.txt

183 1 3 V 1 0 2037 0.05244 L:\60625845\_A614 MRN DfT  
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DM.txt

184 2 3 V 1 0 2037 0.08229 L:\60625845\_A614 MRN DfT  
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DM.txt



185 3 3 V 1 0 2037 0.59467 L:\60625845\_A614 MRN DfT  
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DM.txt

186 4 3 V 1 0 2037 0.01757 L:\60625845\_A614 MRN DfT  
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DM.txt

187 5 3 V 1 0 2037 0.12883 L:\60625845\_A614 MRN DfT  
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DM.txt

188 6 3 V 1 0 2037 0.07300 L:\60625845\_A614 MRN DfT  
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DM.txt

189 7 3 V 1 0 2037 0.05130 L:\60625845\_A614 MRN DfT  
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190 1 4 V 1 0 2037 0.03143 L:\60625845\_A614 MRN DfT  
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191 2 4 V 1 0 2037 0.20975 L:\60625845\_A614 MRN DfT  
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192 3 4 V 1 0 2037 0.48823 L:\60625845\_A614 MRN DfT  
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DM.txt

193 4 4 V 1 0 2037 0.01757 L:\60625845\_A614 MRN DfT  
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194 5 4 V 1 0 2037 0.12883 L:\60625845\_A614 MRN DfT  
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195 6 4 V 1 0 2037 0.07300 L:\60625845\_A614 MRN DfT  
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196 7 4 V 1 0 2037 0.05130 L:\60625845\_A614 MRN DfT  
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197 1 1 V 1 1 2037 0.05500 L:\60625845\_A614 MRN DfT  
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198 2 1 V 1 1 2037 0.30304 L:\60625845\_A614 MRN DfT  
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DS.txt

199 3 1 V 1 1 2037 0.43315 L:\60625845\_A614 MRN DfT  
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200 4 1 V 1 1 2037 0.01720 L:\60625845\_A614 MRN DfT  
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DS.txt

201 5 1 V 1 1 2037 0.12610 L:\60625845\_A614 MRN DfT  
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DS.txt

202 6 1 V 1 1 2037 0.03580 L:\60625845\_A614 MRN DfT  
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203 7 1 V 1 1 2037 0.02970 L:\60625845\_A614 MRN DfT  
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204 1 2 V 1 1 2037 0.04215 L:\60625845\_A614 MRN DfT  
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DS.txt

205 2 2 V 1 1 2037 0.26847 L:\60625845\_A614 MRN DfT  
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206 3 2 V 1 1 2037 0.51348 L:\60625845\_A614 MRN DfT  
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DS.txt

207 4 2 V 1 1 2037 0.01642 L:\60625845\_A614 MRN DfT  
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DS.txt

208 5 2 V 1 1 2037 0.12038 L:\60625845\_A614 MRN DfT  
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209 6 2 V 1 1 2037 0.02110 L:\60625845\_A614 MRN DfT  
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210 7 2 V 1 1 2037 0.01800 L:\60625845\_A614 MRN DfT  
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DS.txt

211 1 3 V 1 1 2037 0.05244 L:\60625845\_A614 MRN DfT  
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DS.txt

212 2 3 V 1 1 2037 0.08229 L:\60625845\_A614 MRN DfT  
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DS.txt

213 3 3 V 1 1 2037 0.59467 L:\60625845\_A614 MRN DfT  
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DS.txt

214 4 3 V 1 1 2037 0.01757 L:\60625845\_A614 MRN DfT  
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DS.txt

215 5 3 V 1 1 2037 0.12883 L:\60625845\_A614 MRN DfT  
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DS.txt

216 6 3 V 1 1 2037 0.07300 L:\60625845\_A614 MRN DfT  
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217 7 3 V 1 1 2037 0.05130 L:\60625845\_A614 MRN DfT  
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218 1 4 V 1 1 2037 0.03143 L:\60625845\_A614 MRN DfT  
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219 2 4 V 1 1 2037 0.20975 L:\60625845\_A614 MRN DfT  
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220 3 4 V 1 1 2037 0.48823 L:\60625845\_A614 MRN DfT  
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222 5 4 V 1 1 2037 0.12883 L:\60625845\_A614 MRN DfT  
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294 7 2 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\Outputs V2\D\_DDC\_3\_Mickledale PM 2037  
DM.txt

295 1 3 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

296 2 3 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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297 3 3 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

299 5 3 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

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DM.txt

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DM.txt

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303 2 4 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

304 3 4 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

305 4 4 D 1 0 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

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DS.txt

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320 5 2 D 1 1 2037 1.00000 L:\60625845\_A614 MRN DfT  
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321 6 2 D 1 1 2037 1.00000 L:\60625845\_A614 MRN DfT  
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334 5 4 D 1 1 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

336 7 4 D 1 1 2037 1.00000 L:\60625845\_A614 MRN DfT  
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DS.txt

337 1 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

338 2 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

339 3 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

340 4 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

341 5 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

342 6 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

343 7 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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DM.txt

## SECTORS

\*mode Sector\_file\_name



**Lowdham**

## SCHEME SPECIFIC PARAMETERS

### PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-6\_Lowdham\_DCC\_Ph1

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2023

modelled\_yrs 2023

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

### TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00

3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_SOM\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

\*no. Veh/submode purpose person\_type

1 1 1 0

2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

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2	2	1	V	1	0	2023	0.31641	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_1\V_6_Lowdham_DDC_Ph1_AM 2023 DM.txt
3	3	1	V	1	0	2023	0.45226	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_1\V_6_Lowdham_DDC_Ph1_AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01500	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_1\V_6_Lowdham_DDC_Ph1_AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_1\V_6_Lowdham_DDC_Ph1_AM 2023 DM.txt



6 6 1 V 1 0 2023 0.03010 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\Outputs\_Phase\_1\V\_6\_Lowdham\_DDC\_Ph1\_  
AM 2023 DM.txt

7 7 1 V 1 0 2023 0.01880 L:\60625845\_A614 MRN DfT  
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AM 2023 DM.txt

8 1 2 V 1 0 2023 0.04320 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

9 2 2 V 1 0 2023 0.27515 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

10 3 2 V 1 0 2023 0.52626 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

11 4 2 V 1 0 2023 0.01470 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

12 5 2 V 1 0 2023 0.10780 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

13 6 2 V 1 0 2023 0.01850 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

14 7 2 V 1 0 2023 0.01430 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

15 1 3 V 1 0 2023 0.05581 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

16 2 3 V 1 0 2023 0.08757 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

17 3 3 V 1 0 2023 0.63282 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

18 4 3 V 1 0 2023 0.01636 L:\60625845\_A614 MRN DfT  
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19 5 3 V 1 0 2023 0.11994 L:\60625845\_A614 MRN DfT  
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20 6 3 V 1 0 2023 0.05730 L:\60625845\_A614 MRN DfT  
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21 7 3 V 1 0 2023 0.03020 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

22 1 4 V 1 0 2023 0.03345 L:\60625845\_A614 MRN DfT  
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23 2 4 V 1 0 2023 0.22320 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

24 3 4 V 1 0 2023 0.51955 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

25 4 4 V 1 0 2023 0.01636 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

26 5 4 V 1 0 2023 0.11994 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

27 6 4 V 1 0 2023 0.05730 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

28 7 4 V 1 0 2023 0.03020 L:\60625845\_A614 MRN DfT  
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29 1 1 V 1 1 2023 0.05743 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

30 2 1 V 1 1 2023 0.31641 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

31 3 1 V 1 1 2023 0.45226 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

32 4 1 V 1 1 2023 0.01500 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

33 5 1 V 1 1 2023 0.11000 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

34 6 1 V 1 1 2023 0.03010 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

35 7 1 V 1 1 2023 0.01880 L:\60625845\_A614 MRN DfT  
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36 1 2 V 1 1 2023 0.04320 L:\60625845\_A614 MRN DfT  
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PM 2023 DS.txt

37 2 2 V 1 1 2023 0.27515 L:\60625845\_A614 MRN DfT  
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PM 2023 DS.txt

38 3 2 V 1 1 2023 0.52626 L:\60625845\_A614 MRN DfT  
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39 4 2 V 1 1 2023 0.01470 L:\60625845\_A614 MRN DfT  
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40 5 2 V 1 1 2023 0.10780 L:\60625845\_A614 MRN DfT  
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PM 2023 DS.txt

41 6 2 V 1 1 2023 0.01850 L:\60625845\_A614 MRN DfT  
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42 7 2 V 1 1 2023 0.01430 L:\60625845\_A614 MRN DfT  
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PM 2023 DS.txt

43 1 3 V 1 1 2023 0.05581 L:\60625845\_A614 MRN DfT  
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44 2 3 V 1 1 2023 0.08757 L:\60625845\_A614 MRN DfT  
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45 3 3 V 1 1 2023 0.63282 L:\60625845\_A614 MRN DfT  
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46 4 3 V 1 1 2023 0.01636 L:\60625845\_A614 MRN DfT  
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48 6 3 V 1 1 2023 0.05730 L:\60625845\_A614 MRN DfT  
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156 2 3 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
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169 1 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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175 7 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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## SECTORS

\*mode Sector\_file\_name

## SCHEME SPECIFIC PARAMETERS

### PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-6\_Lowdham\_DCC\_Ph2

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2023

modelled\_yrs 2023

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

### TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00

3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_SOM\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4 ChangePer5

USER\_CLASSES

\*no. Veh/submode purpose person\_type

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3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

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2	2	1	V	1	0	2023	0.31641	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_2\V_6_Lowdham_DDC_Ph2_AM 2023 DM.txt
3	3	1	V	1	0	2023	0.45226	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_2\V_6_Lowdham_DDC_Ph2_AM 2023 DM.txt
4	4	1	V	1	0	2023	0.01500	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_2\V_6_Lowdham_DDC_Ph2_AM 2023 DM.txt
5	5	1	V	1	0	2023	0.11000	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\6-Lowdham-DDC\Outputs_Phase_2\V_6_Lowdham_DDC_Ph2_AM 2023 DM.txt

6 6 1 V 1 0 2023 0.03010 L:\60625845\_A614 MRN DfT  
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AM 2023 DM.txt

7 7 1 V 1 0 2023 0.01880 L:\60625845\_A614 MRN DfT  
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AM 2023 DM.txt

8 1 2 V 1 0 2023 0.04320 L:\60625845\_A614 MRN DfT  
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9 2 2 V 1 0 2023 0.27515 L:\60625845\_A614 MRN DfT  
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10 3 2 V 1 0 2023 0.52626 L:\60625845\_A614 MRN DfT  
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11 4 2 V 1 0 2023 0.01470 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

12 5 2 V 1 0 2023 0.10780 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

13 6 2 V 1 0 2023 0.01850 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt

14 7 2 V 1 0 2023 0.01430 L:\60625845\_A614 MRN DfT  
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PM 2023 DM.txt



15 1 3 V 1 0 2023 0.05581 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

16 2 3 V 1 0 2023 0.08757 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

17 3 3 V 1 0 2023 0.63282 L:\60625845\_A614 MRN DfT  
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IP 2023 DM.txt

18 4 3 V 1 0 2023 0.01636 L:\60625845\_A614 MRN DfT  
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19 5 3 V 1 0 2023 0.11994 L:\60625845\_A614 MRN DfT  
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20 6 3 V 1 0 2023 0.05730 L:\60625845\_A614 MRN DfT  
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21 7 3 V 1 0 2023 0.03020 L:\60625845\_A614 MRN DfT  
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22 1 4 V 1 0 2023 0.03345 L:\60625845\_A614 MRN DfT  
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23 2 4 V 1 0 2023 0.22320 L:\60625845\_A614 MRN DfT  
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24 3 4 V 1 0 2023 0.51955 L:\60625845\_A614 MRN DfT  
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25 4 4 V 1 0 2023 0.01636 L:\60625845\_A614 MRN DfT  
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26 5 4 V 1 0 2023 0.11994 L:\60625845\_A614 MRN DfT  
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27 6 4 V 1 0 2023 0.05730 L:\60625845\_A614 MRN DfT  
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OP 2023 DM.txt

28 7 4 V 1 0 2023 0.03020 L:\60625845\_A614 MRN DfT  
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29 1 1 V 1 1 2023 0.05743 L:\60625845\_A614 MRN DfT  
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30 2 1 V 1 1 2023 0.31641 L:\60625845\_A614 MRN DfT  
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31 3 1 V 1 1 2023 0.45226 L:\60625845\_A614 MRN DfT  
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AM 2023 DS.txt

32 4 1 V 1 1 2023 0.01500 L:\60625845\_A614 MRN DfT  
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33 5 1 V 1 1 2023 0.11000 L:\60625845\_A614 MRN DfT  
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38 3 2 V 1 1 2023 0.52626 L:\60625845\_A614 MRN DfT  
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41 6 2 V 1 1 2023 0.01850 L:\60625845\_A614 MRN DfT  
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42 7 2 V 1 1 2023 0.01430 L:\60625845\_A614 MRN DfT  
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43 1 3 V 1 1 2023 0.05581 L:\60625845\_A614 MRN DfT  
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45 3 3 V 1 1 2023 0.63282 L:\60625845\_A614 MRN DfT  
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46 4 3 V 1 1 2023 0.01636 L:\60625845\_A614 MRN DfT  
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47 5 3 V 1 1 2023 0.11994 L:\60625845\_A614 MRN DfT  
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48 6 3 V 1 1 2023 0.05730 L:\60625845\_A614 MRN DfT  
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51 2 4 V 1 1 2023 0.22320 L:\60625845\_A614 MRN DfT  
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52 3 4 V 1 1 2023 0.51955 L:\60625845\_A614 MRN DfT  
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61 5 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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62 6 1 T 1 0 2023 1.00000 L:\60625845\_A614 MRN DfT  
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OP 2023 DS.txt

165 4 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\Outputs\_Phase\_2\D\_6\_Lowdham\_DDC\_Ph2\_  
OP 2023 DS.txt

166 5 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\Outputs\_Phase\_2\D\_6\_Lowdham\_DDC\_Ph2\_  
OP 2023 DS.txt

167 6 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\Outputs\_Phase\_2\D\_6\_Lowdham\_DDC\_Ph2\_  
OP 2023 DS.txt

168 7 4 D 1 1 2023 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\Outputs\_Phase\_2\D\_6\_Lowdham\_DDC\_Ph2\_  
OP 2023 DS.txt

169 1 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

170 2 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

171 3 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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172 4 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

173 5 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

174 6 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
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175 7 X R 1 X XXXX 1.00000 L:\60625845\_A614 MRN DfT  
responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

## SECTORS

\*mode Sector\_file\_name

**Kirkhill**

## SCHEME SPECIFIC PARAMETERS

### PARAMETERS

TUBA\_version 1.9.14

run\_name TUBA-3\_Mickledale\_DCC\_V2

do\_min\_name DM

do\_som\_name DS

first\_yr 2023

horizon\_yr 2023

modelled\_yrs 2023

detail Yes

current\_yr 2020

print\_warn 20

P&R\_car\_speed 65.0

zones\_as\_sectors No

### TIME\_SLICES

*no.	duration(min)	annualisation	period	description
1	60	648	1	peak hour am 08:00-09:00
2	60	667	2	peak hour pm 17:00-18:00
3	60	2997	3	peak hour ip 10:00-16:00
4	60	4438	4	off peak hour

### SCHEMES\_DM

\*Mode 1st Construction year Opening\_yr Stage

DO\_MIN\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_MIN\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_MIN\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

SCHEMES\_DS

\*Mode 1st Construction year Opening\_yr Stage

DO\_SOM\_COSTS

\*Type Mode Funding Cost Price RPI

DO\_SOM\_PROFILE

\*Year Mode %Const %Land %Prep %Super %Maint %Op %Grant %Dev

DO\_SOM\_DELAY\_COSTS

\*Year Mode Business Commuting Other Freight

## BENEFIT\_CHANGE

\*% change p.a.

\*Start\_yr End\_yr Submode ChangePer1 ChangePer2 ChangePer3 ChangePer4  
ChangePer5

## USER\_CLASSES

*no.	Veh/submode	purpose	person_type
1	1	1	0
2	1	2	0
3	1	3	0
4	2	3	0
5	3	1	0
6	4	1	0
7	5	1	0

## INPUT\_MATRICES

*no.	userclasses	timeslice	type	format	scenario	year	factor	filename
1	1	1	V	1	0	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DM.txt
2	2	1	V	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DM.txt
3	3	1	V	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DM.txt
4	4	1	V	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DM.txt
5	5	1	V	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DM.txt

6 6 1 V 1 0 2023 0.00845 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_AM\_2023\_DM.txt

7 7 1 V 1 0 2023 0.01451 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_AM\_2023\_DM.txt

8 1 3 V 1 0 2023 0.05864 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

9 2 3 V 1 0 2023 0.09201 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

10 3 3 V 1 0 2023 0.66493 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

11 4 3 V 1 0 2023 0.11925 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

12 5 3 V 1 0 2023 0.01626 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

13 6 3 V 1 0 2023 0.01568 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

14 7 3 V 1 0 2023 0.03323 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

15 1 2 V 1 0 2023 0.04428 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

16 2 2 V 1 0 2023 0.28208 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

17 3 2 V 1 0 2023 0.53951 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

18 4 2 V 1 0 2023 0.09275 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\V\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

19	5	2	V	1	0	2023	0.01265	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_PM_2023_DM.txt								
20	6	2	V	1	0	2023	0.00652	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_PM_2023_DM.txt								
21	7	2	V	1	0	2023	0.02221	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_PM_2023_DM.txt								
22	1	4	V	1	0	2023	0.03710	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
23	2	4	V	1	0	2023	0.24762	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
24	3	4	V	1	0	2023	0.57640	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
25	4	4	V	1	0	2023	0.04811	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
26	5	4	V	1	0	2023	0.00656	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
27	6	4	V	1	0	2023	0.02515	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
28	7	4	V	1	0	2023	0.05905	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_OP_2023_DM.txt								
29	1	1	V	1	1	2023	0.05903	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt								
30	2	1	V	1	1	2023	0.32523	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt								
31	3	1	V	1	1	2023	0.46486	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt								



32	4	1	V	1	1	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt
33	5	1	V	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt
34	6	1	V	1	1	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt
35	7	1	V	1	1	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_AM_2023_DS.txt
36	1	3	V	1	1	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
37	2	3	V	1	1	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
38	3	3	V	1	1	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
39	4	3	V	1	1	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
40	5	3	V	1	1	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
41	6	3	V	1	1	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
42	7	3	V	1	1	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_IP_2023_DS.txt
43	1	2	V	1	1	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
44	2	2	V	1	1	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt

45	3	2	V	1	1	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
46	4	2	V	1	1	2023	0.09275	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
47	5	2	V	1	1	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
48	6	2	V	1	1	2023	0.00652	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
49	7	2	V	1	1	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_PM_2023_DS.txt
50	1	4	V	1	1	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
51	2	4	V	1	1	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
52	3	4	V	1	1	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
53	4	4	V	1	1	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
54	5	4	V	1	1	2023	0.00656	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
55	6	4	V	1	1	2023	0.02515	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
56	7	4	V	1	1	2023	0.05905	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\V_DDC_7_Kirk_Hill_OP_2023_DS.txt
57	1	1	T	1	0	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt

58	2	1	T	1	0	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
59	3	1	T	1	0	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
60	4	1	T	1	0	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
61	5	1	T	1	0	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
62	6	1	T	1	0	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
63	7	1	T	1	0	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DM.txt
64	1	3	T	1	0	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
65	2	3	T	1	0	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
66	3	3	T	1	0	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
67	4	3	T	1	0	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
68	5	3	T	1	0	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
69	6	3	T	1	0	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt
70	7	3	T	1	0	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DM.txt

71	1	2	T	1	0	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
72	2	2	T	1	0	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
73	3	2	T	1	0	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
74	4	2	T	1	0	2023	0.09275	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
75	5	2	T	1	0	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
76	6	2	T	1	0	2023	0.00652	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
77	7	2	T	1	0	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DM.txt
78	1	4	T	1	0	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
79	2	4	T	1	0	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
80	3	4	T	1	0	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
81	4	4	T	1	0	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
82	5	4	T	1	0	2023	0.00656	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
83	6	4	T	1	0	2023	0.02515	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt

84	7	4	T	1	0	2023	0.05905	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DM.txt
85	1	1	T	1	1	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
86	2	1	T	1	1	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
87	3	1	T	1	1	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
88	4	1	T	1	1	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
89	5	1	T	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
90	6	1	T	1	1	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
91	7	1	T	1	1	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_AM_2023_DS.txt
92	1	3	T	1	1	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
93	2	3	T	1	1	2023	0.09201	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
94	3	3	T	1	1	2023	0.66493	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
95	4	3	T	1	1	2023	0.11925	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
96	5	3	T	1	1	2023	0.01626	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt

97	6	3	T	1	1	2023	0.01568	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
98	7	3	T	1	1	2023	0.03323	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_IP_2023_DS.txt
99	1	2	T	1	1	2023	0.04428	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
100	2	2	T	1	1	2023	0.28208	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
101	3	2	T	1	1	2023	0.53951	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
102	4	2	T	1	1	2023	0.09275	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
103	5	2	T	1	1	2023	0.01265	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
104	6	2	T	1	1	2023	0.00652	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
105	7	2	T	1	1	2023	0.02221	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_PM_2023_DS.txt
106	1	4	T	1	1	2023	0.03710	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt
107	2	4	T	1	1	2023	0.24762	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt
108	3	4	T	1	1	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt
109	4	4	T	1	1	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt

110	5	4	T	1	1	2023	0.00656	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt								
111	6	4	T	1	1	2023	0.02515	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt								
112	7	4	T	1	1	2023	0.05905	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\T_DDC_7_Kirk_Hill_OP_2023_DS.txt								
113	1	1	D	1	0	2023	0.05903	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
114	2	1	D	1	0	2023	0.32523	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
115	3	1	D	1	0	2023	0.46486	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
116	4	1	D	1	0	2023	0.11257	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
117	5	1	D	1	0	2023	0.01535	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
118	6	1	D	1	0	2023	0.00845	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
119	7	1	D	1	0	2023	0.01451	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_AM_2023_DM.txt								
120	1	3	D	1	0	2023	0.05864	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_IP_2023_DM.txt								
121	2	3	D	1	0	2023	0.09201	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_IP_2023_DM.txt								
122	3	3	D	1	0	2023	0.66493	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_IP_2023_DM.txt								

123 4 3 D 1 0 2023 0.11925 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

124 5 3 D 1 0 2023 0.01626 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

125 6 3 D 1 0 2023 0.01568 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

126 7 3 D 1 0 2023 0.03323 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DM.txt

127 1 2 D 1 0 2023 0.04428 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

128 2 2 D 1 0 2023 0.28208 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

129 3 2 D 1 0 2023 0.53951 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

130 4 2 D 1 0 2023 0.09275 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

131 5 2 D 1 0 2023 0.01265 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

132 6 2 D 1 0 2023 0.00652 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

133 7 2 D 1 0 2023 0.02221 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DM.txt

134 1 4 D 1 0 2023 0.03710 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DM.txt

135 2 4 D 1 0 2023 0.24762 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DM.txt



136	3	4	D	1	0	2023	0.57640	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_OP_2023_DM.txt
137	4	4	D	1	0	2023	0.04811	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_OP_2023_DM.txt
138	5	4	D	1	0	2023	0.00656	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_OP_2023_DM.txt
139	6	4	D	1	0	2023	0.02515	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_OP_2023_DM.txt
140	7	4	D	1	0	2023	0.05905	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_OP_2023_DM.txt
141	1	1	D	1	1	2023	0.05903	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
142	2	1	D	1	1	2023	0.32523	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
143	3	1	D	1	1	2023	0.46486	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
144	4	1	D	1	1	2023	0.11257	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
145	5	1	D	1	1	2023	0.01535	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
146	6	1	D	1	1	2023	0.00845	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
147	7	1	D	1	1	2023	0.01451	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill AM_2023_DS.txt
148	1	3	D	1	1	2023	0.05864	L:\60625845_A614 MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs V2\D_DDC_7_Kirk_Hill_IP_2023_DS.txt

149 2 3 D 1 1 2023 0.09201 L:\60625845\_A614  
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150 3 3 D 1 1 2023 0.66493 L:\60625845\_A614  
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151 4 3 D 1 1 2023 0.11925 L:\60625845\_A614  
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152 5 3 D 1 1 2023 0.01626 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DS.txt

153 6 3 D 1 1 2023 0.01568 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DS.txt

154 7 3 D 1 1 2023 0.03323 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_IP\_2023\_DS.txt

155 1 2 D 1 1 2023 0.04428 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

156 2 2 D 1 1 2023 0.28208 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

157 3 2 D 1 1 2023 0.53951 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

158 4 2 D 1 1 2023 0.09275 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

159 5 2 D 1 1 2023 0.01265 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

160 6 2 D 1 1 2023 0.00652 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

161 7 2 D 1 1 2023 0.02221 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_PM\_2023\_DS.txt

162	1	4	D	1	1	2023	0.03710	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
163	2	4	D	1	1	2023	0.24762	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
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164	3	4	D	1	1	2023	0.57640	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
165	4	4	D	1	1	2023	0.04811	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
166	5	4	D	1	1	2023	0.00656	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
167	6	4	D	1	1	2023	0.02515	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
168	7	4	D	1	1	2023	0.05905	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
169	1	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
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170	2	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
171	3	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
172	4	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
173	5	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								
174	6	X	R	1	X	XXXX	1.00000	L:\60625845_A614
MRN DfT responses\08_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs								
V2\D_DDC_7_Kirk_Hill_OP_2023_DS.txt								

175 7 X R 1 X XXXX 1.00000 L:\60625845\_A614  
MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\Outputs  
V2\D\_DDC\_7\_Kirk\_Hill\_OP\_2023\_DS.txt

## SECTORS

\*mode Sector\_file\_name

## Appendix D – TUBA OUTPUTS

**Ollerton**

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Mon Nov 16, 2020 at 13:11:44

## TUBA ECONOMICS FILE DIFFERENCES

STANDARD ECONOMICS FILE USED

### INPUT\_SUMMARY

Run name TUBA-1\_Ollerton\_DCC

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC  
TUBAs\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC  
TUBAs\1-Ollerton-DDC\MasterFile - 1\_Ollerton\_DCC\_V2.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2023

Modelled years 2023

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750

Note: All monetary values are in 2010 market prices. All monetary values discounted to 2010 unless otherwise stated.

#### DM\_SCHEME\_COSTS

Do minimum scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.
Grant/Sub.	Dev._Cont						

#### DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.
Grant/Sub.	Dev._Cont						

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1633	1633
Car	2023	PM peak	1830	1830
Car	2023	Inter-peak	5466	5466
Car	2023	Off-peak	788	788
Car	2023	All	9717	9717
LGV Personal	2023	AM peak	31	31
LGV Personal	2023	PM peak	28	28
LGV Personal	2023	Inter-peak	118	118
LGV Personal	2023	Off-peak	17	17



LGV Personal	2023	All	194	194
LGV Freight	2023	AM peak	229	229
LGV Freight	2023	PM peak	208	208
LGV Freight	2023	Inter-peak	862	862
LGV Freight	2023	Off-peak	124	124
LGV Freight	2023	All	1424	1424
OGV1	2023	AM peak	78	78
OGV1	2023	PM peak	34	34
OGV1	2023	Inter-peak	389	389
OGV1	2023	Off-peak	56	56
OGV1	2023	All	557	557
OGV2	2023	AM peak	62	62
OGV2	2023	PM peak	40	40
OGV2	2023	Inter-peak	274	274
OGV2	2023	Off-peak	40	40
OGV2	2023	All	416	416
All	2023	AM peak	2033	2033
All	2023	PM peak	2141	2141
All	2023	Inter-peak	7109	7109
All	2023	Off-peak	1025	1025
All	2023	All	12309	12309

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	553	0	1401	921	2245	0	1463	972

## FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	626	589	89	659	612	89
LGV Personal	2023	0	36	1	0	37	1
LGV Freight	2023	3	264	6	3	270	6
OGV1	2023	0	188	0	0	194	0
OGV2	2023	0	236	0	0	254	0
All	2023	629	1313	96	663	1367	96
Car	Total	626	589	89	659	612	89
LGV Personal	Total	0	36	1	0	37	1
LGV Freight	Total	3	264	6	3	270	6
OGV1	Total	0	188	0	0	194	0
OGV2	Total	0	236	0	0	254	0
All	Total	629	1313	96	663	1367	96

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			
		DM	DS	Increase	DM	DS	Increase	
DM	DS	Increase	DM	DS	Increase			
Car	2023	2721	2846	125	54	57	3	110
115	5	165	172	8				
LGV Personal	2023	88	90	2	2	2	0	4
4	0	5	5	0				
LGV Freight	2023	646	661	14	13	13	0	26
27	1	39	40	1				
OGV1	2023	455	470	15	9	9	0	18
19	1	28	28	1				

OGV2 25	2023 2	571 35	614 37	43 3	11	12	1	23
All 190	2023 8	4481 271	4681 284	200 12	90	94	4	182
Car 115	Total 5	2721 165	2846 172	125 8	54	57	3	110
LGV Personal 4	Total 0	88 5	90 5	2 0	2	2	0	4
LGV Freight 27	Total 1	646 39	661 40	14 1	13	13	0	26
OGV1 19	Total 1	455 28	470 28	15 1	9	9	0	18
OGV2 25	Total 2	571 35	614 37	43 3	11	12	1	23
All 190	Total 8	4481 271	4681 284	200 12	90	94	4	182

#### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			Increase
		DM	DS	Increase	DM	DS	Increase	
DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
Car 0	2023 0	23 1	23 1	0 0	0 0	0 0	0 0	0 0
LGV Personal 0	2023 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
LGV Freight 0	2023 0	1 0	1 0	0 0	0 0	0 0	0 0	0 0
OGV1 0	2023 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
OGV2 0	2023 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
All 0	2023 1	24 1	24 0	0 0	0 0	0 0	0 0	0 0

Car	Total	23	23	0	0	0	0	0	0
0	1	1	0						
LGV Personal	Total	0	0	0	0	0	0	0	0
0	0	0	0	0	0				
LGV Freight	Total	1	1	0	0	0	0	0	0
0	0	0	0	0	0				
OGV1	Total	0	0	0	0	0	0	0	0
0	0	0	0	0	0				
OGV2	Total	0	0	0	0	0	0	0	0
0	0	0	0	0	0				
All	Total	24	24	0	0	0	0	0	0
0	1	1	0						

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			Increase	
		DM	DS	Increase	DM	DS	Increase		
DM	DS	cost (£000s, central)	cost (£000s, high)	cost (£000s, central)	cost (£000s, high)	cost (£000s, central)	cost (£000s, high)		
AM peak	2023	686	703	17	14	14	0	28	
29	1	42	43	1					
PM peak	2023	696	879	183	14	18	4	28	
36	7	42	53	11					
Inter-peak	2023	2709	2709	0	54	54	0	110	
110	0	164	164	0					
Off-peak	2023	391	391	0	8	8	0	16	
16	0	24	24	0					
AM peak	Total	686	703	17	14	14	0	28	
29	1	42	43	1					
PM peak	Total	696	879	183	14	18	4	28	
36	7	42	53	11					
Inter-peak	Total	2709	2709	0	54	54	0	110	
110	0	164	164	0					
Off-peak	Total	391	391	0	8	8	0	16	
16	0	24	24	0					

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			
		DM	DS	Increase	DM	DS	Increase	
DM	DS	Increase	DM	DS	Increase	DM	DS	Increase
AM peak	2023	4	4	0	0	0	0	0
0	0	0	0	0	0	0	0	0
PM peak	2023	5	5	0	0	0	0	0
0	0	0	0	0	0	0	0	0
Inter-peak	2023	14	14	0	0	0	0	0
0	0	0	0	0	0	0	0	0
Off-peak	2023	2	2	0	0	0	0	0
0	0	0	0	0	0	0	0	0
AM peak	Total	4	4	0	0	0	0	0
0	0	0	0	0	0	0	0	0
PM peak	Total	5	5	0	0	0	0	0
0	0	0	0	0	0	0	0	0
Inter-peak	Total	14	14	0	0	0	0	0
0	0	0	0	0	0	0	0	0
Off-peak	Total	2	2	0	0	0	0	0
0	0	0	0	0	0	0	0	0

MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	-1692	0	-62	-51	0	35
Road	Total	-1692	0	-62	-51	0	35

### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	-1302	0	-40	-11	0	23
LGV Personal	2023	-16	0	-1	0	0	0
LGV Freight	2023	-260	0	-4	-8	0	2
OGV1	2023	-58	0	-4	-11	0	2
OGV2	2023	-56	0	-13	-20	0	7
All	2023	-1692	0	-62	-51	0	35
Car	Total	-1302	0	-40	-11	0	23
LGV Personal	Total	-16	0	-1	0	0	0
LGV Freight	Total	-260	0	-4	-8	0	2
OGV1	Total	-58	0	-4	-11	0	2
OGV2	Total	-56	0	-13	-20	0	7
All	Total	-1692	0	-62	-51	0	35

### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	-1692	0	-62	-51	0	35
All	Total	-1692	0	-62	-51	0	35

## PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose Year User User\_Charges Vehicle\_Operating\_Cost Operator\_Rev Indirect

		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Business	2023	-449	0	-24	-51	0	13
Commuting	2023	-511	0	-13	0	0	8
Other	2023	-732	0	-26	0	0	15
Business	Total	-449	0	-24	-51	0	13
Commuting	Total	-511	0	-13	0	0	8
Other	Total	-732	0	-26	0	0	15

## PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period Year User User\_Charges Vehicle\_Operating\_Cost Operator\_Rev Indirect

		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-328	0	-5	-13	0	3
PM peak	2023	-1209	0	-57	-30	0	32
Inter-peak	2023	-153	0	0	-7	0	0
Off-peak	2023	-2	0	0	-0	0	0
AM peak	Total	-328	0	-5	-13	0	3
PM peak	Total	-1209	0	-57	-30	0	32
Inter-peak	Total	-153	0	0	-7	0	0
Off-peak	Total	-2	0	0	-0	0	0

## NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins 2 to 5 mins	-5 to -2 mins > 5 mins	-2 to 0 mins	0 to 2 mins	2 mins
Car 0	Business	2023	-9	-2	-2	1	0
Car 0	Business	Total	-9	-2	-2	1	0
Car 0	Commuting	2023	-56	-12	-6	5	0
Car 0	Commuting	Total	-56	-12	-6	5	0
Car 0	Other	2023	-169	-26	-34	15	0
Car 0	Other	Total	-169	-26	-34	15	0
LGV Personal 0	Business	2023	0	0	0	0	0
LGV Personal 0	Business	Total	0	0	0	0	0
LGV Personal 0	Commuting	2023	0	0	0	0	0
LGV Personal 0	Commuting	Total	0	0	0	0	0
LGV Personal 0	Other	2023	-3	-1	-1	0	0
LGV Personal 0	Other	Total	-3	-1	-1	0	0
LGV Freight 0	Business	2023	-21	-5	-5	2	0
LGV Freight 0	Business	Total	-21	-5	-5	2	0
LGV Freight 0	Commuting	2023	0	0	0	0	0



LGV Freight 0	Commuting	Total	0	0	0	0	0
LGV Freight 0	Other	2023	0	0	0	0	0
LGV Freight 0	Other	Total	0	0	0	0	0
OGV1 0	Business	2023	-3	-1	-2	0	0
OGV1 0	Business	Total	-3	-1	-2	0	0
OGV1 0	Commuting	2023	0	0	0	0	0
OGV1 0	Commuting	Total	0	0	0	0	0
OGV1 0	Other	2023	0	0	0	0	0
OGV1 0	Other	Total	0	0	0	0	0
OGV2 0	Business	2023	-3	-1	-1	0	0
OGV2 0	Business	Total	-3	-1	-1	0	0
OGV2 0	Commuting	2023	0	0	0	0	0
OGV2 0	Commuting	Total	0	0	0	0	0
OGV2 0	Other	2023	0	0	0	0	0
OGV2 0	Other	Total	0	0	0	0	0

## MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
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Car 0	Business	2023	-54	-13	-13	5	0
Car 0	Business	Total	-54	-13	-13	5	0
Car 0	Commuting	2023	-414	-87	-48	38	0
Car 0	Commuting	Total	-414	-87	-48	38	0
Car 0	Other	2023	-568	-86	-115	51	0
Car 0	Other	Total	-568	-86	-115	51	0
LGV Personal 0	Business	2023	0	0	0	0	0
LGV Personal 0	Business	Total	0	0	0	0	0
LGV Personal 0	Commuting	2023	0	0	0	0	0
LGV Personal 0	Commuting	Total	0	0	0	0	0
LGV Personal 0	Other	2023	-12	-3	-3	1	0
LGV Personal 0	Other	Total	-12	-3	-3	1	0
LGV Freight 0	Business	2023	-192	-43	-44	17	0
LGV Freight 0	Business	Total	-192	-43	-44	17	0
LGV Freight 0	Commuting	2023	0	0	0	0	0
LGV Freight 0	Commuting	Total	0	0	0	0	0
LGV Freight 0	Other	2023	0	0	0	0	0
LGV Freight 0	Other	Total	0	0	0	0	0

OGV1 0	Business	2023	-30	-14	-17	3	0
OGV1 0	Business	Total	-30	-14	-17	3	0
OGV1 0	Commuting	2023	0	0	0	0	0
OGV1 0	Commuting	Total	0	0	0	0	0
OGV1 0	Other	2023	0	0	0	0	0
OGV1 0	Other	Total	0	0	0	0	0
OGV2 0	Business	2023	-36	-11	-12	3	0
OGV2 0	Business	Total	-36	-11	-12	3	0
OGV2 0	Commuting	2023	0	0	0	0	0
OGV2 0	Commuting	Total	0	0	0	0	0
OGV2 0	Other	2023	0	0	0	0	0
OGV2 0	Other	Total	0	0	0	0	0

## TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins 2 to 5 mins	-5 to -2 mins > 5 mins	-2 to 0 mins	0 to 2 mins	2 mins
Car 0	Business	2023	-63	-15	-15	5	0
Car 0	Business	Total	-63	-15	-15	5	0
Car 0	Commuting	2023	-425	-86	-49	36	0

Car 0	Commuting	Total	-425	-86	-49	36	0
Car 0	Other	2023	-588	-85	-116	48	0
Car 0	Other	Total	-588	-85	-116	48	0
LGV Personal 0	Business	2023	0	0	0	0	0
LGV Personal 0	Business	Total	0	0	0	0	0
LGV Personal 0	Commuting	2023	0	0	0	0	0
LGV Personal 0	Commuting	Total	0	0	0	0	0
LGV Personal 0	Other	2023	-12	-2	-3	1	0
LGV Personal 0	Other	Total	-12	-2	-3	1	0
LGV Freight 0	Business	2023	-202	-42	-46	16	0
LGV Freight 0	Business	Total	-202	-42	-46	16	0
LGV Freight 0	Commuting	2023	0	0	0	0	0
LGV Freight 0	Commuting	Total	0	0	0	0	0
LGV Freight 0	Other	2023	0	0	0	0	0
LGV Freight 0	Other	Total	0	0	0	0	0
OGV1 0	Business	2023	-39	-17	-20	3	0
OGV1 0	Business	Total	-39	-17	-20	3	0
OGV1 0	Commuting	2023	0	0	0	0	0

OGV1 0	Commuting	Total	0	0	0	0	0
OGV1 0	Other	2023	0	0	0	0	0
OGV1 0	Other	Total	0	0	0	0	0
OGV2 0	Business	2023	-58	-19	-18	6	0
OGV2 0	Business	Total	-58	-19	-18	6	0
OGV2 0	Commuting	2023	0	0	0	0	0
OGV2 0	Commuting	Total	0	0	0	0	0
OGV2 0	Other	2023	0	0	0	0	0
OGV2 0	Other	Total	0	0	0	0	0

## NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car 0	Business 0	2023 0	0	-12	0	0	0	0	0	0
Car 0	Business 0	Total 0	0	-12	0	0	0	0	0	0
Car 0	Commuting 0	2023 0	0	-70	0	0	0	0	0	0
Car 0	Commuting 0	Total 0	0	-70	0	0	0	0	0	0
Car 0	Other 0	2023 0	0	-214	0	0	0	0	0	0
Car 0	Other 0	Total 0	0	-214	0	0	0	0	0	0

LGV Personal	Business	2023	0	0	0	0	0
0	0	0					
LGV Personal	Business	Total	0	0	0	0	0
0	0	0					
LGV Personal	Commuting	2023	0	0	0	0	0
0	0	0					
LGV Personal	Commuting	Total	0	0	0	0	0
0	0	0					
LGV Personal	Other	2023	0	-5	0	0	0
0	0	0					
LGV Personal	Other	Total	0	-5	0	0	0
0	0	0					
LGV Freight	Business	2023	0	-28	0	0	0
0	0	0					
LGV Freight	Business	Total	0	-28	0	0	0
0	0	0					
LGV Freight	Commuting	2023	0	0	0	0	0
0	0	0					
LGV Freight	Commuting	Total	0	0	0	0	0
0	0	0					
LGV Freight	Other	2023	0	0	0	0	0
0	0	0					
LGV Freight	Other	Total	0	0	0	0	0
0	0	0					
OGV1	Business	2023	0	-5	0	0	0
0	0	0					
OGV1	Business	Total	0	-5	0	0	0
0	0	0					
OGV1	Commuting	2023	0	0	0	0	0
0	0	0					
OGV1	Commuting	Total	0	0	0	0	0
0	0	0					
OGV1	Other	2023	0	0	0	0	0
0	0	0					
OGV1	Other	Total	0	0	0	0	0
0	0	0					



LGV Personal	Commuting	Total	0	0	0	0	0
0	0	0					
LGV Personal	Other	2023	0	-16	0	0	0
0	0	0					
LGV Personal	Other	Total	0	-16	0	0	0
0	0	0					
LGV Freight	Business	2023	0	-260	0	0	0
0	0	0					
LGV Freight	Business	Total	0	-260	0	0	0
0	0	0					
LGV Freight	Commuting	2023	0	0	0	0	0
0	0	0					
LGV Freight	Commuting	Total	0	0	0	0	0
0	0	0					
LGV Freight	Other	2023	0	0	0	0	0
0	0	0					
LGV Freight	Other	Total	0	0	0	0	0
0	0	0					
OGV1	Business	2023	0	-58	0	0	0
0	0	0					
OGV1	Business	Total	0	-58	0	0	0
0	0	0					
OGV1	Commuting	2023	0	0	0	0	0
0	0	0					
OGV1	Commuting	Total	0	0	0	0	0
0	0	0					
OGV1	Other	2023	0	0	0	0	0
0	0	0					
OGV1	Other	Total	0	0	0	0	0
0	0	0					
OGV2	Business	2023	0	-56	0	0	0
0	0	0					
OGV2	Business	Total	0	-56	0	0	0
0	0	0					
OGV2	Commuting	2023	0	0	0	0	0
0	0	0					





LGV Freight	Business	2023	0	-273	0	0	0
0	0	0					
LGV Freight	Business	Total	0	-273	0	0	0
0	0	0					
LGV Freight	Commuting	2023	0	0	0	0	0
0	0	0					
LGV Freight	Commuting	Total	0	0	0	0	0
0	0	0					
LGV Freight	Other	2023	0	0	0	0	0
0	0	0					
LGV Freight	Other	Total	0	0	0	0	0
0	0	0					
OGV1	Business	2023	0	-74	0	0	0
0	0	0					
OGV1	Business	Total	0	-74	0	0	0
0	0	0					
OGV1	Commuting	2023	0	0	0	0	0
0	0	0					
OGV1	Commuting	Total	0	0	0	0	0
0	0	0					
OGV1	Other	2023	0	0	0	0	0
0	0	0					
OGV1	Other	Total	0	0	0	0	0
0	0	0					
OGV2	Business	2023	0	-89	0	0	0
0	0	0					
OGV2	Business	Total	0	-89	0	0	0
0	0	0					
OGV2	Commuting	2023	0	0	0	0	0
0	0	0					
OGV2	Commuting	Total	0	0	0	0	0
0	0	0					
OGV2	Other	2023	0	0	0	0	0
0	0	0					
OGV2	Other	Total	0	0	0	0	0
0	0	0					

## SENSITIVITY

Total user benefits as a percentage of total DM user costs

	Modelled Years
Mode	2023
Road	-62.82%

Economy: Economic Efficiency of the Transport System (TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-511	-511
Vehicle operating costs	-13	-13
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-524</b>	<b>-524</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-732	-732
Vehicle operating costs	-26	-26
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-758</b>	<b>-758</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	-449	-74	-375
Vehicle operating costs	-75	-13	-61
User charges	0	0	0
During Construction & Maintenance	0	0	0

Subtotal	-524	-88	-436
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Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

Other business Impacts

Developer contributions	0	0
NET BUSINESS IMPACT	-524	

TOTAL

Present Value of Transport Economic

Efficiency Benefits (TEE)	-1806
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	0	0
Investment Costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	-35	-35
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#### TOTALS

Broad Transport Budget	0	0
Wider Public Finances	-35	-35

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	-8
Economic Efficiency: Consumer Users (Commuting)	-524
Economic Efficiency: Consumer Users (Other)	-758
Economic Efficiency: Business Users and Providers	-524
Wider Public Finances (Indirect Taxation Revenues)	35

Present Value of Benefits (PVB)	-1779
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Broad Transport Budget	0
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Present Value of Costs (PVC)	0
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#### OVERALL IMPACTS

Net Present Value (NPV)	-1779
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Benefit to Cost Ratio (BCR)	0.000
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Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in

transport appraisals, together with some where monetisation is in prospect. There may also be other significant

costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis

presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

#### TUBA Run Information

- calculations completed

#### File Summary

\* Run Name : TUBA-1\_Ollerton\_DCC

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\MasterFile - 1\_Ollerton\_DCC\_V2.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Ollerton\_DCC\_Out\_V2.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\1-Ollerton-DDC\Ollerton\_DCC\_Out\_V2.log

\* User ID : philip.g.jones

\* Computer ID : UKDBYL98NWNQ2

Elapsed time : 0hrs 0mins 1secs

**Mickledale**



Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Thu Dec 3, 2020 at 10:04:04

## TUBA ECONOMICS FILE DIFFERENCES

### STANDARD ECONOMICS FILE USED

### INPUT\_SUMMARY

Run name TUBA-3\_Mickledale\_DCC\_V2

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC  
TUBAs\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\3-  
Mickledale-DDC\MasterFile - 3\_Mickledale\_DCC\_V2.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2023

Modelled years 2023

Time period Total hours

AM peak	648
PM peak	667
Inter-peak	2997
Off-peak	4438
Total	8750

Note: All monetary values are in 2010 market prices. All monetary values discounted to 2010 unless otherwise stated.

#### DM\_SCHEME\_COSTS

Do minimum scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1142	989
Car	2023	PM peak	1223	1012
Car	2023	Inter-peak	3242	2667
Car	2023	Off-peak	469	385
Car	2023	All	6076	5054
LGV Personal	2023	AM peak	25	22
LGV Personal	2023	PM peak	24	20
LGV Personal	2023	Inter-peak	78	64
LGV Personal	2023	Off-peak	11	9
LGV Personal	2023	All	139	115
LGV Freight	2023	AM peak	182	158
LGV Freight	2023	PM peak	179	148
LGV Freight	2023	Inter-peak	573	471
LGV Freight	2023	Off-peak	83	68

LGV Freight	2023 All	1016	845
OGV1	2023 AM peak	52	45
OGV1	2023 PM peak	31	26
OGV1	2023 Inter-peak	324	267
OGV1	2023 Off-peak	47	39
OGV1	2023 All	454	376
OGV2	2023 AM peak	43	37
OGV2	2023 PM peak	27	22
OGV2	2023 Inter-peak	228	188
OGV2	2023 Off-peak	33	27
OGV2	2023 All	331	274
All	2023 AM peak	1443	1251
All	2023 PM peak	1484	1228
All	2023 Inter-peak	4445	3657
All	2023 Off-peak	644	528
All	2023 All	8016	6663

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
------	------	------------	--------------	------------	---------------	------------	--------------	------------	---------------

Road	2023	133	0	916	610	28	0	800	503
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## FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	380	360	53	331	314	46
LGV Personal	2023	0	25	1	0	22	0
LGV Freight	2023	2	185	4	2	161	3
OGV1	2023	0	144	0	0	127	0
OGV2	2023	0	174	0	0	153	0
All	2023	382	888	58	333	777	50
Car	Total	380	360	53	331	314	46
LGV Personal	Total	0	25	1	0	22	0
LGV Freight	Total	2	185	4	2	161	3
OGV1	Total	0	144	0	0	127	0
OGV2	Total	0	174	0	0	153	0
All	Total	382	888	58	333	777	50

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s,	
		DM	DS	Increase	DM	DS	Increase	DM	
DS	Increase	DM	DS	Increase					
Car	2023	1659	1446	-213	33	29	-4	67	59
-9	100	88	-13						
LGV Personal	2023	62	54	-8	1	1	-0	2	2
-0	4	3	-0						
LGV Freight	2023	451	394	-57	9	8	-1	18	16
-2	27	24	-3						
OGV1	2023	349	307	-42	7	6	-1	14	12
-2	21	19	-3						
OGV2	2023	421	370	-51	8	7	-1	17	15
-2	26	22	-3						
All	2023	2942	2570	-371	59	51	-7	119	104
-15	178	156	-22						
Car	Total	1659	1446	-213	33	29	-4	67	59
-9	100	88	-13						
LGV Personal	Total	62	54	-8	1	1	-0	2	2
-0	4	3	-0						
LGV Freight	Total	451	394	-57	9	8	-1	18	16
-2	27	24	-3						
OGV1	Total	349	307	-42	7	6	-1	14	12
-2	21	19	-3						
OGV2	Total	421	370	-51	8	7	-1	17	15
-2	26	22	-3						

All	Total	2942	2570	-371	59	51	-7	119	104
-15	178	156	-22						

### CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)		
		DM	DS	Increase	DM	DS	Increase	DM	DS	
DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS	
Car	2023	14	12	-2	0	0	-0	0	0	-
0	0	0	-0							
LGV Personal	2023	0	0	-0	0	0	-0	0	0	
-0	0	0	-0							
LGV Freight	2023	1	1	-0	0	0	-0	0	0	
-0	0	0	-0							
OGV1	2023	0	0	0	0	0	0	0	0	
0	0	0	0							
OGV2	2023	0	0	0	0	0	0	0	0	
0	0	0	0							
All	2023	15	13	-2	0	0	-0	0	0	-0
0	0	-0								
Car	Total	14	12	-2	0	0	-0	0	0	-0
0	0	-0								
LGV Personal	Total	0	0	-0	0	0	-0	0	0	
-0	0	0	-0							

LGV Freight	Total	1	1	-0	0	0	-0	0	0	
-0	0	0	-0							
OGV1	Total	0	0	0	0	0	0	0	0	
0	0	0	0							
OGV2	Total	0	0	0	0	0	0	0	0	
0	0	0	0							
All	Total	15	13	-2	0	0	-0	0	0	-0
0	0	-0								

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	DS
AM peak	2023	518	453	-64	10	9	-1	21	18
-3	31	27	-4						
PM peak	2023	504	419	-85	10	8	-2	20	17
-3	31	25	-5						
Inter-peak	2023	1776	1484	-292	36	30	-6	72	60
-12	108	90	-18						
Off-peak	2023	144	214	70	3	4	1	6	9
3	9	13	4						
AM peak	Total	518	453	-64	10	9	-1	21	18
-3	31	27	-4						



PM peak	Total	504	419	-85	10	8	-2	20	17
-3	31	25	-5						
Inter-peak	Total	1776	1484	-292	36	30	-6	72	60
-12	108	90	-18						
Off-peak	Total	144	214	70	3	4	1	6	9
3	9	13	4						

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s,	
		DM	DS	Increase	DM	DS	Increase	central)	
DS	Increase	DM	DS	Increase				DM	
AM peak	2023	3	2	-0	0	0	-0	0	0
-0	0	0	-0						

PM peak	2023	3	3	-1	0	0	-0	0	0	
-0	0	0	-0							
Inter-peak	2023	8	7	-1	0	0	-0	0	0	
-0	0	0	-0							
Off-peak	2023	1	1	0	0	0	0	0	0	
0	0	0	0							
AM peak	Total	3	2	-0	0	0	-0	0	0	-
0	0	0	-0							
PM peak	Total	3	3	-1	0	0	-0	0	0	-
0	0	0	-0							
Inter-peak	Total	8	7	-1	0	0	-0	0	0	-
0	0	0	-0							
Off-peak	Total	1	1	0	0	0	0	0	0	0
0	0	0								

## MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	86	0	-22	62	0	-65
Road	Total	86	0	-22	62	0	-65

## SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	59	0	-11	56	0	-39
LGV Personal	2023	1	0	-0	3	0	-1
LGV Freight	2023	16	0	-3	1	0	-9
OGV1	2023	6	0	-3	1	0	-7
OGV2	2023	5	0	-4	2	0	-8
All	2023	86	0	-22	62	0	-65
Car	Total	59	0	-11	56	0	-39
LGV Personal	Total	1	0	-0	3	0	-1
LGV Freight	Total	16	0	-3	1	0	-9
OGV1	Total	6	0	-3	1	0	-7
OGV2	Total	5	0	-4	2	0	-8
All	Total	86	0	-22	62	0	-65

## PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	86	0	-22	62	0	-65
All	Total	86	0	-22	62	0	-65

## PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	31	0	-11	4	0	-28
Commuting	2023	18	0	-4	12	0	-8
Other	2023	38	0	-7	45	0	-30
Business	Total	31	0	-11	4	0	-28
Commuting	Total	18	0	-4	12	0	-8
Other	Total	38	0	-7	45	0	-30

## PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
AM peak	2023	20	0	1	9	0	-11
PM peak	2023	23	0	2	13	0	-15
Inter-peak	2023	43	0	8	35	0	-51
Off-peak	2023	1	0	-33	5	0	12
AM peak	Total	20	0	1	9	0	-11

PM peak	Total	23	0	2	13	0	-15
Inter-peak	Total	43	0	8	35	0	-51
Off-peak	Total	1	0	-33	5	0	12

## NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	1	0	0
Car	Business	Total	0	0	-0	1	0	0
Car	Commuting	2023	0	0	-0	2	0	0
Car	Commuting	Total	0	0	-0	2	0	0
Car	Other	2023	0	0	-0	11	0	0
Car	Other	Total	0	0	-0	11	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	0	0	0
LGV Personal	Other	Total	0	0	-0	0	0	0
LGV Freight	Business	2023	0	0	-0	2	0	0

LGV Freight	Business	Total	0	0	-0	2	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	1	0	0
OGV1	Business	Total	0	0	-0	1	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	0	0	0
OGV2	Business	Total	0	0	-0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-0	4	0	0
Car	Business	Total	0	0	-0	4	0	0
Car	Commuting	2023	0	0	-0	18	0	0
Car	Commuting	Total	0	0	-0	18	0	0
Car	Other	2023	0	0	-1	38	0	0
Car	Other	Total	0	0	-1	38	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	1	0	0
LGV Personal	Other	Total	0	0	-0	1	0	0
LGV Freight	Business	2023	0	0	-0	16	0	0
LGV Freight	Business	Total	0	0	-0	16	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	6	0	0

OGV1	Business	Total	0	0	-0	6	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-0	5	0	0
OGV2	Business	Total	0	0	-0	5	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-1	5	0	0
Car	Business	Total	0	0	-1	5	0	0
Car	Commuting	2023	0	0	-4	30	0	0
Car	Commuting	Total	0	0	-4	30	0	0
Car	Other	2023	0	0	-3	76	0	0



Car	Other	Total	0	0	-3	76	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-0	3	0	0
LGV Personal	Other	Total	0	0	-0	3	0	0
LGV Freight	Business	2023	0	0	-5	19	0	0
LGV Freight	Business	Total	0	0	-5	19	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-5	9	0	0
OGV1	Business	Total	0	0	-5	9	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-6	8	0	0
OGV2	Business	Total	0	0	-6	8	0	0



LGV Personal Business	Total	0	0	0	0	0	0
0	0						
LGV Personal Commuting	2023	0	0	0	0	0	0
0	0						
LGV Personal Commuting	Total	0	0	0	0	0	0
0	0						
LGV Personal Other	2023	0	0	0	0	0	0
0	0						
LGV Personal Other	Total	0	0	0	0	0	0
0	0						
LGV Freight Business	2023	0	2	0	0	0	0
0	0						
LGV Freight Business	Total	0	2	0	0	0	0
0	0						
LGV Freight Commuting	2023	0	0	0	0	0	0
0	0						
LGV Freight Commuting	Total	0	0	0	0	0	0
0	0						
LGV Freight Other	2023	0	0	0	0	0	0
0	0						
LGV Freight Other	Total	0	0	0	0	0	0
0	0						
OGV1 Business	2023	0	1	0	0	0	0
0	0						
OGV1 Business	Total	0	1	0	0	0	0
0	0						

OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0	0							
OGV1	Other	Total	0	0	0	0	0	0
0	0							
OGV2	Business	2023	0	0	0	0	0	0
0	0							
OGV2	Business	Total	0	0	0	0	0	0
0	0							
OGV2	Commuting	2023	0	0	0	0	0	0
0	0							
OGV2	Commuting	Total	0	0	0	0	0	0
0	0							
OGV2	Other	2023	0	0	0	0	0	0
0	0							
OGV2	Other	Total	0	0	0	0	0	0
0	0							

## MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
--------------	---------	------	---------	------------	-------------	--------------	--------------	---------------	----------------	----------

Car	Business	2023	0	4	0	0	0	0
0	0							

Car	Business	Total	0	4	0	0	0	0
0	0							

Car	Commuting	2023	0	18	0	0	0	0
0	0							

Car	Commuting	Total	0	18	0	0	0	0
0	0							

Car	Other	2023	0	37	0	0	0	0
0	0							

Car	Other	Total	0	37	0	0	0	0
0	0							

LGV Personal	Business	2023	0	0	0	0	0	0
0	0							

LGV Personal	Business	Total	0	0	0	0	0	0
0	0							

LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							

LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							

LGV Personal	Other	2023	0	1	0	0	0	0
0	0							

LGV Personal	Other	Total	0	1	0	0	0	0
0	0							

LGV Freight	Business	2023	0	16	0	0	0	0
0	0							

LGV Freight	Business	Total	0	16	0	0	0	0
0	0							

LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							

LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							

LGV Freight	Other	2023	0	0	0	0	0	0
0	0							

LGV Freight	Other	Total	0	0	0	0	0	0
0	0							

OGV1	Business	2023	0	6	0	0	0	0
0	0							

OGV1	Business	Total	0	6	0	0	0	0
0	0							

OGV1	Commuting	2023	0	0	0	0	0	0
0	0							

OGV1	Commuting	Total	0	0	0	0	0	0
0	0							

OGV1	Other	2023	0	0	0	0	0	0
0	0							

OGV1	Other	Total	0	0	0	0	0	0
0	0							

OGV2	Business	2023	0	5	0	0	0	0
0	0							

OGV2	Business	Total	0	5	0	0	0	0
0	0							



LGV Personal Business	2023	0	0	0	0	0	0
0	0						
LGV Personal Business	Total	0	0	0	0	0	0
0	0						
LGV Personal Commuting	2023	0	0	0	0	0	0
0	0						
LGV Personal Commuting	Total	0	0	0	0	0	0
0	0						
LGV Personal Other	2023	0	3	0	0	0	0
0	0						
LGV Personal Other	Total	0	3	0	0	0	0
0	0						
LGV Freight Business	2023	0	14	0	0	0	0
0	0						
LGV Freight Business	Total	0	14	0	0	0	0
0	0						
LGV Freight Commuting	2023	0	0	0	0	0	0
0	0						
LGV Freight Commuting	Total	0	0	0	0	0	0
0	0						
LGV Freight Other	2023	0	0	0	0	0	0
0	0						
LGV Freight Other	Total	0	0	0	0	0	0
0	0						
OGV1 Business	2023	0	4	0	0	0	0
0	0						



OGV1	Business	Total	0	4	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0	0							
OGV1	Other	Total	0	0	0	0	0	0
0	0							
OGV2	Business	2023	0	2	0	0	0	0
0	0							
OGV2	Business	Total	0	2	0	0	0	0
0	0							
OGV2	Commuting	2023	0	0	0	0	0	0
0	0							
OGV2	Commuting	Total	0	0	0	0	0	0
0	0							
OGV2	Other	2023	0	0	0	0	0	0
0	0							
OGV2	Other	Total	0	0	0	0	0	0
0	0							

## SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023

Road 7.62%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	18	18
Vehicle operating costs	9	9
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>26</b>	<b>26</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	38	38
Vehicle operating costs	38	38
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>76</b>	<b>76</b>

Business All Modes Road Personal Road Freight

Travel Time	31	4	27	
Vehicle operating costs	-7	0	-7	
User charges	0	0	0	
During Construction & Maintenance		0	0	0
Subtotal	24	4	20	

#### Private Sector Provider Impacts

Revenue	0	0	
Operating costs	0	0	
Investment costs	0	0	
Grant/subsidy	0	0	
Subtotal	0	0	

#### Other business Impacts

Developer contributions	0	0	
NET BUSINESS IMPACT		24	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE) 126

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	0	0
Investment Costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

Central Government Funding: Transport	ALL MODES	Road
Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	65	65
-----------------------	----	----

TOTALS

Broad Transport Budget	0	0
------------------------	---	---

Wider Public Finances	65	65
-----------------------	----	----

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	15
------------------	----

Economic Efficiency: Consumer Users (Commuting)	26
---	----

Economic Efficiency: Consumer Users (Other)	76
---	----

Economic Efficiency: Business Users and Providers	24
---	----

Wider Public Finances (Indirect Taxation Revenues)	-65
--	-----

Present Value of Benefits (PVB)	76
---------------------------------	----

Broad Transport Budget	0
Present Value of Costs (PVC)	0
OVERALL IMPACTS	
Net Present Value (NPV)	76
Benefit to Cost Ratio (BCR)	0.000

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in

transport appraisals, together with some where monetisation is in prospect. There may also be other significant

costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis

presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-3\_Mickledale\_DCC\_V2

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\MasterFile - 3\_Mickledale\_DCC\_V2.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\3\_Mickledale\_DDC\_Core\_Outputs\_V2.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\3-Mickeldale-DDC\3\_Mickledale\_DDC\_Core\_Outputs\_V2.log

\* User ID : Jonathon.Bailey2

\* Computer ID : UKBHM2LT50164

Elapsed time : 0hrs 0mins 1secs

**Lowdham**



Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Tue Dec 8, 2020 at 15:24:18

## TUBA ECONOMICS FILE DIFFERENCES

### STANDARD ECONOMICS FILE USED

### INPUT\_SUMMARY

Run name TUBA-6\_Lowdham\_DCC\_Ph1

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\MasterFile - 6\_Lowdham\_DCC\_Ph1.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2023

Modelled years 2023

Time period Total hours

AM peak	648
PM peak	667
Inter-peak	2997
Off-peak	4438
Total	8750

Note: All monetary values are in 2010 market prices. All monetary values discounted to 2010 unless otherwise stated.

#### DM\_SCHEME\_COSTS

Do minimum scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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#### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1954	1954
Car	2023	PM peak	2091	2091
Car	2023	Inter-peak	5769	5769
Car	2023	Off-peak	837	837
Car	2023	All	10652	10652
LGV Personal	2023	AM peak	35	35
LGV Personal	2023	PM peak	36	36
LGV Personal	2023	Inter-peak	122	122
LGV Personal	2023	Off-peak	18	18
LGV Personal	2023	All	211	211
LGV Freight	2023	AM peak	260	260
LGV Freight	2023	PM peak	267	267
LGV Freight	2023	Inter-peak	891	891
LGV Freight	2023	Off-peak	129	129

LGV Freight	2023 All	1548	1548
OGV1	2023 AM peak	71	71
OGV1	2023 PM peak	46	46
OGV1	2023 Inter-peak	426	426
OGV1	2023 Off-peak	62	62
OGV1	2023 All	605	605
OGV2	2023 AM peak	44	44
OGV2	2023 PM peak	35	35
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	337	337
All	2023 AM peak	2366	2366
All	2023 PM peak	2476	2476
All	2023 Inter-peak	7433	7433
All	2023 Off-peak	1078	1078
All	2023 All	13353	13353

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
------	------	------------	--------------	------------	---------------	------------	--------------	------------	---------------

Road	2023	524	0	1513	977	4565	0	1680	1093
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## FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	702	661	98	788	721	98
LGV Personal	2023	0	40	1	1	43	1
LGV Freight	2023	4	295	6	4	313	6
OGV1	2023	0	205	0	0	230	0
OGV2	2023	0	191	0	0	233	0
All	2023	706	1392	105	792	1540	105
Car	Total	702	661	98	788	721	98
LGV Personal	Total	0	40	1	1	43	1
LGV Freight	Total	4	295	6	4	313	6
OGV1	Total	0	205	0	0	230	0
OGV2	Total	0	191	0	0	233	0
All	Total	706	1392	105	792	1540	105

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	Increase
DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	Increase
Car	2023	3054	3376	323	61	68	6	124	137
13	185	204	20						
LGV Personal	2023	98	104	6	2	2	0	4	4
0	6	6	0						
LGV Freight	2023	720	766	46	14	15	1	29	31
2	44	46	3						
OGV1	2023	496	557	61	10	11	1	20	23
2	30	34	4						
OGV2	2023	463	564	101	9	11	2	19	23
4	28	34	6						
All	2023	4831	5368	537	97	107	11	196	218
22	293	325	33						
Car	Total	3054	3376	323	61	68	6	124	137
13	185	204	20						
LGV Personal	Total	98	104	6	2	2	0	4	4
0	6	6	0						
LGV Freight	Total	720	766	46	14	15	1	29	31
2	44	46	3						
OGV1	Total	496	557	61	10	11	1	20	23
2	30	34	4						
OGV2	Total	463	564	101	9	11	2	19	23
4	28	34	6						

All	Total	4831	5368	537	97	107	11	196	218
22	293	325	33						

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	DS
DS	Increase	DM	DS	Increase					
Car	2023	25	25	0	0	0	0	0	0
1	1	0							
LGV Personal	2023	0	0	0	0	0	0	0	0
0	0	0	0						
LGV Freight	2023	2	2	0	0	0	0	0	0
0	0	0							
OGV1	2023	0	0	0	0	0	0	0	0
0	0	0							
OGV2	2023	0	0	0	0	0	0	0	0
0	0	0							
All	2023	27	27	0	0	0	0	1	1
1	1	0							
Car	Total	25	25	0	0	0	0	0	0
1	1	0							
LGV Personal	Total	0	0	0	0	0	0	0	0
0	0	0							

LGV Freight	Total	2	2	0	0	0	0	0	0	0
0	0	0								
OGV1	Total	0	0	0	0	0	0	0	0	0
0	0	0								
OGV2	Total	0	0	0	0	0	0	0	0	0
0	0	0								
All	Total	27	27	0	0	0	0	1	1	0
1	1	0								

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	DS
DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	DS
AM peak	2023	815	1157	341	16	23	7	33	47
14	49	70	21						
PM peak	2023	839	1035	195	17	21	4	34	42
8	51	63	12						
Inter-peak	2023	2774	2774	0	55	55	0	113	113
0	168	168	0						
Off-peak	2023	402	402	0	8	8	0	16	16
0	24	24	0						
AM peak	Total	815	1157	341	16	23	7	33	47
14	49	70	21						



PM peak	Total	839	1035	195	17	21	4	34	42
8	51	63	12						
Inter-peak	Total	2774	2774	0	55	55	0	113	113
0	168	168	0						
Off-peak	Total	402	402	0	8	8	0	16	16
0	24	24	0						

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	
DS	Increase	DM	DS	Increase					
AM peak	2023	5	5	0	0	0	0	0	0
0	0	0							

PM peak	2023	5	5	0	0	0	0	0	0	0
0	0	0								
Inter-peak	2023	14	14	0	0	0	0	0	0	0
0	0	0								
Off-peak	2023	2	2	0	0	0	0	0	0	0
0	0	0								
AM peak	Total	5	5	0	0	0	0	0	0	0
0	0	0								
PM peak	Total	5	5	0	0	0	0	0	0	0
0	0	0								
Inter-peak	Total	14	14	0	0	0	0	0	0	0
0	0	0								
Off-peak	Total	2	2	0	0	0	0	0	0	0
0	0	0								

## MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	-4041	0	-167	-116	0	94
Road	Total	-4041	0	-167	-116	0	94

## SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	-3084	0	-104	-29	0	59
LGV Personal	2023	-40	0	-2	0	0	1
LGV Freight	2023	-662	0	-14	-21	0	8
OGV1	2023	-153	0	-18	-29	0	10
OGV2	2023	-101	0	-30	-37	0	17
All	2023	-4041	0	-167	-116	0	94
Car	Total	-3084	0	-104	-29	0	59
LGV Personal	Total	-40	0	-2	0	0	1
LGV Freight	Total	-662	0	-14	-21	0	8
OGV1	Total	-153	0	-18	-29	0	10
OGV2	Total	-101	0	-30	-37	0	17
All	Total	-4041	0	-167	-116	0	94

## PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	-4041	0	-167	-116	0	94
All	Total	-4041	0	-167	-116	0	94

## PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	-1110	0	-68	-116	0	38
Commuting	2023	-1327	0	-37	0	0	21
Other	2023	-1604	0	-62	0	0	35
Business	Total	-1110	0	-68	-116	0	38
Commuting	Total	-1327	0	-37	0	0	21
Other	Total	-1604	0	-62	0	0	35

## PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
AM peak	2023	-2271	0	-106	-71	0	60
PM peak	2023	-1632	0	-61	-39	0	35
Inter-peak	2023	-137	0	0	-6	0	0
Off-peak	2023	-2	0	0	-0	0	0
AM peak	Total	-2271	0	-106	-71	0	60

PM peak	Total	-1632	0	-61	-39	0	35
Inter-peak	Total	-137	0	0	-6	0	0
Off-peak	Total	-2	0	0	-0	0	0

## NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-31	-2	-1	0	2	0
Car	Business	Total	-31	-2	-1	0	2	0
Car	Commuting	2023	-179	-14	-2	1	13	0
Car	Commuting	Total	-179	-14	-2	1	13	0
Car	Other	2023	-445	-42	-24	5	40	0
Car	Other	Total	-445	-42	-24	5	40	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-11	-1	-1	0	1	0
LGV Personal	Other	Total	-11	-1	-1	0	1	0
LGV Freight	Business	2023	-69	-6	-3	1	6	0

LGV Freight	Business	Total	-69	-6	-3	1	6	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-13	-1	-1	0	1	0
OGV1	Business	Total	-13	-1	-1	0	1	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-9	-1	-1	0	1	0
OGV2	Business	Total	-9	-1	-1	0	1	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-186	-13	-8	2	13	0
Car	Business	Total	-186	-13	-8	2	13	0
Car	Commuting	2023	-1316	-104	-16	10	98	0
Car	Commuting	Total	-1316	-104	-16	10	98	0
Car	Other	2023	-1492	-142	-81	16	135	0
Car	Other	Total	-1492	-142	-81	16	135	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-38	-3	-2	0	3	0
LGV Personal	Other	Total	-38	-3	-2	0	3	0
LGV Freight	Business	2023	-638	-54	-28	7	51	0
LGV Freight	Business	Total	-638	-54	-28	7	51	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-142	-9	-13	2	8	0

OGV1	Business	Total	-142	-9	-13	2	8	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-95	-7	-7	1	7	0
OGV2	Business	Total	-95	-7	-7	1	7	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-221	-16	-9	2	15	0
Car	Business	Total	-221	-16	-9	2	15	0
Car	Commuting	2023	-1353	-104	-16	10	99	0
Car	Commuting	Total	-1353	-104	-16	10	99	0
Car	Other	2023	-1553	-143	-81	16	136	0



Car	Other	Total	-1553	-143	-81	16	136	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-40	-3	-2	0	3	0
LGV Personal	Other	Total	-40	-3	-2	0	3	0
LGV Freight	Business	2023	-673	-55	-29	7	52	0
LGV Freight	Business	Total	-673	-55	-29	7	52	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-187	-11	-15	3	11	0
OGV1	Business	Total	-187	-11	-15	3	11	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-160	-12	-9	2	11	0
OGV2	Business	Total	-160	-12	-9	2	11	0



LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-12	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-12	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-72	0	0	0	0
0	0							
LGV Freight	Business	Total	0	-72	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-14	0	0	0	0
0	0							
OGV1	Business	Total	0	-14	0	0	0	0
0	0							

OGV1	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV1	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV1	Other	2023	0	0	0	0	0	0	0
0									
OGV1	Other	Total	0	0	0	0	0	0	0
0									
OGV2	Business	2023	0	-9	0	0	0	0	0
0	0								
OGV2	Business	Total	0	-9	0	0	0	0	0
0	0								
OGV2	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV2	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV2	Other	2023	0	0	0	0	0	0	0
0									
OGV2	Other	Total	0	0	0	0	0	0	0
0									

## MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
--------------	---------	------	---------	------------	-------------	--------------	--------------	---------------	----------------	----------

Car	Business	2023	0	-193	0	0	0	0
0	0							
Car	Business	Total	0	-193	0	0	0	0
0								
Car	Commuting	2023	0	-1327	0	0	0	0
0	0							
Car	Commuting	Total	0	-1327	0	0	0	0
0	0							
Car	Other	2023	0	-1564	0	0	0	0
0								
Car	Other	Total	0	-1564	0	0	0	0
0								
LGV Personal	Business	2023	0	0	0	0	0	0
0	0							
LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-40	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-40	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-662	0	0	0	0
0	0							

LGV Freight	Business	Total	0	-662	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-153	0	0	0	0
0	0							
OGV1	Business	Total	0	-153	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0								
OGV1	Other	Total	0	0	0	0	0	0
0								
OGV2	Business	2023	0	-101	0	0	0	0
0	0							
OGV2	Business	Total	0	-101	0	0	0	0
0	0							



LGV Personal Business	2023	0	0	0	0	0	0
0	0						
LGV Personal Business	Total	0	0	0	0	0	0
0	0						
LGV Personal Commuting	2023	0	0	0	0	0	0
0	0						
LGV Personal Commuting	Total	0	0	0	0	0	0
0	0						
LGV Personal Other	2023	0	-42	0	0	0	0
0	0						
LGV Personal Other	Total	0	-42	0	0	0	0
0	0						
LGV Freight Business	2023	0	-697	0	0	0	0
0	0						
LGV Freight Business	Total	0	-697	0	0	0	0
0	0						
LGV Freight Commuting	2023	0	0	0	0	0	0
0	0						
LGV Freight Commuting	Total	0	0	0	0	0	0
0	0						
LGV Freight Other	2023	0	0	0	0	0	0
0	0						
LGV Freight Other	Total	0	0	0	0	0	0
0	0						
OGV1 Business	2023	0	-200	0	0	0	0
0	0						



OGV1	Business	Total	0	-200	0	0	0	0	0
0	0								
OGV1	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV1	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV1	Other	2023	0	0	0	0	0	0	0
0									
OGV1	Other	Total	0	0	0	0	0	0	0
0									
OGV2	Business	2023	0	-168	0	0	0	0	0
0	0								
OGV2	Business	Total	0	-168	0	0	0	0	0
0	0								
OGV2	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV2	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV2	Other	2023	0	0	0	0	0	0	0
0									
OGV2	Other	Total	0	0	0	0	0	0	0
0									

## SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years

Mode 2023  
 Road -143.49%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-1327	-1327
Vehicle operating costs	-37	-37
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-1365</b>	<b>-1365</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-1604	-1604
Vehicle operating costs	-62	-62
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-1666</b>	<b>-1666</b>

Business All Modes Road Personal Road Freight

Travel Time	-1110	-193	-917
Vehicle operating costs	-185	-36	-149
User charges	0	0	0
During Construction & Maintenance		0	0
Subtotal	-1294	-228	-1066

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

#### Other business Impacts

Developer contributions	0	0
NET BUSINESS IMPACT	-1294	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE)	-4325
---------------------------	-------

Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

Local Government Funding	ALL MODES	Road
--------------------------	-----------	------

Revenue	0	0
Operating Costs	0	0
Investment Costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

Central Government Funding: Transport	ALL MODES	Road
---------------------------------------	-----------	------

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

Central Government Funding: Non-Transport

Indirect Tax Revenues	-94	-94
-----------------------	-----	-----

TOTALS

Broad Transport Budget	0	0
------------------------	---	---

Wider Public Finances	-94	-94
-----------------------	-----	-----

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-22
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Economic Efficiency: Consumer Users (Commuting)	-1365
---	-------

Economic Efficiency: Consumer Users (Other)	-1666
---	-------

Economic Efficiency: Business Users and Providers	-1294
---	-------

Wider Public Finances (Indirect Taxation Revenues)	94
--	----

Present Value of Benefits (PVB)	-4253
---------------------------------	-------

Broad Transport Budget	0
Present Value of Costs (PVC)	0
OVERALL IMPACTS	
Net Present Value (NPV)	-4253
Benefit to Cost Ratio (BCR)	0.000

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in

transport appraisals, together with some where monetisation is in prospect. There may also be other significant

costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis

presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-6\_Lowdham\_DCC\_Ph1

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\MasterFile - 6\_Lowdham\_DCC\_Ph1.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\TUBA\_Phase\_1\6\_Lowdham\_DDC\_Ph1\_Outputs.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\TUBA\_Phase\_1\6\_Lowdham\_DDC\_Ph1\_Outputs.log

\* User ID : Jonathon.Bailey2

\* Computer ID : UKBHM2LT50164

Elapsed time : 0hrs 0mins 1secs

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Tue Dec 8, 2020 at 16:02:29

## TUBA ECONOMICS FILE DIFFERENCES

### STANDARD ECONOMICS FILE USED

### INPUT\_SUMMARY

Run name TUBA-6\_Lowdham\_DCC\_Ph2

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\MasterFile - 6\_Lowdham\_DCC\_Ph2.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2023

Modelled years 2023

Time period Total hours



AM peak	648
PM peak	667
Inter-peak	2997
Off-peak	4438
Total	8750

Note: All monetary values are in 2010 market prices. All monetary values discounted to 2010 unless otherwise stated.

#### DM\_SCHEME\_COSTS

Do minimum scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

#### PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
------	------	-----------------	-----------------	------------

### TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1954	1954
Car	2023	PM peak	2091	2091
Car	2023	Inter-peak	5769	5769
Car	2023	Off-peak	837	858
Car	2023	All	10652	10673
LGV Personal	2023	AM peak	35	35
LGV Personal	2023	PM peak	36	36
LGV Personal	2023	Inter-peak	122	122
LGV Personal	2023	Off-peak	18	18
LGV Personal	2023	All	211	212
LGV Freight	2023	AM peak	260	260
LGV Freight	2023	PM peak	267	267
LGV Freight	2023	Inter-peak	891	891
LGV Freight	2023	Off-peak	129	133

LGV Freight	2023 All	1548	1551
OGV1	2023 AM peak	71	71
OGV1	2023 PM peak	46	46
OGV1	2023 Inter-peak	426	426
OGV1	2023 Off-peak	62	63
OGV1	2023 All	605	606
OGV2	2023 AM peak	44	44
OGV2	2023 PM peak	35	35
OGV2	2023 Inter-peak	224	224
OGV2	2023 Off-peak	33	33
OGV2	2023 All	337	338
All	2023 AM peak	2366	2366
All	2023 PM peak	2476	2476
All	2023 Inter-peak	7433	7433
All	2023 Off-peak	1078	1105
All	2023 All	13353	13379

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
------	------	------------	--------------	------------	---------------	------------	--------------	------------	---------------

Road	2023	524	0	1513	977	32551	0	2415	2190
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## FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	702	661	98	1093	942	98
LGV Personal	2023	0	40	1	1	53	1
LGV Freight	2023	4	295	6	6	391	6
OGV1	2023	0	205	0	0	406	0
OGV2	2023	0	191	0	0	467	0
All	2023	706	1392	105	1100	2259	105
Car	Total	702	661	98	1093	942	98
LGV Personal	Total	0	40	1	1	53	1
LGV Freight	Total	4	295	6	6	391	6
OGV1	Total	0	205	0	0	406	0
OGV2	Total	0	191	0	0	467	0
All	Total	706	1392	105	1100	2259	105

## CO2\_EMISSIONS\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	Increase
DS	Increase	DM	DS	Increase	DM	DS	Increase	DM	Increase
Car	2023	3054	4543	1489	61	91	30	124	184
60	185	275	90						
LGV Personal	2023	98	131	33	2	3	1	4	5
1	6	8	2						
LGV Freight	2023	720	959	239	14	19	5	29	39
10	44	58	14						
OGV1	2023	496	982	486	10	20	10	20	40
20	30	59	29						
OGV2	2023	463	1131	668	9	23	13	19	46
27	28	68	40						
All	2023	4831	7746	2915	97	155	58	196	314
118	293	469	177						
Car	Total	3054	4543	1489	61	91	30	124	184
60	185	275	90						
LGV Personal	Total	98	131	33	2	3	1	4	5
1	6	8	2						
LGV Freight	Total	720	959	239	14	19	5	29	39
10	44	58	14						
OGV1	Total	496	982	486	10	20	10	20	40
20	30	59	29						
OGV2	Total	463	1131	668	9	23	13	19	46
27	28	68	40						

All	Total	4831	7746	2915	97	155	58	196	314
118	293	469	177						

CO2\_EMISSIONS\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	DS
DS	Increase	DM	DS	Increase					
Car	2023	25	25	0	0	0	0	0	0
1	1	0							
LGV Personal	2023	0	0	0	0	0	0	0	0
0	0	0	0						
LGV Freight	2023	2	2	0	0	0	0	0	0
0	0	0							
OGV1	2023	0	0	0	0	0	0	0	0
0	0	0							
OGV2	2023	0	0	0	0	0	0	0	0
0	0	0							
All	2023	27	27	0	0	0	0	1	1
1	1	0							
Car	Total	25	25	0	0	0	0	0	0
1	1	0							
LGV Personal	Total	0	0	0	0	0	0	0	0
0	0	0							

LGV Freight	Total	2	2	0	0	0	0	0	0	0
0	0	0								
OGV1	Total	0	0	0	0	0	0	0	0	0
0	0	0								
OGV2	Total	0	0	0	0	0	0	0	0	0
0	0	0								
All	Total	27	27	0	0	0	0	1	1	0
1	1	0								

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	DS
AM peak	2023	815	1267	452	16	25	9	33	51
18	49	77	27						
PM peak	2023	839	1333	494	17	27	10	34	54
20	51	81	30						
Inter-peak	2023	2774	4733	1960	55	95	39	113	192
79	168	287	119						
Off-peak	2023	402	412	10	8	8	0	16	17
0	24	25	1						
AM peak	Total	815	1267	452	16	25	9	33	51
18	49	77	27						

PM peak	Total	839	1333	494	17	27	10	34	54
20	51	81	30						
Inter-peak	Total	2774	4733	1960	55	95	39	113	192
79	168	287	119						
Off-peak	Total	402	412	10	8	8	0	16	17
0	24	25	1						

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

#### CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

Submode	Year	Emissions (tonnes)			cost (£000s, low)			cost (£000s, central)	
		DM	DS	Increase	DM	DS	Increase	DM	
DS	Increase	DM	DS	Increase					
AM peak	2023	5	5	0	0	0	0	0	0
0	0	0							



PM peak	2023	5	5	0	0	0	0	0	0	0
0	0	0								
Inter-peak	2023	14	14	0	0	0	0	0	0	0
0	0	0								
Off-peak	2023	2	2	0	0	0	0	0	0	0
0	0	0								
AM peak	Total	5	5	0	0	0	0	0	0	0
0	0	0								
PM peak	Total	5	5	0	0	0	0	0	0	0
0	0	0								
Inter-peak	Total	14	14	0	0	0	0	0	0	0
0	0	0								
Off-peak	Total	2	2	0	0	0	0	0	0	0
0	0	0								

## MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Road	2023	-32026	0	-900	-1212	0	508
Road	Total	-32026	0	-900	-1212	0	508

## SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	-22986	0	-476	-242	0	272
LGV Personal	2023	-335	0	-10	-0	0	5
LGV Freight	2023	-5561	0	-71	-180	0	40
OGV1	2023	-2011	0	-144	-379	0	80
OGV2	2023	-1133	0	-199	-412	0	110
All	2023	-32026	0	-900	-1212	0	508
Car	Total	-22986	0	-476	-242	0	272
LGV Personal	Total	-335	0	-10	-0	0	5
LGV Freight	Total	-5561	0	-71	-180	0	40
OGV1	Total	-2011	0	-144	-379	0	80
OGV2	Total	-1133	0	-199	-412	0	110
All	Total	-32026	0	-900	-1212	0	508

## PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
All	2023	-32026	0	-900	-1212	0	508
All	Total	-32026	0	-900	-1212	0	508

## PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	-10317	0	-446	-1211	0	248
Commuting	2023	-6362	0	-99	-0	0	57
Other	2023	-15348	0	-355	-1	0	203
Business	Total	-10317	0	-446	-1211	0	248
Commuting	Total	-6362	0	-99	-0	0	57
Other	Total	-15348	0	-355	-1	0	203

## PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
AM peak	2023	-6605	0	-141	-206	0	79
PM peak	2023	-6910	0	-155	-165	0	87
Inter-peak	2023	-18513	0	-605	-840	0	340
Off-peak	2023	0	0	0	-1	0	2
AM peak	Total	-6605	0	-141	-206	0	79

PM peak	Total	-6910	0	-155	-165	0	87
Inter-peak	Total	-18513	0	-605	-840	0	340
Off-peak	Total	0	0	0	-1	0	2

## NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-267	0	-0	0	0	0
Car	Business	Total	-267	0	-0	0	0	0
Car	Commuting	2023	-864	0	-2	0	0	0
Car	Commuting	Total	-864	0	-2	0	0	0
Car	Other	2023	-4474	0	-5	0	0	0
Car	Other	Total	-4474	0	-5	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-100	0	-0	0	0	0
LGV Personal	Other	Total	-100	0	-0	0	0	0
LGV Freight	Business	2023	-601	0	-1	0	0	0

LGV Freight	Business	Total	-601	0	-1	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-189	0	-0	0	0	0
OGV1	Business	Total	-189	0	-0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-106	0	-0	0	0	0
OGV2	Business	Total	-106	0	-0	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-1609	0	-2	0	0	0
Car	Business	Total	-1609	0	-2	0	0	0
Car	Commuting	2023	-6345	0	-17	0	0	0
Car	Commuting	Total	-6345	0	-17	0	0	0
Car	Other	2023	-14997	0	-16	0	0	0
Car	Other	Total	-14997	0	-16	0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-334	0	-0	0	0	0
LGV Personal	Other	Total	-334	0	-0	0	0	0
LGV Freight	Business	2023	-5554	0	-8	0	0	0
LGV Freight	Business	Total	-5554	0	-8	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-2009	0	-2	0	0	0

OGV1	Business	Total	-2009	0	-2	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-1132	0	-1	0	0	0
OGV2	Business	Total	-1132	0	-1	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	-1881	0	-3	0	0	0
Car	Business	Total	-1881	0	-3	0	0	0
Car	Commuting	2023	-6446	0	-15	-0	0	0
Car	Commuting	Total	-6446	0	-15	-0	0	0
Car	Other	2023	-15345	0	-14	-0	0	0

Car	Other	Total	-15345	0	-14	-0	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	-344	0	-0	-0	0	0
LGV Personal	Other	Total	-344	0	-0	-0	0	0
LGV Freight	Business	2023	-5806	0	-7	0	0	0
LGV Freight	Business	Total	-5806	0	-7	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	-2532	0	-2	0	0	0
OGV1	Business	Total	-2532	0	-2	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	-1742	0	-2	0	0	0
OGV2	Business	Total	-1742	0	-2	0	0	0





LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-100	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-100	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-602	0	0	0	0
0	0							
LGV Freight	Business	Total	0	-602	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-189	0	0	0	0
0	0							
OGV1	Business	Total	0	-189	0	0	0	0
0	0							

OGV1	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV1	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV1	Other	2023	0	0	0	0	0	0	0
0									
OGV1	Other	Total	0	0	0	0	0	0	0
0									
OGV2	Business	2023	0	-106	0	0	0	0	0
0	0								
OGV2	Business	Total	0	-106	0	0	0	0	0
0	0								
OGV2	Commuting	2023	0	0	0	0	0	0	0
0	0								
OGV2	Commuting	Total	0	0	0	0	0	0	0
0	0								
OGV2	Other	2023	0	0	0	0	0	0	0
0									
OGV2	Other	Total	0	0	0	0	0	0	0
0									

## MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
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Car	Business	2023	0	-1611	0	0	0	0
0	0							
Car	Business	Total	0	-1611	0	0	0	0
0	0							
Car	Commuting	2023	0	-6362	0	0	0	0
0	0							
Car	Commuting	Total	0	-6362	0	0	0	0
0	0							
Car	Other	2023	0	-15013	0	0	0	0
0	0							
Car	Other	Total	0	-15013	0	0	0	0
0								
LGV Personal	Business	2023	0	0	0	0	0	0
0	0							
LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-335	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-335	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-5561	0	0	0	0
0	0							

LGV Freight	Business	Total	0	-5561	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-2011	0	0	0	0
0	0							
OGV1	Business	Total	0	-2011	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0								
OGV1	Other	Total	0	0	0	0	0	0
0								
OGV2	Business	2023	0	-1133	0	0	0	0
0	0							
OGV2	Business	Total	0	-1133	0	0	0	0
0	0							



LGV Personal	Business	2023	0	0	0	0	0	0
0	0							
LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-345	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-345	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-5812	0	0	0	0
0	0							
LGV Freight	Business	Total	0	-5812	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-2534	0	0	0	0
0	0							

OGV1	Business	Total	0	-2534	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0								
OGV1	Other	Total	0	0	0	0	0	0
0								
OGV2	Business	2023	0	-1743	0	0	0	0
0	0							
OGV2	Business	Total	0	-1743	0	0	0	0
0	0							
OGV2	Commuting	2023	0	0	0	0	0	0
0	0							
OGV2	Commuting	Total	0	0	0	0	0	0
0	0							
OGV2	Other	2023	0	0	0	0	0	0
0								
OGV2	Other	Total	0	0	0	0	0	0
0								

## SENSITIVITY

Total user benefits as a percentage of total DM user costs



Modelled Years

Mode 2023

Road \*\*\*\*\*%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-6362	-6362
Vehicle operating costs	-99	-99
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-6461</b>	<b>-6461</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-15348	-15348
Vehicle operating costs	-356	-356
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-15704</b>	<b>-15704</b>

Business All Modes Road Personal Road Freight

Travel Time	-10317	-1611	-8705
Vehicle operating costs	-1657	-272	-1385
User charges	0	0	0
During Construction & Maintenance		0	0
Subtotal	-11973	-1883	-10090

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

#### Other business Impacts

Developer contributions	0	0
NET BUSINESS IMPACT	-11973	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE)	-34138
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

##### Local Government Funding

	ALL MODES	Road
--	-----------	------

Revenue	0	0
Operating Costs	0	0
Investment Costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

##### Central Government Funding: Transport

	ALL MODES	Road
--	-----------	------

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

##### Central Government Funding: Non-Transport

Indirect Tax Revenues	-508	-508
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TOTALS

Broad Transport Budget	0	0
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Wider Public Finances	-508	-508
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Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

Analysis of Monetised Costs and Benefits

Greenhouse Gases	-118
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Economic Efficiency: Consumer Users (Commuting)	-6461
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Economic Efficiency: Consumer Users (Other)	-15704
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Economic Efficiency: Business Users and Providers	-11973
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Wider Public Finances (Indirect Taxation Revenues)	508
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Present Value of Benefits (PVB)	-33748
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Broad Transport Budget	0
Present Value of Costs (PVC)	0
OVERALL IMPACTS	
Net Present Value (NPV)	-33748
Benefit to Cost Ratio (BCR)	0.000

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in

transport appraisals, together with some where monetisation is in prospect. There may also be other significant

costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis

presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

TUBA Run Information

- calculations completed

File Summary

\* Run Name : TUBA-6\_Lowdham\_DCC\_Ph2

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\MasterFile - 6\_Lowdham\_DCC\_Ph2.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\TUBA\_Phase\_2\6\_Lowdham\_DDC\_Ph2\_Outputs.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\6-Lowdham-DDC\TUBA\_Phase\_2\6\_Lowdham\_DDC\_Ph2\_Outputs.log

\* User ID : Jonathon.Bailey2

\* Computer ID : UKBHM2LT50164

Elapsed time : 0hrs 0mins 1secs

**Kirkhill**

Transport User Benefit Appraisal TUBA (1.9.14.3 64-bit)

Program run on Tue Dec 8, 2020 at 16:32:08

## TUBA ECONOMICS FILE DIFFERENCES

### STANDARD ECONOMICS FILE USED

#### INPUT\_SUMMARY

Run name TUBA-3\_Mickledale\_DCC\_V2

DM scheme DM

DS scheme DS

Economic parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

Scheme parameter file L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\MasterFile - 7\_Kirk Hill\_DCC\_V2.txt

First year of scheme costs 2020

First Appraisal Year 2023

Last Appraisal Year 2023

Modelled years 2023

Time period Total hours

AM peak 648

PM peak 667

Inter-peak 2997

Off-peak 4438

Total 8750

Note: All monetary values are in 2010 market prices. All monetary values discounted to 2010 unless otherwise stated.



## DM\_SCHEME\_COSTS

Do minimum scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

## DS\_SCHEME\_COSTS

Do something scheme costs. Undiscounted £000s

Mode	Year	Prep.	Superv.	Constr.	Land	Maint.	Oper.	Grant/Sub.
Dev._Cont								

## PRESENT\_VALUE\_COSTS

Scheme investment and operating costs (i.e. excluding grant/subsidy, developer contributions and delays) and differences. £000s.

Mode	Year	DM_scheme_costs	DS_scheme_costs	Difference
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## TRIP\_MATRIX\_TOTALS

Annualised total trip numbers(thousands)

Submode	Year	Time period	DO MIN	DO SOM
Car	2023	AM peak	1483	1196
Car	2023	PM peak	1848	1465
Car	2023	Inter-peak	4033	3275
Car	2023	Off-peak	539	436
Car	2023	All	7903	6371
LGV Personal	2023	AM peak	197	159
LGV Personal	2023	PM peak	198	157
LGV Personal	2023	Inter-peak	590	479
LGV Personal	2023	Off-peak	30	24
LGV Personal	2023	All	1014	819
LGV Freight	2023	AM peak	27	22
LGV Freight	2023	PM peak	27	21

LGV Freight	2023	Inter-peak	80	65
LGV Freight	2023	Off-peak	4	3
LGV Freight	2023	All	138	112
OGV1	2023	AM peak	15	12
OGV1	2023	PM peak	14	11
OGV1	2023	Inter-peak	78	63
OGV1	2023	Off-peak	16	13
OGV1	2023	All	122	99
OGV2	2023	AM peak	25	20
OGV2	2023	PM peak	47	38
OGV2	2023	Inter-peak	164	133
OGV2	2023	Off-peak	37	30
OGV2	2023	All	274	221
All	2023	AM peak	1746	1408
All	2023	PM peak	2134	1692
All	2023	Inter-peak	4945	4016
All	2023	Off-peak	626	506
All	2023	All	9452	7622

#### DM&DS\_USER\_COSTS

Total value of user costs, DM and DS. £000s.

Mode	Year	DMtot_time	DMtot_charge	DMtot_fuel	DMtot_nonfuel	DStot_time	DStot_charge	DStot_fuel	DStot_nonfuel
Road	2023	261	0	358	243	3008	0	381	202

#### FUEL\_CONSUMPTION

Total fuel consumption, DM and DS. kilounits.

Submode	Year	Do minimum			Do something		
		Petrol	Diesel	Electric	Petrol	Diesel	Electric
Car	2023	242	229	35	272	230	29

LGV Personal	2023	0	20	0	0	19	0
LGV Freight	2023	0	0	0	0	0	0
OGV1	2023	0	0	0	0	1	0
OGV2	2023	0	5	0	0	7	0
All	2023	242	254	36	272	258	29
Car	Total	242	229	35	272	230	29
LGV Personal	Total	0	20	0	0	19	0
LGV Freight	Total	0	0	0	0	0	0
OGV1	Total	0	0	0	0	1	0
OGV2	Total	0	5	0	0	7	0
All	Total	242	254	36	272	258	29

#### CO2\_EMISSIONS\_UNTRADED

		Emissions (tonnes)			cost (£000s, low)			cost (£000s,	
central)		cost (£000s, high)							
Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	
DS	Increase	DM	DS	Increase					
Car	2023	1055	1121	66	21	22	1	43	45
3	64	68	4						
LGV Personal	2023	50	48	-2	1	1	-0	2	2
-0	3	3	-0						
LGV Freight	2023	0	1	1	0	0	0	0	0
0	0	0	0						
OGV1	2023	0	2	1	0	0	0	0	0
0	0	0	0						
OGV2	2023	12	17	5	0	0	0	0	1
0	1	1	0						
All	2023	1117	1188	71	22	24	1	45	48
3	68	72	4						
Car	Total	1055	1121	66	21	22	1	43	45
3	64	68	4						
LGV Personal	Total	50	48	-2	1	1	-0	2	2
-0	3	3	-0						
LGV Freight	Total	0	1	1	0	0	0	0	0
0	0	0	0						



CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_UNTRADED

central)		Emissions (tonnes) cost (£000s, high)			cost (£000s, low)			cost (£000s,	
Submode	Year	DM	DS	Increase	DM	DS	Increase	DM	
DS	Increase	DM	DS	Increase					
AM peak	2023	148	217	69	3	4	1	6	9
3	9	13	4						
PM peak	2023	231	294	63	5	6	1	9	12
3	14	18	4						
Inter-peak	2023	665	617	-48	13	12	-1	27	25
-2	40	37	-3						
Off-peak	2023	73	60	-13	1	1	-0	3	2
-1	4	4	-1						
AM peak	Total	148	217	69	3	4	1	6	9
3	9	13	4						
PM peak	Total	231	294	63	5	6	1	9	12
3	14	18	4						
Inter-peak	Total	665	617	-48	13	12	-1	27	25
-2	40	37	-3						
Off-peak	Total	73	60	-13	1	1	-0	3	2
-1	4	4	-1						

NOTE: The cost of any EU Allowances (EUAs) purchased to cover traded emissions (i.e. emissions from sectors covered by the EU Emissions Trading System)

will be reflected in the purchase price of traded sector goods (such as electricity). Since the purchase price is used in the costs, considered in transport appraisal,

the cost of the relevant EUAs will be included in the cost benefit analysis, "internalising" the costs of emissions from traded sectors.

The CO2 EMISSIONS BY TIME PERIOD TRADED reported in the table below are therefore provided for information purposes only - they are not included in the

Economic Efficiency of the Transport System (TEE) table.

For further information, please refer to TAG Unit A-3 para. 4.1.5 and 4.2.9

CO2\_EMISSIONS\_BY\_TIME\_PERIOD\_TRADED

central)		Emissions (tonnes) cost (£000s, high)			cost (£000s, low)			cost (£000s,	
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Submode	Year	DM	DS	Increase	DM	DS	Increase	DM
DS	Increase	DM	DS	Increase	DM	DS	Increase	DM
AM peak	2023	1	1	-0	0	0	-0	0
-0	0	0	-0					
PM peak	2023	2	1	-0	0	0	-0	0
-0	0	0	-0					
Inter-peak	2023	5	4	-1	0	0	-0	0
-0	0	0	-0					
Off-peak	2023	1	0	-0	0	0	-0	0
0	0	0	-0					-
AM peak	Total	1	1	-0	0	0	-0	0
-0	0	0	-0					
PM peak	Total	2	1	-0	0	0	-0	0
-0	0	0	-0					
Inter-peak	Total	5	4	-1	0	0	-0	0
0	0	0	-0					-
Off-peak	Total	1	0	-0	0	0	-0	0
0	0	0	-0					-

#### MODE

User benefits and changes in revenues by mode, all years. £000s.

Mode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Road	2023	-2798	0	-54	39	0	13
Road	Total	-2798	0	-54	39	0	13

#### SUBMODE

User benefits and changes in revenues by submode/vehicle type, modelled years and total. £000s.

Submode	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect	
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
Car	2023	-2726	0	-51	39	0	13
LGV Personal	2023	-62	0	-1	2	0	-0
LGV Freight	2023	-3	0	-0	-0	0	0
OGV1	2023	-1	0	-0	-0	0	0

OGV2	2023	-7	0	-2	-3	0	1
All	2023	-2798	0	-54	39	0	13
Car	Total	-2726	0	-51	39	0	13
LGV Personal	Total	-62	0	-1	2	0	-0
LGV Freight	Total	-3	0	-0	-0	0	0
OGV1	Total	-1	0	-0	-0	0	0
OGV2	Total	-7	0	-2	-3	0	1
All	Total	-2798	0	-54	39	0	13

#### PERSON\_TYPES

User benefits and changes in revenues by person type, modelled years and total. £000s.

Person_type	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
All	2023	-2798	0	-54	39	0	13
All	Total	-2798	0	-54	39	0	13

#### PURPOSE

User benefits and changes in revenues by trip purpose, modelled years and total. £000s.

Purpose	Year	User	User_Charges	Vehicle_Operating_Cost		Operator_Rev	Indirect
		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	
Business	2023	-33	0	-3	-6	0	1
Commuting	2023	-610	0	-13	5	0	6
Other	2023	-2155	0	-38	40	0	6
Business	Total	-33	0	-3	-6	0	1
Commuting	Total	-610	0	-13	5	0	6
Other	Total	-2155	0	-38	40	0	6

#### PERIOD

User benefits and changes in revenues by time period, modelled years and total. £000s.

Period	Year	User	User_Charges	Vehicle_Operating_Cost	Operator_Rev	Indirect
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		Time	PT_fares_(pri	Fuel	Non_fuel	PT_fares_(pri	Taxes
AM peak	2023	-682	0	-26	5	0	13
PM peak	2023	-1169	0	-27	8	0	12
Inter-peak	2023	-941	0	-3	23	0	-8
Off-peak	2023	-6	0	2	3	0	-2
AM peak	Total	-682	0	-26	5	0	13
PM peak	Total	-1169	0	-27	8	0	12
Inter-peak	Total	-941	0	-3	23	0	-8
Off-peak	Total	-6	0	2	3	0	-2

#### NON MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (thousands of person hrs) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-4	0	0	0
Car	Business	Total	0	0	-4	0	0	0
Car	Commuting	2023	0	-81	-3	1	0	0
Car	Commuting	Total	0	-81	-3	1	0	0
Car	Other	2023	-365	-269	-2	12	0	0
Car	Other	Total	-365	-269	-2	12	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-19	0	0	0
LGV Personal	Other	Total	0	0	-19	0	0	0
LGV Freight	Business	2023	0	0	-0	0	0	0
LGV Freight	Business	Total	0	0	-0	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0



LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-0	0	0	0
OGV1	Business	Total	0	0	-0	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-1	0	0	0
OGV2	Business	Total	0	0	-1	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## MONETISED TIME BENEFITS BY TIME SAVING

Time benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-22	0	0	0
Car	Business	Total	0	0	-22	0	0	0
Car	Commuting	2023	0	-595	-25	10	0	0
Car	Commuting	Total	0	-595	-25	10	0	0
Car	Other	2023	-1224	-903	-6	39	0	0
Car	Other	Total	-1224	-903	-6	39	0	0
LGV Personal	Business	2023	0	0	0	0	0	0
LGV Personal	Business	Total	0	0	0	0	0	0
LGV Personal	Commuting	2023	0	0	0	0	0	0
LGV Personal	Commuting	Total	0	0	0	0	0	0
LGV Personal	Other	2023	0	0	-63	1	0	0

LGV Personal	Other	Total	0	0	-63	1	0	0
LGV Freight	Business	2023	0	0	-3	0	0	0
LGV Freight	Business	Total	0	0	-3	0	0	0
LGV Freight	Commuting	2023	0	0	0	0	0	0
LGV Freight	Commuting	Total	0	0	0	0	0	0
LGV Freight	Other	2023	0	0	0	0	0	0
LGV Freight	Other	Total	0	0	0	0	0	0
OGV1	Business	2023	0	0	-1	0	0	0
OGV1	Business	Total	0	0	-1	0	0	0
OGV1	Commuting	2023	0	0	0	0	0	0
OGV1	Commuting	Total	0	0	0	0	0	0
OGV1	Other	2023	0	0	0	0	0	0
OGV1	Other	Total	0	0	0	0	0	0
OGV2	Business	2023	0	0	-7	0	0	0
OGV2	Business	Total	0	0	-7	0	0	0
OGV2	Commuting	2023	0	0	0	0	0	0
OGV2	Commuting	Total	0	0	0	0	0	0
OGV2	Other	2023	0	0	0	0	0	0
OGV2	Other	Total	0	0	0	0	0	0

## TOTAL BENEFITS BY TIME SAVING

Total benefits (£000s) by size of time saving

Vehicle type	Purpose	Year	< -5 mins	-5 to -2 mins	-2 to 0 mins	0 to 2 mins	2 to 5 mins	> 5 mins
Car	Business	2023	0	0	-26	1	0	0
Car	Business	Total	0	0	-26	1	0	0
Car	Commuting	2023	0	-611	-26	18	0	0
Car	Commuting	Total	0	-611	-26	18	0	0
Car	Other	2023	-1269	-921	-6	102	0	0
Car	Other	Total	-1269	-921	-6	102	0	0

LGV Personal Business	2023	0	0	0	0	0	0
LGV Personal Business	Total	0	0	0	0	0	0
LGV Personal Commuting	2023	0	0	0	0	0	0
LGV Personal Commuting	Total	0	0	0	0	0	0
LGV Personal Other	2023	0	0	-65	5	0	0
LGV Personal Other	Total	0	0	-65	5	0	0
LGV Freight Business	2023	0	0	-3	0	0	0
LGV Freight Business	Total	0	0	-3	0	0	0
LGV Freight Commuting	2023	0	0	0	0	0	0
LGV Freight Commuting	Total	0	0	0	0	0	0
LGV Freight Other	2023	0	0	0	0	0	0
LGV Freight Other	Total	0	0	0	0	0	0
OGV1 Business	2023	0	0	-2	0	0	0
OGV1 Business	Total	0	0	-2	0	0	0
OGV1 Commuting	2023	0	0	0	0	0	0
OGV1 Commuting	Total	0	0	0	0	0	0
OGV1 Other	2023	0	0	0	0	0	0
OGV1 Other	Total	0	0	0	0	0	0
OGV2 Business	2023	0	0	-12	1	0	0
OGV2 Business	Total	0	0	-12	1	0	0
OGV2 Commuting	2023	0	0	0	0	0	0
OGV2 Commuting	Total	0	0	0	0	0	0
OGV2 Other	2023	0	0	0	0	0	0
OGV2 Other	Total	0	0	0	0	0	0

## NON MONETISED TIME BENEFITS BY DISTANCE

Time benefits (thousands of person hrs) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms
Car	Business	2023	0	-4	0	0	0
0	0						

Car 0	Business 0	Total	0	-4	0	0	0	0
Car 0	Commuting 0	2023	0	-83	0	0	0	0
Car 0	Commuting 0	Total	0	-83	0	0	0	0
Car 0	Other 0	2023	0	-625	0	0	0	0
Car 0	Other 0	Total	0	-625	0	0	0	0
LGV Personal 0	Business 0	2023	0	0	0	0	0	0
LGV Personal 0	Business 0	Total	0	0	0	0	0	0
LGV Personal 0	Commuting 0	2023	0	0	0	0	0	0
LGV Personal 0	Commuting 0	Total	0	0	0	0	0	0
LGV Personal 0	Other 0	2023	0	-18	0	0	0	0
LGV Personal 0	Other 0	Total	0	-18	0	0	0	0
LGV Freight 0	Business 0	2023	0	-0	0	0	0	0
LGV Freight 0	Business 0	Total	0	-0	0	0	0	0
LGV Freight 0	Commuting 0	2023	0	0	0	0	0	0
LGV Freight 0	Commuting 0	Total	0	0	0	0	0	0
LGV Freight 0	Other 0	2023	0	0	0	0	0	0
LGV Freight 0	Other 0	Total	0	0	0	0	0	0
OGV1 0	Business 0	2023	0	-0	0	0	0	0
OGV1 0	Business 0	Total	0	-0	0	0	0	0

OGV1 0	Commuting 0	2023	0	0	0	0	0	0	0
OGV1 0	Commuting 0	Total	0	0	0	0	0	0	0
OGV1 0	Other 0	2023	0	0	0	0	0	0	0
OGV1 0	Other 0	Total	0	0	0	0	0	0	0
OGV2 0	Business 0	2023	0	-1	0	0	0	0	0
OGV2 0	Business 0	Total	0	-1	0	0	0	0	0
OGV2 0	Commuting 0	2023	0	0	0	0	0	0	0
OGV2 0	Commuting 0	Total	0	0	0	0	0	0	0
OGV2 0	Other 0	2023	0	0	0	0	0	0	0
OGV2 0	Other 0	Total	0	0	0	0	0	0	0

## MONETISED TIME BENEFITS BY DISTANCE

Time benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car 0	Business 0	2023	0	-22	0	0	0	0	0	0
Car 0	Business 0	Total	0	-22	0	0	0	0	0	0
Car 0	Commuting 0	2023	0	-610	0	0	0	0	0	0
Car 0	Commuting 0	Total	0	-610	0	0	0	0	0	0
Car 0	Other 0	2023	0	-2094	0	0	0	0	0	0
Car 0	Other 0	Total	0	-2094	0	0	0	0	0	0

LGV Personal	Business	2023	0	0	0	0	0	0
0	0							
LGV Personal	Business	Total	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Personal	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Personal	Other	2023	0	-62	0	0	0	0
0	0							
LGV Personal	Other	Total	0	-62	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-3	0	0	0	0
0	0							
LGV Freight	Business	Total	0	-3	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-1	0	0	0	0
0	0							
OGV1	Business	Total	0	-1	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0	0							
OGV1	Other	Total	0	0	0	0	0	0
0	0							
OGV2	Business	2023	0	-7	0	0	0	0
0	0							

OGV2 0	Business 0	Total	0	-7	0	0	0	0	0
OGV2 0	Commuting 0	2023	0	0	0	0	0	0	0
OGV2 0	Commuting 0	Total	0	0	0	0	0	0	0
OGV2 0	Other 0	2023	0	0	0	0	0	0	0
OGV2 0	Other 0	Total	0	0	0	0	0	0	0

## TOTAL BENEFITS BY DISTANCE

Total benefits (£000s) by distance

Vehicle type	Purpose	Year	< 1 kms	1 to 5 kms	5 to 10 kms	10 to 25 kms	25 to 50 kms	50 to 100 kms	100 to 200 kms	>200 kms
Car 0	Business 0	2023	0	-25	0	0	0	0	0	0
Car 0	Business 0	Total	0	-25	0	0	0	0	0	0
Car 0	Commuting 0	2023	0	-619	0	0	0	0	0	0
Car 0	Commuting 0	Total	0	-619	0	0	0	0	0	0
Car 0	Other 0	2023	0	-2093	0	0	0	0	0	0
Car 0	Other 0	Total	0	-2093	0	0	0	0	0	0
LGV 0	Personal Business 0	2023	0	0	0	0	0	0	0	0
LGV 0	Personal Business 0	Total	0	0	0	0	0	0	0	0
LGV 0	Personal Commuting 0	2023	0	0	0	0	0	0	0	0
LGV 0	Personal Commuting 0	Total	0	0	0	0	0	0	0	0
LGV 0	Personal Other 0	2023	0	-60	0	0	0	0	0	0

LGV Personal	Other	Total	0	-60	0	0	0	0
0	0							
LGV Freight	Business	2023	0	-3	0	0	0	0
0	0							
LGV Freight	Business	Total	0	-3	0	0	0	0
0	0							
LGV Freight	Commuting	2023	0	0	0	0	0	0
0	0							
LGV Freight	Commuting	Total	0	0	0	0	0	0
0	0							
LGV Freight	Other	2023	0	0	0	0	0	0
0	0							
LGV Freight	Other	Total	0	0	0	0	0	0
0	0							
OGV1	Business	2023	0	-2	0	0	0	0
0	0							
OGV1	Business	Total	0	-2	0	0	0	0
0	0							
OGV1	Commuting	2023	0	0	0	0	0	0
0	0							
OGV1	Commuting	Total	0	0	0	0	0	0
0	0							
OGV1	Other	2023	0	0	0	0	0	0
0	0							
OGV1	Other	Total	0	0	0	0	0	0
0	0							
OGV2	Business	2023	0	-12	0	0	0	0
0	0							
OGV2	Business	Total	0	-12	0	0	0	0
0	0							
OGV2	Commuting	2023	0	0	0	0	0	0
0	0							
OGV2	Commuting	Total	0	0	0	0	0	0
0	0							
OGV2	Other	2023	0	0	0	0	0	0
0	0							
OGV2	Other	Total	0	0	0	0	0	0
0	0							



## SENSITIVITY

Total user benefits as a percentage of total DM user costs

Modelled Years	
Mode	2023
Road	-326.38%

Economy: Economic Efficiency of the Transport System(TEE)

Consumer - Commuting user benefits	All Modes	Road
Travel Time	-610	-610
Vehicle operating costs	-8	-8
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - COMMUTING BENEFITS</b>	<b>-619</b>	<b>-619</b>

Consumer - Other user benefits	All Modes	Road
Travel Time	-2155	-2155
Vehicle operating costs	2	2
User charges	0	0
During Construction & Maintenance	0	0
<b>NET CONSUMER - OTHER BENEFITS</b>	<b>-2153</b>	<b>-2153</b>

Business	All Modes	Road Personal	Road Freight
Travel Time	-33	-22	-11
Vehicle operating costs	-9	-4	-5
User charges	0	0	0
During Construction & Maintenance	0	0	0
<b>Subtotal</b>	<b>-42</b>	<b>-25</b>	<b>-16</b>

#### Private Sector Provider Impacts

Revenue	0	0
Operating costs	0	0
Investment costs	0	0
Grant/subsidy	0	0
Subtotal	0	0

#### Other business Impacts

Developer contributions	0	0
NET BUSINESS IMPACT	-42	

#### TOTAL

#### Present Value of Transport Economic

Efficiency Benefits (TEE)	-2814
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Note: Benefits appear as positive numbers, while costs appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Public Accounts

Local Government Funding	ALL MODES	Road
Revenue	0	0
Operating Costs	0	0
Investment Costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

#### Central Government Funding: Transport

	ALL MODES	Road
Revenue	0	0
Operating costs	0	0

Investment costs	0	0
Developer Contributions	0	0
Grant/Subsidy Payments	0	0
NET IMPACT	0	0

#### Central Government Funding: Non-Transport

Indirect Tax Revenues	-13	-13
-----------------------	-----	-----

#### TOTALS

Broad Transport Budget	0	0
Wider Public Finances	-13	-13

Note: Costs appear as positive numbers, while revenues and developer contributions appear as negative numbers.

Note: All entries are present values discounted to 2010, in 2010 prices

#### Analysis of Monetised Costs and Benefits

Greenhouse Gases	-3
Economic Efficiency: Consumer Users (Commuting)	-619
Economic Efficiency: Consumer Users (Other)	-2153
Economic Efficiency: Business Users and Providers	-42
Wider Public Finances (Indirect Taxation Revenues)	13
Present Value of Benefits (PVB)	-2804
Broad Transport Budget	0
Present Value of Costs (PVC)	0

## OVERALL IMPACTS

Net Present Value (NPV)	-2804
Benefit to Cost Ratio (BCR)	0.000

Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in

transport appraisals, together with some where monetisation is in prospect. There may also be other significant

costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis

presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions.

## TUBA Run Information

- calculations completed

## File Summary

\* Run Name : TUBA-3\_Mickledale\_DCC\_V2

\* Scheme File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\MasterFile - 7\_Kirk Hill\_DCC\_V2.txt

\* Economic File : L:\60625845\_A614 MRN DfT responses\08\_Models\TUBA\Economics\_TAG\_db1\_14\_0\_Core.txt

\* Output File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\TUBA\_DDC\_Core\_V2\7\_Kirk Hill\_DDC\_Core\_Outputs\_V2.OUT

\* Log File : L:\60625845\_A614 MRN DfT responses\08\_Models\DDC TUBAs\7-Kirkhill-DDC\TUBA\_DDC\_Core\_V2\7\_Kirk Hill\_DDC\_Core\_Outputs\_V2.log

\* User ID : Jonathon.Bailey2

\* Computer ID : UKBHM2LT50164

Elapsed time : 0hrs 0mins 1secs



# Appendix EE – Maintenance Costs

Maintenance Costs. Total Cost. 2020 Prices.				
	Ollerton	Mickeldale	Lowdham	Kirk Hill
Price	£1,058,629	£1,045,667	£502,856	£803,309
Maintenance Costs. Percentage per year.				
Year	Ollerton	Mickeldale	Lowdham	Kirk Hill
2020	0	0	0	0
2021	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0
2024	0.315	0.421	0.975	0.209
2025	0.315	0.411	0.953	0.209
2026	0.315	0.402	0.932	0.209
2027	0.315	0.393	0.911	0.209
2028	3.376	1.636	1.788	1.428
2029	0.315	0.376	0.87	0.209
2030	0.315	0.367	0.851	0.209
2031	0.315	0.359	0.831	0.209
2032	0.315	0.351	0.813	0.209
2033	4.835	8.154	5.028	5.292
2034	0.315	0.335	0.777	0.209
2035	0.315	0.328	0.759	0.209
2036	0.315	0.32	0.742	0.209
2037	0.315	0.313	0.725	0.209
2038	3.376	1.303	1.424	1.428
2039	0.315	0.299	0.693	0.209
2040	0.315	0.292	0.678	0.209
2041	0.315	0.286	0.662	0.209
2042	0.315	0.28	0.647	0.209
2043	18.693	28.105	27.234	18.532
2044	0.315	0.267	0.619	0.209
2045	0.315	0.261	0.605	0.209
2046	0.315	0.255	0.591	0.209
2047	0.315	0.249	0.578	0.209
2048	4.975	1.634	2.458	3.668
2049	0.315	0.238	0.552	0.209
2050	0.315	0.233	0.54	0.209
2051	0.315	0.228	0.528	0.209
2052	0.315	0.223	0.516	0.209
2053	4.835	5.174	3.19	5.292
2054	0.315	0.213	0.493	0.209
2055	0.315	0.208	0.482	0.209
2056	0.315	0.203	0.471	0.209
2057	0.315	0.199	0.46	0.209
2058	3.376	0.827	0.904	1.428

Maintenance Costs. Percentage per year.							
Year	Ollerton		Mickeldale		Lowdham		Kirk Hill
2059	0.315		0.19		0.44		0.209
2060	0.315		0.186		0.43		0.209
2061	0.315		0.181		0.42		0.209
2062	0.315		0.177		0.411		0.209
2063	26.898		36.868		27.041		40.266
2064	0.315		0.17		0.393		0.209
2065	0.315		0.166		0.384		0.209
2066	0.315		0.162		0.375		0.209
2067	0.315		0.158		0.367		0.209
2068	3.365		0.659		0.72		1.428
2069	0.315		0.151		0.35		0.209
2070	0.315		0.148		0.343		0.209
2071	0.315		0.145		0.335		0.209
2072	0.315		0.141		0.327		0.209
2073	7.78		3.842		3.524		9.773
2074	0.315		0.135		0.313		0.209
2075	0.315		0.132		0.306		0.209
2076	0.315		0.129		0.299		0.209
2077	0.314		0.126		0.292		0.21
2078	3.376		0.525		0.573		1.428
2079	0.314		0.12		0.279		0.21
2080	0.314		0.118		0.272		0.21
2081	0.314		0.115		0.266		0.21
2082	0.314		0.113		0.26		0.21





# Appendix FF – COBALT Outputs

\*\*\*\*\*

\* \*  
\* CCC OOO BBBB AAA L TTTT \*  
\* C C O O B B A A L T \*  
\* C O O B B A A L T \*  
\* C O O BBBB AAAAA ---- L T \*  
\* C O O B B A A L T \*  
\* C C O O B B A A L T \*  
\* CCC OOO BBBB A A LLLL T \*  
\* \*

\*\*\*\*\*

\* \*  
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Written by Roger Himlin

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[Section 1] Summary Statistics

[Section 1.1] Economic Summary

Total Without-Scheme Accident Costs = 14,154.5

Total With-Scheme Accident Costs = 15,023.2

Total Accident Benefits Saved by Scheme = -868.6

Year W/o-scheme With-Scheme

2023 350.5 367.9

2024 342.4 359.9

2025 335.0 352.6

2026 328.2 345.8

2027 321.8 339.6

2028 315.9 333.8

2029 310.3 328.3

2030 305.0 323.2

2031 300.9 318.9

2032 296.8 314.8

2033	292.7	310.6
2034	288.7	306.6
2035	284.9	302.6
2036	281.2	298.9
2037	277.8	295.3
2038	273.7	291.0
2039	269.7	286.7
2040	265.6	282.4
2041	261.7	278.2
2042	257.7	274.0
2043	253.9	269.9
2044	250.0	265.8
2045	246.1	261.7
2046	242.3	257.6
2047	238.5	253.6
2048	234.8	249.6
2049	232.2	246.9
2050	229.7	244.2
2051	227.4	241.8
2052	225.2	239.4
2053	223.0	237.1
2054	220.8	234.7
2055	218.5	232.3
2056	216.3	230.0
2057	214.1	227.7
2058	212.0	225.4
2059	209.9	223.1
2060	207.7	220.9
2061	205.7	218.7
2062	203.7	216.5
2063	201.7	214.4
2064	199.7	212.3
2065	197.8	210.3
2066	195.9	208.3
2067	194.0	206.3
2068	192.1	204.3
2069	190.3	202.3
2070	188.4	200.3

2071	186.6	198.4
2072	184.8	196.4
2073	183.0	194.5
2074	181.2	192.6
2075	179.4	190.7
2076	177.6	188.9
2077	175.9	187.0
2078	174.2	185.2
2079	172.5	183.4
2080	170.8	181.6
2081	169.1	179.8
2082	167.4	178.0

Costs and benefits discounted to 2010 in multiples of a thousand pounds.

[Section 1.2] Accident Summary

Total Without-Scheme Accidents = 398.5

Total With-Scheme Accidents = 473.5

Total Accidents Saved by Scheme = -75.0

Year	W/o-scheme	With-Scheme
2023	6.6	7.8
2024	6.6	7.8
2025	6.6	7.8
2026	6.6	7.8
2027	6.6	7.8
2028	6.6	7.8
2029	6.6	7.8
2030	6.6	7.8
2031	6.6	7.8
2032	6.6	7.8
2033	6.6	7.8
2034	6.6	7.9
2035	6.6	7.9
2036	6.6	7.9

2037	6.7	7.9
2038	6.7	7.9
2039	6.7	7.9
2040	6.7	7.9
2041	6.7	7.9
2042	6.7	7.9
2043	6.7	7.9
2044	6.7	7.9
2045	6.7	7.9
2046	6.7	7.9
2047	6.7	7.9
2048	6.7	7.9
2049	6.7	7.9
2050	6.7	7.9
2051	6.7	7.9
2052	6.7	7.9
2053	6.7	7.9
2054	6.7	7.9
2055	6.7	7.9
2056	6.7	7.9
2057	6.7	7.9
2058	6.7	7.9
2059	6.7	7.9
2060	6.7	7.9
2061	6.7	7.9
2062	6.7	7.9
2063	6.7	7.9
2064	6.7	7.9
2065	6.7	7.9
2066	6.7	7.9
2067	6.7	7.9
2068	6.7	7.9
2069	6.7	7.9
2070	6.7	7.9
2071	6.7	7.9
2072	6.7	7.9
2073	6.7	7.9
2074	6.7	7.9

2075	6.7	7.9
2076	6.7	7.9
2077	6.7	7.9
2078	6.7	7.9
2079	6.7	7.9
2080	6.7	7.9
2081	6.7	7.9
2082	6.7	7.9

[Section 1.3] Casualty Summary

Total Without-Scheme Casualties (Fatal) = 2.6

(Serious) = 34.6

(Slight) = 553.3

Total With-Scheme Casualties (Fatal) = 1.2

(Serious) = 28.6

(Slight) = 629.3

Total Casualties Saved by Scheme (Fatal) = 1.4

(Serious) = 5.9

(Slight) = -76.0

Year	-----Without-Scheme-----			-----With-Scheme-----		
Year	Fatal	Serious	Slight	Fatal	Serious	Slight
2023	0.0	0.6	9.2	0.0	0.5	10.4
2024	0.0	0.6	9.2	0.0	0.5	10.4
2025	0.0	0.6	9.2	0.0	0.5	10.3
2026	0.0	0.6	9.2	0.0	0.5	10.3
2027	0.0	0.6	9.1	0.0	0.5	10.3
2028	0.0	0.6	9.1	0.0	0.5	10.3
2029	0.0	0.6	9.1	0.0	0.5	10.3
2030	0.0	0.6	9.1	0.0	0.5	10.3
2031	0.0	0.6	9.1	0.0	0.5	10.4
2032	0.0	0.6	9.1	0.0	0.5	10.4
2033	0.0	0.6	9.2	0.0	0.5	10.4
2034	0.0	0.6	9.2	0.0	0.5	10.4
2035	0.0	0.6	9.2	0.0	0.5	10.5



2036	0.0	0.6	9.2	0.0	0.5	10.5
2037	0.0	0.6	9.2	0.0	0.5	10.5
2038	0.0	0.6	9.2	0.0	0.5	10.5
2039	0.0	0.6	9.2	0.0	0.5	10.5
2040	0.0	0.6	9.2	0.0	0.5	10.5
2041	0.0	0.6	9.2	0.0	0.5	10.5
2042	0.0	0.6	9.2	0.0	0.5	10.5
2043	0.0	0.6	9.2	0.0	0.5	10.5
2044	0.0	0.6	9.2	0.0	0.5	10.5
2045	0.0	0.6	9.2	0.0	0.5	10.5
2046	0.0	0.6	9.2	0.0	0.5	10.5
2047	0.0	0.6	9.2	0.0	0.5	10.5
2048	0.0	0.6	9.2	0.0	0.5	10.5
2049	0.0	0.6	9.2	0.0	0.5	10.5
2050	0.0	0.6	9.2	0.0	0.5	10.5
2051	0.0	0.6	9.2	0.0	0.5	10.5
2052	0.0	0.6	9.2	0.0	0.5	10.5
2053	0.0	0.6	9.2	0.0	0.5	10.5
2054	0.0	0.6	9.2	0.0	0.5	10.5
2055	0.0	0.6	9.2	0.0	0.5	10.5
2056	0.0	0.6	9.2	0.0	0.5	10.5
2057	0.0	0.6	9.2	0.0	0.5	10.5
2058	0.0	0.6	9.2	0.0	0.5	10.5
2059	0.0	0.6	9.2	0.0	0.5	10.5
2060	0.0	0.6	9.2	0.0	0.5	10.5
2061	0.0	0.6	9.2	0.0	0.5	10.5
2062	0.0	0.6	9.2	0.0	0.5	10.5
2063	0.0	0.6	9.2	0.0	0.5	10.5
2064	0.0	0.6	9.2	0.0	0.5	10.5
2065	0.0	0.6	9.2	0.0	0.5	10.5
2066	0.0	0.6	9.2	0.0	0.5	10.5
2067	0.0	0.6	9.2	0.0	0.5	10.5
2068	0.0	0.6	9.2	0.0	0.5	10.5
2069	0.0	0.6	9.2	0.0	0.5	10.5
2070	0.0	0.6	9.2	0.0	0.5	10.5
2071	0.0	0.6	9.2	0.0	0.5	10.5
2072	0.0	0.6	9.2	0.0	0.5	10.5
2073	0.0	0.6	9.2	0.0	0.5	10.5

2074	0.0	0.6	9.2	0.0	0.5	10.5
2075	0.0	0.6	9.2	0.0	0.5	10.5
2076	0.0	0.6	9.2	0.0	0.5	10.5
2077	0.0	0.6	9.2	0.0	0.5	10.5
2078	0.0	0.6	9.2	0.0	0.5	10.5
2079	0.0	0.6	9.2	0.0	0.5	10.5
2080	0.0	0.6	9.2	0.0	0.5	10.5
2081	0.0	0.6	9.2	0.0	0.5	10.5
2082	0.0	0.6	9.2	0.0	0.5	10.5

[Section 2] Accident Statistics

[Section 2.1] Link Accident Statistics

	*----- Without-Scheme -----*			*----- With-Scheme -----*			*----- Benefits -----*			
	*-- Number of Accidents -*			*-- Number of Accidents -*			*-- Number of Accidents -*			Total*
Link Name	* 2023	2038	Total*	Cost* * 2023	2038	Total*	Cost* * 2023	2038	Total*	Benefit*
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Costs and benefits discounted to 2010 in multiples of a thousand pounds.

[Section 2.2] Junction Accident Statistics

	*----- Without-Scheme -----*			*----- With-Scheme -----*			*----- Benefits -----*					
	*-- Number of Accidents -*			*-- Number of Accidents -*			*-- Number of Accidents -*			Total*		
Junction Name	* 2023	2038	Total*	Cost* * 2023	2038	Total*	Cost* * 2023	2038	Total*	Benefit*		
1	1.9	1.9	115.6	3,502.3	0.0	0.0	0.0	0.0	1.9	1.9	115.6	3,502.3
2	0.0	0.0	0.0	0.0	2.7	2.7	163.2	5,146.2	-2.7	-2.7	-163.2	-5,146.2
5	1.3	1.3	79.3	4,341.2	0.0	0.0	0.0	0.0	1.3	1.3	79.3	4,341.2
6	0.0	0.0	0.0	0.0	0.7	0.7	42.1	1,532.3	-0.7	-0.7	-42.1	-1,532.3
7	1.5	1.5	88.3	2,681.2	1.5	1.5	88.3	2,681.2	0.0	0.0	0.0	0.0
11	1.8	1.9	115.3	3,629.8	0.0	0.0	0.0	0.0	1.8	1.9	115.3	3,629.8
12	0.0	0.0	0.0	0.0	2.9	3.0	179.9	5,663.5	-2.9	-3.0	-179.9	-5,663.5

Total 6.6 6.7 398.5 14,154.5 7.8 7.9 473.5 15,023.2 -1.2 -1.3 -75.0 -868.6

Costs and benefits discounted to 2010 in multiples of a thousand pounds.

accidents in year

WITHOUT-SCHEME

Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		

1 1.9174 1.9145 1.9117 1.9089 1.9060 1.9032 1.9004 1.8975 1.9023 1.9071 1.9118 1.9166 1.9214 1.9262 1.9310 1.9310 1.9310  
 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310 1.9310  
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WITH-SCHEME

Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		

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 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272 2.7272  
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5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.7089	0.7069	0.7050	0.7030	0.7011	0.6992	0.6972	0.6953	0.6962	0.6970	0.6979	0.6987	0.6996	0.7004	0.7026	0.7026	0.7026	0.7026	0.7026
7	1.5112	1.5051	1.4991	1.4931	1.4871	1.4812	1.4753	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694	1.4694
11	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12	2.8769	2.8837	2.8905	2.8973	2.9041	2.9109	2.9176	2.9243	2.9376	2.9510	2.9644	2.9777	2.9912	3.0046	3.0181	3.0181	3.0181	3.0181	3.0181

proportion of fatal accidents in year

WITHOUT-SCHEME

Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		
1	0.00414	0.00412	0.00411	0.00409	0.00407	0.00406	0.00404	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403
2	0.00228	0.00227	0.00227	0.00226	0.00226	0.00226	0.00225	0.00225	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224
5	0.02004	0.01996	0.01988	0.01980	0.01972	0.01964	0.01956	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948	0.01948
6	0.00651	0.00648	0.00645	0.00643	0.00640	0.00638	0.00635	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633	0.00633
7	0.00414	0.00412	0.00411	0.00409	0.00407	0.00406	0.00404	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403	0.00403
11	0.00228	0.00227	0.00227	0.00226	0.00226	0.00225	0.00225	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224
12	0.00228	0.00227	0.00227	0.00226	0.00226	0.00225	0.00225	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224	0.00224

WITH-SCHEME





























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Fatal costs

WITHOUT-SCHEME

Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		
1	8,845.3	8,641.9	8,455.7	8,283.3	8,124.0	7,975.5	7,832.8	7,700.2	7,599.5	7,500.0	7,400.4	7,302.8	7,208.6	7,119.7	7,032.6	6,930.0	6,827.6		
6,725.3	6,624.6	6,525.4	6,427.1	6,328.9	6,231.7	6,135.4	6,039.3	5,944.2	5,879.0	5,815.7	5,758.1	5,701.6	5,645.7	5,589.8	5,532.8	5,476.9	5,421.6		
5,367.4	5,313.2	5,259.6	5,207.5	5,156.4	5,105.9	5,056.3	5,007.7	4,959.6	4,911.9	4,864.7	4,817.5	4,770.7	4,724.4	4,678.0	4,632.2	4,586.7	4,541.8		
4,497.2	4,453.1	4,409.5	4,366.2	4,323.4	4,281.0	4,239.0													
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	30,413.5	29,665.5	28,978.6	28,341.2	27,750.4	27,198.7	26,668.4	26,174.0	25,789.4	25,410.4	25,032.0	24,661.6	24,303.9	23,965.3	23,666.0	23,320.8			
22,976.0	22,631.9	22,293.0	21,959.1	21,628.2	21,298.0	20,970.8	20,646.6	20,323.5	20,003.4	19,783.9	19,570.7	19,376.9	19,186.9	18,998.8	18,810.6	18,618.9			
18,430.9	18,244.8	18,062.3	17,879.9	17,699.4	17,524.1	17,352.3	17,182.1	17,015.3	16,851.8	16,689.8	16,529.4	16,370.5	16,211.6	16,054.2	15,898.3	15,742.4			
15,588.1	15,435.2	15,283.8	15,134.0	14,985.6	14,838.6	14,693.1	14,549.0	14,406.4	14,265.1										
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	6,971.4	6,793.9	6,630.7	6,479.2	6,338.5	6,207.0	6,080.7	5,962.7	5,870.0	5,778.6	5,687.6	5,598.6	5,512.6	5,431.1	5,351.4	5,273.3	5,195.3		
5,117.5	5,040.9	4,965.4	4,890.5	4,815.9	4,741.9	4,668.6	4,595.5	4,523.2	4,473.5	4,425.3	4,381.5	4,338.5	4,296.0	4,253.4	4,210.1	4,167.6	4,125.5		
4,084.2	4,043.0	4,002.2	3,962.5	3,923.7	3,885.2	3,847.5	3,810.5	3,773.9	3,737.6	3,701.7	3,665.8	3,630.2	3,594.9	3,559.7	3,524.8	3,490.2	3,456.0		
3,422.1	3,388.5	3,355.3	3,322.4	3,289.8	3,257.6	3,225.6													
11	3,375.7	3,310.8	3,252.0	3,197.9	3,148.4	3,102.7	3,058.8	3,018.4	2,985.0	2,951.9	2,918.6	2,885.9	2,854.4	2,824.8	2,795.8	2,755.0	2,714.3		
2,673.6	2,633.6	2,594.1	2,555.0	2,516.0	2,477.4	2,439.1	2,400.9	2,363.1	2,337.2	2,312.0	2,289.1	2,266.7	2,244.4	2,222.2	2,199.5	2,177.3	2,155.4		
2,133.8	2,112.3	2,090.9	2,070.2	2,049.9	2,029.8	2,010.1	1,990.8	1,971.7	1,952.7	1,933.9	1,915.2	1,896.6	1,878.2	1,859.7	1,841.5	1,823.4	1,805.6		
1,787.9	1,770.3	1,753.0	1,735.8	1,718.8	1,701.9	1,685.2													
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WITH-SCHEME

Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	4,920.5	4,814.2	4,717.1	4,627.5	4,544.9	4,468.1	4,394.4	4,326.1	4,268.1	4,210.8	4,153.5	4,097.3	4,043.0	3,991.9	3,941.7	3,884.2	3,826.8		
3,769.5	3,713.0	3,657.4	3,602.3	3,547.3	3,492.8	3,438.8	3,385.0	3,331.7	3,295.1	3,259.6	3,227.3	3,195.7	3,164.3	3,133.0	3,101.1	3,069.8	3,038.8		
3,008.4	2,978.0	2,947.9	2,918.7	2,890.1	2,861.8	2,834.0	2,806.8	2,779.8	2,753.1	2,726.6	2,700.1	2,673.9	2,647.9	2,622.0	2,596.3	2,570.8	2,545.6		
2,520.6	2,495.9	2,471.5	2,447.2	2,423.2	2,399.5	2,375.9													
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	5,177.9	5,052.4	4,937.2	4,830.4	4,731.4	4,639.0	4,550.2	4,467.4	4,403.3	4,340.2	4,277.1	4,215.3	4,155.6	4,099.2	4,051.7	3,992.6	3,933.5		
3,874.6	3,816.6	3,759.5	3,702.8	3,646.3	3,590.2	3,534.7	3,479.4	3,424.6	3,387.1	3,350.6	3,317.4	3,284.8	3,252.6	3,220.4	3,187.6	3,155.4	3,123.5		
3,092.3	3,061.1	3,030.2	3,000.2	2,970.8	2,941.6	2,913.1	2,885.1	2,857.3	2,829.9	2,802.7	2,775.5	2,748.5	2,721.8	2,695.1	2,668.7	2,642.5	2,616.6		
2,591.0	2,565.6	2,540.4	2,515.5	2,490.8	2,466.4	2,442.2													
7	6,971.4	6,793.9	6,630.7	6,479.2	6,338.5	6,207.0	6,080.7	5,962.7	5,870.0	5,778.6	5,687.6	5,598.6	5,512.6	5,431.1	5,351.4	5,273.3	5,195.3		
5,117.5	5,040.9	4,965.4	4,890.5	4,815.9	4,741.9	4,668.6	4,595.5	4,523.2	4,473.5	4,425.3	4,381.5	4,338.5	4,296.0	4,253.4	4,210.1	4,167.6	4,125.5		



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6 8,535.8 8,328.9 8,139.0 7,962.9 7,799.7 7,647.4 7,501.0 7,364.6 7,258.9 7,154.8 7,050.8 6,948.9 6,850.6 6,757.5 6,679.2 6,581.8 6,484.5  
6,387.4 6,291.7 6,197.5 6,104.1 6,010.9 5,918.6 5,827.1 5,735.8 5,645.5 5,583.6 5,523.4 5,468.7 5,415.1 5,362.0 5,308.9 5,254.8 5,201.7 5,149.2  
5,097.7 5,046.2 4,995.3 4,945.8 4,897.3 4,849.3 4,802.2 4,756.0 4,710.3 4,665.1 4,620.2 4,575.4 4,530.9 4,487.0 4,443.0 4,399.4 4,356.2 4,313.5  
4,271.2 4,229.3 4,187.9 4,146.8 4,106.1 4,065.9 4,026.0

7 13,030.2 12,698.5 12,393.5 12,110.2 11,847.3 11,601.5 11,365.3 11,144.9 10,971.5 10,800.9 10,630.8 10,464.4 10,303.6 10,151.3 10,002.2 9,856.3  
9,710.6 9,565.2 9,421.9 9,280.8 9,140.9 9,001.4 8,863.1 8,726.1 8,589.5 8,454.2 8,361.5 8,271.4 8,189.5 8,109.2 8,029.6 7,950.1 7,869.1 7,789.6  
7,711.0 7,633.9 7,556.8 7,480.5 7,406.4 7,333.8 7,261.9 7,191.4 7,122.2 7,053.8 6,986.0 6,918.8 6,851.7 6,785.1 6,719.3 6,653.4 6,588.1 6,523.5  
6,459.6 6,396.2 6,333.5 6,271.4 6,209.9 6,149.0 6,088.7 6,029.0

11 0.0  
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12 20,243.3 19,854.2 19,501.3 19,177.0 18,880.2 18,606.0 18,342.8 18,100.8 17,900.4 17,702.0 17,502.1 17,306.0 17,116.9 16,939.7 16,765.7 16,521.1  
16,276.9 16,033.1 15,793.0 15,556.5 15,322.0 15,088.1 14,856.3 14,626.7 14,397.7 14,171.0 14,015.5 13,864.5 13,727.2 13,592.6 13,459.3 13,326.0 13,190.1  
13,057.0 12,925.1 12,795.9 12,666.7 12,538.8 12,414.6 12,292.9 12,172.3 12,054.1 11,938.3 11,823.5 11,709.9 11,597.3 11,484.8 11,373.2 11,262.8 11,152.4  
11,043.0 10,934.7 10,827.5 10,721.3 10,616.2 10,512.1 10,409.0 10,307.0 10,205.9 10,105.8

Slight costs

WITHOUT-SCHEME

Junction 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040  
2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060  
2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080  
2081 2082

1 25,745.4 25,153.6 24,611.7 24,109.9 23,646.1 23,214.0 22,798.6 22,412.7 22,119.4 21,830.0 21,540.0 21,255.9 20,981.6 20,723.0 20,469.5 20,170.9  
19,872.7 19,575.1 19,281.9 18,993.2 18,706.9 18,421.3 18,138.3 17,857.9 17,578.4 17,301.6 17,111.8 16,927.3 16,759.7 16,595.4 16,432.6 16,269.9 16,104.0  
15,941.4 15,780.5 15,622.7 15,464.9 15,308.8 15,157.2 15,008.6 14,861.4 14,717.1 14,575.6 14,435.5 14,296.8 14,159.4 14,021.9 13,885.8 13,751.0 13,616.1  
13,482.6 13,350.4 13,219.5 13,089.9 12,961.5 12,834.4 12,708.5 12,583.9 12,460.5 12,338.4

2 0.0  
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5 21,638.2 21,106.0 20,617.4 20,163.8 19,743.6 19,351.0 18,973.7 18,622.0 18,348.3 18,078.7 17,809.5 17,546.0 17,291.4 17,050.6 16,837.6 16,592.0  
16,346.7 16,101.9 15,860.8 15,623.2 15,387.7 15,152.8 14,920.1 14,689.4 14,459.5 14,231.8 14,075.6 13,923.9 13,786.1 13,650.9 13,517.0 13,383.2 13,246.7  
13,113.0 12,980.6 12,850.8 12,721.0 12,592.6 12,467.9 12,345.6 12,224.5 12,105.9 11,989.5 11,874.3 11,760.1 11,647.1 11,534.0 11,422.0 11,311.1 11,200.2  
11,090.4 10,981.7 10,874.0 10,767.3 10,661.8 10,557.2 10,453.7 10,351.2 10,249.7 10,149.2

6 0.0  
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7 20,291.3 19,774.7 19,299.8 18,858.5 18,449.2 18,066.5 17,698.6 17,355.3 17,085.4 16,819.6 16,554.7 16,295.6 16,045.2 15,808.1 15,575.9 15,348.7  
15,121.8 14,895.3 14,672.2 14,452.5 14,234.7 14,017.4 13,802.0 13,588.7 13,376.0 13,165.3 13,020.9 12,880.6 12,753.0 12,627.9 12,504.1 12,380.3 12,254.1  
12,130.4 12,007.9 11,887.8 11,767.8 11,648.9 11,533.6 11,420.5 11,308.5 11,198.7 11,091.1 10,984.5 10,878.9 10,774.3 10,669.7 10,566.1 10,463.5 10,360.9  
10,259.3 10,158.7 10,059.1 9,960.5 9,862.8 9,766.1 9,670.3 9,575.5 9,481.6 9,388.6

11 23,484.3 23,032.9 22,623.4 22,247.2 21,902.9 21,584.8 21,279.5 20,998.8 20,766.3 20,536.1 20,304.2 20,076.7 19,857.3 19,651.7 19,449.9 19,166.1  
18,882.8 18,600.0 18,321.5 18,047.1 17,775.1 17,503.7 17,234.8 16,968.4 16,702.8 16,439.7 16,259.4 16,084.2 15,924.9 15,768.7 15,614.1 15,459.5 15,301.9  
15,147.4 14,994.4 14,844.5 14,694.6 14,546.2 14,402.2 14,261.0 14,121.1 13,984.0 13,849.6 13,716.5 13,584.7 13,454.1 13,323.5 13,194.1 13,066.0 12,937.9  
12,811.0 12,685.4 12,561.0 12,437.8 12,315.9 12,195.1 12,075.5 11,957.1 11,839.9 11,723.8

12 0.0  
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0.0 0.0

WITH-SCHEME

Junction 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040  
2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060  
2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080  
2081 2082



Junction	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060
2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080
2081	2082																		
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.5	47.6	47.8	47.9	48.0	48.1	48.2	48.3	48.3	48.3	48.3	48.3
48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	5.5	5.5	5.5	5.5	5.5	5.5	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
7	11.8	11.7	11.7	11.6	11.6	11.6	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	50.9	51.0	51.2	51.3	51.4	51.5	51.6	51.8	52.0	52.2	52.5	52.7	52.9	53.2	53.4	53.4	53.4	53.4	53.4
53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4

[Section 2.3] Combined Link and Junction Accident Statistics

\*----- Without-Scheme -----\* \*----- With-Scheme -----\* \*----- Benefits -----\*

\*-- Number of Accidents -\* Total\* \*-- Number of Accidents -\* Total\* \*-- Number of Accidents -\* Total\*

Link Name	* 2023	2038	Total*	Cost* * 2023	2038	Total*	Cost* * 2023	2038	Total*	Benefit*
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Costs and benefits discounted to 2010 in multiples of a thousand pounds.

[Section 3] Accident Rates

[Section 3.1] Link Accident Rates

\*----- Accident Rate -----\*

Link Name	* 2023	2038 *
-----------	--------	--------

Accident rates are in accidents per million vehicle kilometres.

[Section 3.2] Junction Accident Rates

\*---- Coefficient 'a' ----\*

Junction Name	* 2023	2038 *
1	0.003599	0.003500
2	0.011819	0.011634
5	0.334262	0.325014
6	0.100108	0.097339
7	0.005175	0.005032
11	0.003246	0.003196
12	0.005065	0.004986

[Section 3.3] Combined Link and Junction Accident Rates

\*----- Accident Rate -----\*

Link Name	* 2023	2038 *
-----------	--------	--------

Accident rates are in accidents per million vehicle kilometres.

[Section 4] Input Data - Scheme File

Scheme Name

A614\_A6075\_COBALT

Years Subsection

Current Year 2019

Base Year 2017

Without-Scheme

Year 1 2023

Year 2 2037

Year 3 0

Year 4 0

Year 5 0

With-Scheme

Year 1 2023

Year 2 2037

Year 3 0

Year 4 0

Year 5 0

Scheme Opening Year 2023

Link Input Section

Link Classification Subsection

Link Road Length Speed Limit Error/Warning Summary

Name Type (km) (mph) (!=Error, #=Warning)

Link Flow Subsection

Link Base Year Without-Scheme Flows With-Scheme Flows

Name Flows Year 1 Year 2 Year 3 Year 4 Year 5 Year 1 Year 2 Year 3 Year 4 Year 5

Link Local Accident Rate Subsection

Link Observed First Observed Local Severity Split

Name Accidents Accident Year Ratio Year

Junction Input Section

Junction Classification Subsection

Junction Junction Highest Highest Speed Limit Error/Warning Summary

Name Geometry Carriageway Standard (mph) (!=Error, #=Warning)

1 4 Single Major 60

2 4 Single Major 30

5 1 Single Major 50

6 3 Single Major 50

7 4 Single Major 50

11 4 Dual Major 40

12 4 Dual Major 40

Junction Flow Subsection

Base Year Flows

Junction	Arm 1	Arm 2	Arm 3	Arm 4	Arm 5	Arm 6
Name	(Major)	(Minor)	(Major)	(Minor)	(Major)	(Minor)
1	5,508	10,085	8,728	4,110	3,499	0
2	0	0	0	0	0	0
5	9,666	1,660	10,018	0	0	0
6	0	0	0	0	0	0
7	9,499	2,351	10,551	2,309	0	0
11	10,920	4,671	12,984	8,119	0	0
12	0	0	0	0	0	0

Without-Scheme Year Flows

Junction	Year	Arm 1	Arm 2	Arm 3	Arm 4	Arm 5	Arm 6
Name		(Major)	(Minor)	(Major)	(Minor)	(Major)	(Minor)
1	1	5,842	10,693	9,607	4,899	3,664	0
1	2	5,951	10,912	9,891	4,929	3,718	0
2	1	0	0	0	0	0	0
2	2	0	0	0	0	0	0
5	1	10,514	1,969	11,021	0	0	0
5	2	10,831	2,002	11,335	75	0	0
6	1	0	0	0	0	0	0
6	2	0	0	0	0	0	0
7	1	9,499	2,351	10,551	2,309	0	0
7	2	9,499	2,351	10,551	2,309	0	0
11	1	11,759	4,817	13,979	8,538	0	0
11	2	12,164	4,882	14,668	8,845	0	0
12	1	0	0	0	0	0	0
12	2	0	0	0	0	0	0

With-Scheme Year Flows

Junction	Year	Arm 1	Arm 2	Arm 3	Arm 4	Arm 5
Name		(Major)	(Minor)	(Major)	(Minor)	(Major)
1	1	0	0	0	0	0
1	2	0	0	0	0	0
2	1	5,842	10,693	9,607	4,899	3,664
2	2	5,951	10,912	9,891	4,929	3,718
5	1	0	0	0	0	0



5	2	0	0	0	0	0	0	0
6	1	10,514	1,969	11,021	0	0	0	0
6	2	10,831	2,002	11,335	75	0	0	0
7	1	9,499	2,351	10,551	2,309	0	0	0
7	2	9,499	2,351	10,551	2,309	0	0	0
11	1	0	0	0	0	0	0	0
11	2	0	0	0	0	0	0	0
12	1	11,759	4,817	13,979	8,538	0	0	0
12	2	12,164	4,882	14,668	8,845	0	0	0

Junction Local Accident Rate Subsection

Junction	Observed	First Observed	Local Severity Split
Name	Accidents	Accident Year	Ratio Year
1	3,2,0	2015	
5	1,3,0	2015	
6	0.105R	2015	
11	2,0,3	2015	

Link and Junction Combined Input Section

Combined Classification Subsection

Link	Road	Length	Speed Limit	Error/Warning Summary
Name	Type	(km)	(mph)	(!=Error, !=Warning)

Combined Flow Subsection

Link	Base Year	Without-Scheme Flows					With-Scheme Flows				
Name	Flows	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5

Combined Local Accident Rate Subsection

Link	Observed	First Observed	Local Severity Split
Name	Accidents	Accident Year	Ratio Year

[Section 5] Input Data - Parameter File

COBALT Parameter File

Version 2,018.10

Cost Base Year

2010

Appraisal Period

60

Discount Rate

Years from Discount

Current Year Rate (%)

30 3.50

75 3.00

125 2.50

Cost per Casualty

Severity Cost

Fatal 1,556,244

Serious 174,878

Slight 13,481

Cost per Accident

Severity Insurance Damage to Property

Administration Urban Rural Motorway

Fatal 285 7,441 12,621 16,054

Serious 178 3,998 5,753 13,698

Slight 108 2,353 3,814 6,930

Damage 51 2,353 2,515 2,417

Police Cost

Urban Rural Motorway

Fatal 16,755 17,205 17,405

Serious 1,850 2,310 2,439

Slight 478 656 547

Damage 478 20 17

Compound Annual Rates of Growth of Accident Values

Range of Years Rate of Growth (%p.a.)

2010-2011 0.61

2011-2012 0.81

2012-2013 1.41

2013-2014	2.27
2014-2015	1.54
2015-2016	1.10
2016-2017	1.17
2017-2018	0.90
2018-2019	0.65
2019-2020	0.71
2020-2021	0.82
2021-2022	0.94
2022-2023	1.15
2023-2024	1.27
2024-2025	1.42
2025-2026	1.54
2026-2027	1.66
2027-2028	1.76
2028-2029	1.80
2029-2030	1.90
2030-2032	1.89
2032-2033	1.87
2033-2034	1.88
2034-2035	1.91
2035-2036	1.97
2036-2037	1.98
2037-2038	1.99
2038-2039	1.97
2039-2042	1.95
2042-2043	1.94
2043-2044	1.92
2044-2045	1.91
2045-2046	1.90
2046-2047	1.88
2047-2049	1.87
2049-2050	1.89
2050-2051	1.98
2051-2053	1.99
2053-2054	1.98
2054-2055	1.95
2055-2057	1.96

2057-2058	1.97
2058-2060	1.96
2060-2061	1.98
2061-2063	1.99
2063-2064	2.00
2064-2068	2.01
2068-2071	2.00
2071-2094	1.99
2094-2110	1.98

Number of Damage Only Accidents per PIA

	Urban	Rural	Motorway
Damage	17.7	7.8	7.6

Link Only Accident Proportions

Base Year

2009

Road Type	Speed Limit (mph)	Accident Proportions		
		Fatal	Serious	Slight
1	50	0.019	0.104	0.877
1	60	0.019	0.104	0.877
1	70	0.019	0.104	0.877
1	80	0.019	0.104	0.877
2	50	0.019	0.104	0.877
2	60	0.019	0.104	0.877
2	70	0.019	0.104	0.877
2	80	0.019	0.104	0.877
3	50	0.019	0.104	0.877
3	60	0.019	0.104	0.877
3	70	0.019	0.104	0.877
3	80	0.019	0.104	0.877
4	30	0.014	0.145	0.841
4	40	0.014	0.145	0.841
4	50	0.046	0.206	0.748
4	60	0.046	0.206	0.748
4	70	0.046	0.206	0.748
4	80	0.046	0.206	0.748
5	30	0.014	0.145	0.841

5	40	0.014	0.145	0.841
5	50	0.046	0.206	0.748
5	60	0.046	0.206	0.748
5	70	0.046	0.206	0.748
5	80	0.046	0.206	0.748
6	30	0.014	0.145	0.841
6	40	0.014	0.145	0.841
6	50	0.046	0.206	0.748
6	60	0.046	0.206	0.748
6	70	0.046	0.206	0.748
6	80	0.046	0.206	0.748
7	30	0.014	0.145	0.841
7	40	0.014	0.145	0.841
7	50	0.046	0.206	0.748
7	60	0.046	0.206	0.748
7	70	0.046	0.206	0.748
7	80	0.046	0.206	0.748
8	30	0.014	0.145	0.841
8	40	0.014	0.145	0.841
8	50	0.046	0.206	0.748
8	60	0.046	0.206	0.748
8	70	0.046	0.206	0.748
8	80	0.046	0.206	0.748
9	30	0.010	0.145	0.846
9	40	0.010	0.145	0.846
9	50	0.026	0.193	0.780
9	60	0.026	0.193	0.780
9	70	0.026	0.193	0.780
9	80	0.026	0.193	0.780
10	30	0.017	0.135	0.849
10	40	0.017	0.135	0.849
10	50	0.028	0.135	0.837
10	60	0.028	0.135	0.837
10	70	0.028	0.135	0.837
10	80	0.028	0.135	0.837
11	30	0.017	0.135	0.849
11	40	0.017	0.135	0.849
11	50	0.028	0.135	0.837

11	60	0.028	0.135	0.837
11	70	0.028	0.135	0.837
11	80	0.028	0.135	0.837
12	30	0.017	0.135	0.849
12	40	0.017	0.135	0.849
12	50	0.028	0.135	0.837
12	60	0.028	0.135	0.837
12	70	0.028	0.135	0.837
12	80	0.028	0.135	0.837
13	30	0.017	0.135	0.849
13	40	0.017	0.135	0.849
13	50	0.028	0.135	0.837
13	60	0.028	0.135	0.837
13	70	0.028	0.135	0.837
13	80	0.028	0.135	0.837
14	30	0.017	0.135	0.849
14	40	0.017	0.135	0.849
14	50	0.028	0.135	0.837
14	60	0.028	0.135	0.837
14	70	0.028	0.135	0.837
14	80	0.028	0.135	0.837
15	30	0.017	0.135	0.849
15	40	0.017	0.135	0.849
15	50	0.028	0.135	0.837
15	60	0.028	0.135	0.837
15	70	0.028	0.135	0.837
15	80	0.028	0.135	0.837

Link and Junction Combined Accident Proportions

Base Year

2009

Road Type	Speed Limit (mph)	Accident Proportions		
		Fatal	Serious	Slight
1	50	0.018	0.101	0.882
1	60	0.018	0.101	0.882
1	70	0.018	0.101	0.882
1	80	0.018	0.101	0.882
2	50	0.018	0.101	0.882

2	60	0.018	0.101	0.882
2	70	0.018	0.101	0.882
2	80	0.018	0.101	0.882
3	50	0.018	0.101	0.882
3	60	0.018	0.101	0.882
3	70	0.018	0.101	0.882
3	80	0.018	0.101	0.882
4	30	0.008	0.122	0.869
4	40	0.008	0.122	0.869
4	50	0.034	0.187	0.779
4	60	0.034	0.187	0.779
4	70	0.034	0.187	0.779
4	80	0.034	0.187	0.779
5	30	0.008	0.122	0.869
5	40	0.008	0.122	0.869
5	50	0.034	0.187	0.779
5	60	0.034	0.187	0.779
5	70	0.034	0.187	0.779
5	80	0.034	0.187	0.779
6	30	0.008	0.122	0.869
6	40	0.008	0.122	0.869
6	50	0.034	0.187	0.779
6	60	0.034	0.187	0.779
6	70	0.034	0.187	0.779
6	80	0.034	0.187	0.779
7	30	0.008	0.122	0.869
7	40	0.008	0.122	0.869
7	50	0.034	0.187	0.779
7	60	0.034	0.187	0.779
7	70	0.034	0.187	0.779
7	80	0.034	0.187	0.779
8	30	0.008	0.122	0.869
8	40	0.008	0.122	0.869
8	50	0.034	0.187	0.779
8	60	0.034	0.187	0.779
8	70	0.034	0.187	0.779
8	80	0.034	0.187	0.779
9	30	0.007	0.126	0.867

9	40	0.007	0.126	0.867
9	50	0.024	0.187	0.789
9	60	0.024	0.187	0.789
9	70	0.024	0.187	0.789
9	80	0.024	0.187	0.789
10	30	0.009	0.104	0.887
10	40	0.009	0.104	0.887
10	50	0.023	0.127	0.850
10	60	0.023	0.127	0.850
10	70	0.023	0.127	0.850
10	80	0.023	0.127	0.850
11	30	0.009	0.104	0.887
11	40	0.009	0.104	0.887
11	50	0.023	0.127	0.850
11	60	0.023	0.127	0.850
11	70	0.023	0.127	0.850
11	80	0.023	0.127	0.850
12	30	0.009	0.104	0.887
12	40	0.009	0.104	0.887
12	50	0.023	0.127	0.850
12	60	0.023	0.127	0.850
12	70	0.023	0.127	0.850
12	80	0.023	0.127	0.850
13	30	0.009	0.104	0.887
13	40	0.009	0.104	0.887
13	50	0.023	0.127	0.850
13	60	0.023	0.127	0.850
13	70	0.023	0.127	0.850
13	80	0.023	0.127	0.850
14	30	0.009	0.104	0.887
14	40	0.009	0.104	0.887
14	50	0.023	0.127	0.850
14	60	0.023	0.127	0.850
14	70	0.023	0.127	0.850
14	80	0.023	0.127	0.850
15	30	0.009	0.104	0.887
15	40	0.009	0.104	0.887
15	50	0.023	0.127	0.850



15	60	0.023	0.127	0.850
15	70	0.023	0.127	0.850
15	80	0.023	0.127	0.850

Junction Only Accident Proportions

Base Year

2000

Road Type Speed Limit Accident Proportions

	(mph)	Fatal	Serious	Slight
1	50	0.024	0.188	0.787
1	60	0.024	0.188	0.787
1	70	0.024	0.188	0.787
1	80	0.024	0.188	0.787
2	30	0.007	0.124	0.869
2	40	0.007	0.124	0.869
3	50	0.024	0.188	0.787
3	60	0.024	0.188	0.787
3	70	0.024	0.188	0.787
3	80	0.024	0.188	0.787
4	30	0.007	0.124	0.869
4	40	0.007	0.124	0.869
5	50	0.027	0.206	0.766
5	60	0.027	0.206	0.766
5	70	0.027	0.206	0.766
5	80	0.027	0.206	0.766
6	30	0.006	0.116	0.878
6	40	0.006	0.116	0.878
7	50	0.027	0.206	0.766
7	60	0.027	0.206	0.766
7	70	0.027	0.206	0.766
7	80	0.027	0.206	0.766
8	30	0.006	0.116	0.878
8	40	0.006	0.116	0.878
9	50	0.027	0.206	0.766
9	60	0.027	0.206	0.766
9	70	0.027	0.206	0.766
9	80	0.027	0.206	0.766
10	30	0.006	0.116	0.878

10	40	0.006	0.116	0.878
11	50	0.027	0.206	0.766
11	60	0.027	0.206	0.766
11	70	0.027	0.206	0.766
11	80	0.027	0.206	0.766
12	30	0.006	0.116	0.878
12	40	0.006	0.116	0.878
13	50	0.024	0.188	0.787
13	60	0.024	0.188	0.787
13	70	0.024	0.188	0.787
13	80	0.024	0.188	0.787
14	30	0.007	0.124	0.869
14	40	0.007	0.124	0.869
15	50	0.024	0.188	0.787
15	60	0.024	0.188	0.787
15	70	0.024	0.188	0.787
15	80	0.024	0.188	0.787
16	30	0.007	0.124	0.869
16	40	0.007	0.124	0.869
17	50	0.027	0.206	0.766
17	60	0.027	0.206	0.766
17	70	0.027	0.206	0.766
17	80	0.027	0.206	0.766
18	30	0.006	0.116	0.878
18	40	0.006	0.116	0.878
19	50	0.027	0.206	0.766
19	60	0.027	0.206	0.766
19	70	0.027	0.206	0.766
19	80	0.027	0.206	0.766
20	30	0.006	0.116	0.878
20	40	0.006	0.116	0.878
21	50	0.027	0.206	0.766
21	60	0.027	0.206	0.766
21	70	0.027	0.206	0.766
21	80	0.027	0.206	0.766
22	30	0.006	0.116	0.878
22	40	0.006	0.116	0.878
23	50	0.027	0.206	0.766

23	60	0.027	0.206	0.766
23	70	0.027	0.206	0.766
23	80	0.027	0.206	0.766
24	30	0.006	0.116	0.878
24	40	0.006	0.116	0.878
25	50	0.024	0.188	0.787
25	60	0.024	0.188	0.787
25	70	0.024	0.188	0.787
25	80	0.024	0.188	0.787
26	30	0.007	0.124	0.869
26	40	0.007	0.124	0.869
27	50	0.024	0.188	0.787
27	60	0.024	0.188	0.787
27	70	0.024	0.188	0.787
27	80	0.024	0.188	0.787
28	30	0.007	0.124	0.869
28	40	0.007	0.124	0.869
29	50	0.027	0.206	0.766
29	60	0.027	0.206	0.766
29	70	0.027	0.206	0.766
29	80	0.027	0.206	0.766
30	30	0.006	0.116	0.878
30	40	0.006	0.116	0.878
31	50	0.027	0.206	0.766
31	60	0.027	0.206	0.766
31	70	0.027	0.206	0.766
31	80	0.027	0.206	0.766
32	30	0.006	0.116	0.878
32	40	0.006	0.116	0.878
33	50	0.027	0.206	0.766
33	60	0.027	0.206	0.766
33	70	0.027	0.206	0.766
33	80	0.027	0.206	0.766
34	30	0.006	0.116	0.878
34	40	0.006	0.116	0.878
35	50	0.027	0.206	0.766
35	60	0.027	0.206	0.766
35	70	0.027	0.206	0.766

35	80	0.027	0.206	0.766
36	30	0.006	0.116	0.878
36	40	0.006	0.116	0.878
37	50	0.009	0.117	0.874
37	60	0.009	0.117	0.874
37	70	0.009	0.117	0.874
37	80	0.009	0.117	0.874
38	30	0.006	0.107	0.887
38	40	0.006	0.107	0.887
39	50	0.009	0.117	0.874
39	60	0.009	0.117	0.874
39	70	0.009	0.117	0.874
39	80	0.009	0.117	0.874
40	30	0.006	0.107	0.887
40	40	0.006	0.107	0.887
41	50	0.009	0.115	0.876
41	60	0.009	0.115	0.876
41	70	0.009	0.115	0.876
41	80	0.009	0.115	0.876
42	30	0.006	0.107	0.887
42	40	0.006	0.107	0.887
43	50	0.009	0.115	0.876
43	60	0.009	0.115	0.876
43	70	0.009	0.115	0.876
43	80	0.009	0.115	0.876
44	30	0.006	0.107	0.887
44	40	0.006	0.107	0.887
45	50	0.009	0.115	0.876
45	60	0.009	0.115	0.876
45	70	0.009	0.115	0.876
45	80	0.009	0.115	0.876
46	30	0.006	0.107	0.887
46	40	0.006	0.107	0.887
47	50	0.009	0.115	0.876
47	60	0.009	0.115	0.876
47	70	0.009	0.115	0.876
47	80	0.009	0.115	0.876
48	30	0.006	0.107	0.887

48	40	0.006	0.107	0.887
49	50	0.006	0.091	0.903
49	60	0.006	0.091	0.903
49	70	0.006	0.091	0.903
49	80	0.006	0.091	0.903
50	30	0.003	0.075	0.923
50	40	0.003	0.075	0.923
51	50	0.006	0.091	0.903
51	60	0.006	0.091	0.903
51	70	0.006	0.091	0.903
51	80	0.006	0.091	0.903
52	30	0.003	0.075	0.923
52	40	0.003	0.075	0.923
53	50	0.006	0.091	0.903
53	60	0.006	0.091	0.903
53	70	0.006	0.091	0.903
53	80	0.006	0.091	0.903
54	30	0.003	0.075	0.923
54	40	0.003	0.075	0.923
55	50	0.006	0.091	0.903
55	60	0.006	0.091	0.903
55	70	0.006	0.091	0.903
55	80	0.006	0.091	0.903
56	30	0.003	0.075	0.923
56	40	0.003	0.075	0.923
57	50	0.006	0.091	0.903
57	60	0.006	0.091	0.903
57	70	0.006	0.091	0.903
57	80	0.006	0.091	0.903
58	30	0.003	0.075	0.923
58	40	0.003	0.075	0.923
59	50	0.006	0.091	0.903
59	60	0.006	0.091	0.903
59	70	0.006	0.091	0.903
59	80	0.006	0.091	0.903
60	30	0.003	0.075	0.923
60	40	0.003	0.075	0.923
61	50	0.006	0.091	0.903

61	60	0.006	0.091	0.903
61	70	0.006	0.091	0.903
61	80	0.006	0.091	0.903
62	30	0.003	0.075	0.923
62	40	0.003	0.075	0.923
63	50	0.006	0.091	0.903
63	60	0.006	0.091	0.903
63	70	0.006	0.091	0.903
63	80	0.006	0.091	0.903
64	30	0.003	0.075	0.923
64	40	0.003	0.075	0.923
65	50	0.006	0.091	0.903
65	60	0.006	0.091	0.903
65	70	0.006	0.091	0.903
65	80	0.006	0.091	0.903
66	30	0.003	0.075	0.923
66	40	0.003	0.075	0.923
67	50	0.006	0.091	0.903
67	60	0.006	0.091	0.903
67	70	0.006	0.091	0.903
67	80	0.006	0.091	0.903
68	30	0.003	0.075	0.923
68	40	0.003	0.075	0.923
69	50	0.006	0.091	0.903
69	60	0.006	0.091	0.903
69	70	0.006	0.091	0.903
69	80	0.006	0.091	0.903
70	30	0.003	0.075	0.923
70	40	0.003	0.075	0.923
71	50	0.006	0.091	0.903
71	60	0.006	0.091	0.903
71	70	0.006	0.091	0.903
71	80	0.006	0.091	0.903
72	30	0.003	0.075	0.923
72	40	0.003	0.075	0.923
73	50	0.006	0.091	0.903
73	60	0.006	0.091	0.903
73	70	0.006	0.091	0.903

73	80	0.006	0.091	0.903
74	30	0.003	0.087	0.910
74	40	0.003	0.087	0.910
75	50	0.006	0.091	0.903
75	60	0.006	0.091	0.903
75	70	0.006	0.091	0.903
75	80	0.006	0.091	0.903
76	30	0.003	0.087	0.910
76	40	0.003	0.087	0.910
77	50	0.006	0.091	0.903
77	60	0.006	0.091	0.903
77	70	0.006	0.091	0.903
77	80	0.006	0.091	0.903
78	30	0.003	0.087	0.910
78	40	0.003	0.087	0.910
79	50	0.006	0.091	0.903
79	60	0.006	0.091	0.903
79	70	0.006	0.091	0.903
79	80	0.006	0.091	0.903
80	30	0.003	0.087	0.910
80	40	0.003	0.087	0.910
81	50	0.006	0.091	0.903
81	60	0.006	0.091	0.903
81	70	0.006	0.091	0.903
81	80	0.006	0.091	0.903
82	30	0.003	0.087	0.910
82	40	0.003	0.087	0.910
83	50	0.006	0.091	0.903
83	60	0.006	0.091	0.903
83	70	0.006	0.091	0.903
83	80	0.006	0.091	0.903
84	30	0.003	0.087	0.910
84	40	0.003	0.087	0.910
85	50	0.004	0.062	0.934
85	60	0.004	0.062	0.934
85	70	0.004	0.062	0.934
85	80	0.004	0.062	0.934
86	30	0.003	0.064	0.933

86	40	0.003	0.064	0.933
87	50	0.004	0.062	0.934
87	60	0.004	0.062	0.934
87	70	0.004	0.062	0.934
87	80	0.004	0.062	0.934
88	30	0.003	0.064	0.933
88	40	0.003	0.064	0.933
89	50	0.004	0.062	0.934
89	60	0.004	0.062	0.934
89	70	0.004	0.062	0.934
89	80	0.004	0.062	0.934
90	30	0.003	0.064	0.933
90	40	0.003	0.064	0.933
91	50	0.004	0.062	0.934
91	60	0.004	0.062	0.934
91	70	0.004	0.062	0.934
91	80	0.004	0.062	0.934
92	30	0.003	0.064	0.933
92	40	0.003	0.064	0.933
93	50	0.004	0.062	0.934
93	60	0.004	0.062	0.934
93	70	0.004	0.062	0.934
93	80	0.004	0.062	0.934
94	30	0.003	0.064	0.933
94	40	0.003	0.064	0.933
95	50	0.004	0.062	0.934
95	60	0.004	0.062	0.934
95	70	0.004	0.062	0.934
95	80	0.004	0.062	0.934
96	30	0.003	0.064	0.933
96	40	0.003	0.064	0.933

Link Only Accident Rates and Change Factors

Base Year

2009

Road Type	Speed Limit (mph)	Accident Rate	Beta Factor
1	50	0.063	0.956



1	60	0.063	0.956
1	70	0.063	0.956
2	50	0.063	0.956
2	60	0.063	0.956
2	70	0.063	0.956
3	50	0.075	0.956
3	60	0.075	0.956
3	70	0.075	0.956
4	30	0.175	0.964
4	40	0.175	0.964
4	50	0.143	0.958
4	60	0.143	0.958
4	70	0.143	0.958
4	80	0.143	0.958
5	30	0.175	0.964
5	40	0.175	0.964
5	50	0.143	0.958
5	60	0.143	0.958
5	70	0.143	0.958
5	80	0.143	0.958
6	30	0.206	0.964
6	40	0.206	0.964
6	50	0.082	0.958
6	60	0.082	0.958
6	70	0.082	0.958
6	80	0.082	0.958
7	30	0.206	0.964
7	40	0.206	0.964
7	50	0.082	0.958
7	60	0.082	0.958
7	70	0.082	0.958
7	80	0.082	0.958
8	30	0.206	0.964
8	40	0.206	0.964
8	50	0.143	0.958
8	60	0.143	0.958
8	70	0.143	0.958
8	80	0.143	0.958

9	30	0.195	0.957
9	40	0.195	0.957
9	50	0.163	0.935
9	60	0.163	0.935
9	70	0.163	0.935
9	80	0.163	0.935
10	30	0.148	0.965
10	40	0.148	0.965
10	50	0.077	0.960
10	60	0.077	0.960
10	70	0.077	0.960
10	80	0.077	0.960
11	30	0.154	0.965
11	40	0.154	0.965
11	50	0.059	0.960
11	60	0.059	0.960
11	70	0.059	0.960
11	80	0.059	0.960
12	30	0.154	0.965
12	40	0.154	0.965
12	50	0.077	0.960
12	60	0.077	0.960
12	70	0.077	0.960
12	80	0.077	0.960
13	30	0.184	0.949
13	40	0.184	0.949
13	50	0.101	0.956
13	60	0.101	0.956
13	70	0.101	0.956
13	80	0.101	0.956
14	30	0.184	0.949
14	40	0.184	0.949
14	50	0.101	0.956
14	60	0.101	0.956
14	70	0.101	0.956
14	80	0.101	0.956
15	30	0.184	0.949
15	40	0.184	0.949

15	50	0.101	0.956
15	60	0.101	0.956
15	70	0.101	0.956
15	80	0.101	0.956

Link and Junction Combined Accident Rates and Change Factors

Base Year

2009

Road Type	Speed Limit (mph)	Accident Rate	Beta Factor
1	50	0.080	0.956
1	60	0.080	0.956
1	70	0.080	0.956
2	50	0.067	0.956
2	60	0.067	0.956
2	70	0.067	0.956
3	50	0.079	0.956
3	60	0.079	0.956
3	70	0.079	0.956
4	30	0.532	0.959
4	40	0.532	0.959
4	50	0.244	0.955
4	60	0.244	0.955
4	70	0.244	0.955
4	80	0.244	0.955
5	30	0.532	0.959
5	40	0.532	0.959
5	50	0.244	0.955
5	60	0.244	0.955
5	70	0.244	0.955
5	80	0.244	0.955
6	30	0.863	0.959
6	40	0.863	0.959
6	50	0.163	0.955
6	60	0.163	0.955
6	70	0.163	0.955
6	80	0.163	0.955
7	30	0.863	0.959

7	40	0.863	0.959
7	50	0.163	0.955
7	60	0.163	0.955
7	70	0.163	0.955
7	80	0.163	0.955
8	30	0.863	0.959
8	40	0.863	0.959
8	50	0.244	0.955
8	60	0.244	0.955
8	70	0.244	0.955
8	80	0.244	0.955
9	30	0.559	0.951
9	40	0.559	0.951
9	50	0.233	0.933
9	60	0.233	0.933
9	70	0.233	0.933
9	80	0.233	0.933
10	30	0.553	0.967
10	40	0.553	0.967
10	50	0.107	0.956
10	60	0.107	0.956
10	70	0.107	0.956
10	80	0.107	0.956
11	30	0.599	0.967
11	40	0.599	0.967
11	50	0.072	0.956
11	60	0.072	0.956
11	70	0.072	0.956
11	80	0.072	0.956
12	30	0.599	0.967
12	40	0.599	0.967
12	50	0.107	0.956
12	60	0.107	0.956
12	70	0.107	0.956
12	80	0.107	0.956
13	30	0.620	0.951
13	40	0.620	0.951
13	50	0.123	0.946

13	60	0.123	0.946
13	70	0.123	0.946
13	80	0.123	0.946
14	30	0.620	0.951
14	40	0.620	0.951
14	50	0.123	0.946
14	60	0.123	0.946
14	70	0.123	0.946
14	80	0.123	0.946
15	30	0.620	0.951
15	40	0.620	0.951
15	50	0.123	0.946
15	60	0.123	0.946
15	70	0.123	0.946
15	80	0.123	0.946

Link Only and Link and Junction Combined Accident Beta Factor Changes over Time

Range of Years Change to Beta Factor

2004-2019	1.000
2020-2029	0.500
2030-2039	0.250
2040-2153	0.000

Link Only Casualty Rates

Base Year

2009

Road Type Speed Limit Casualties per P.I.A.

	(mph)	Fatal	Serious	Slight
1	50	0.021	0.129	1.464
1	60	0.021	0.129	1.464
1	70	0.021	0.129	1.464
2	50	0.021	0.129	1.464
2	60	0.021	0.129	1.464
2	70	0.021	0.129	1.464
3	50	0.021	0.129	1.464
3	60	0.021	0.129	1.464
3	70	0.021	0.129	1.464
4	30	0.015	0.162	1.154

4	40	0.015	0.162	1.154
4	50	0.052	0.274	1.251
4	60	0.052	0.274	1.251
4	70	0.052	0.274	1.251
4	80	0.052	0.274	1.251
5	30	0.015	0.162	1.154
5	40	0.015	0.162	1.154
5	50	0.052	0.274	1.251
5	60	0.052	0.274	1.251
5	70	0.052	0.274	1.251
5	80	0.052	0.274	1.251
6	30	0.015	0.162	1.154
6	40	0.015	0.162	1.154
6	50	0.052	0.274	1.251
6	60	0.052	0.274	1.251
6	70	0.052	0.274	1.251
6	80	0.052	0.274	1.251
7	30	0.015	0.162	1.154
7	40	0.015	0.162	1.154
7	50	0.052	0.274	1.251
7	60	0.052	0.274	1.251
7	70	0.052	0.274	1.251
7	80	0.052	0.274	1.251
8	30	0.015	0.162	1.154
8	40	0.015	0.162	1.154
8	50	0.052	0.274	1.251
8	60	0.052	0.274	1.251
8	70	0.052	0.274	1.251
8	80	0.052	0.274	1.251
9	30	0.010	0.156	1.071
9	40	0.010	0.156	1.071
9	50	0.028	0.230	1.178
9	60	0.028	0.230	1.178
9	70	0.028	0.230	1.178
9	80	0.028	0.230	1.178
10	30	0.018	0.148	1.183
10	40	0.018	0.148	1.183
10	50	0.031	0.161	1.328

10	60	0.031	0.161	1.328
10	70	0.031	0.161	1.328
10	80	0.031	0.161	1.328
11	30	0.018	0.148	1.183
11	40	0.018	0.148	1.183
11	50	0.031	0.161	1.328
11	60	0.031	0.161	1.328
11	70	0.031	0.161	1.328
11	80	0.031	0.161	1.328
12	30	0.018	0.148	1.183
12	40	0.018	0.148	1.183
12	50	0.031	0.161	1.328
12	60	0.031	0.161	1.328
12	70	0.031	0.161	1.328
12	80	0.031	0.161	1.328
13	30	0.018	0.148	1.183
13	40	0.018	0.148	1.183
13	50	0.031	0.161	1.328
13	60	0.031	0.161	1.328
13	70	0.031	0.161	1.328
13	80	0.031	0.161	1.328
14	30	0.018	0.148	1.183
14	40	0.018	0.148	1.183
14	50	0.031	0.161	1.328
14	60	0.031	0.161	1.328
14	70	0.031	0.161	1.328
14	80	0.031	0.161	1.328
15	30	0.018	0.148	1.183
15	40	0.018	0.148	1.183
15	50	0.031	0.161	1.328
15	60	0.031	0.161	1.328
15	70	0.031	0.161	1.328
15	80	0.031	0.161	1.328

Link and Junction Combined Casualty Rates

Base Year

2009

Road Type    Speed Limit    Casualties per P.I.A.

	(mph)	Fatal	Serious	Slight
1	50	0.020	0.123	1.455
1	60	0.020	0.123	1.455
1	70	0.020	0.123	1.455
2	50	0.020	0.123	1.455
2	60	0.020	0.123	1.455
2	70	0.020	0.123	1.455
3	50	0.020	0.123	1.455
3	60	0.020	0.123	1.455
3	70	0.020	0.123	1.455
4	30	0.009	0.132	1.176
4	40	0.009	0.132	1.176
4	50	0.038	0.238	1.300
4	60	0.038	0.238	1.300
4	70	0.038	0.238	1.300
4	80	0.038	0.238	1.300
5	30	0.009	0.132	1.176
5	40	0.009	0.132	1.176
5	50	0.038	0.238	1.300
5	60	0.038	0.238	1.300
5	70	0.038	0.238	1.300
5	80	0.038	0.238	1.300
6	30	0.009	0.132	1.176
6	40	0.009	0.132	1.176
6	50	0.038	0.238	1.300
6	60	0.038	0.238	1.300
6	70	0.038	0.238	1.300
6	80	0.038	0.238	1.300
7	30	0.009	0.132	1.176
7	40	0.009	0.132	1.176
7	50	0.038	0.238	1.300
7	60	0.038	0.238	1.300
7	70	0.038	0.238	1.300
7	80	0.038	0.238	1.300
8	30	0.009	0.132	1.176
8	40	0.009	0.132	1.176
8	50	0.038	0.238	1.300
8	60	0.038	0.238	1.300



8	70	0.038	0.238	1.300
8	80	0.038	0.238	1.300
9	30	0.007	0.134	1.132
9	40	0.007	0.134	1.132
9	50	0.026	0.222	1.218
9	60	0.026	0.222	1.218
9	70	0.026	0.222	1.218
9	80	0.026	0.222	1.218
10	30	0.009	0.112	1.238
10	40	0.009	0.112	1.238
10	50	0.025	0.151	1.297
10	60	0.025	0.151	1.297
10	70	0.025	0.151	1.297
10	80	0.025	0.151	1.297
11	30	0.009	0.112	1.238
11	40	0.009	0.112	1.238
11	50	0.025	0.151	1.297
11	60	0.025	0.151	1.297
11	70	0.025	0.151	1.297
11	80	0.025	0.151	1.297
12	30	0.009	0.112	1.238
12	40	0.009	0.112	1.238
12	50	0.025	0.151	1.297
12	60	0.025	0.151	1.297
12	70	0.025	0.151	1.297
12	80	0.025	0.151	1.297
13	30	0.009	0.112	1.238
13	40	0.009	0.112	1.238
13	50	0.025	0.151	1.297
13	60	0.025	0.151	1.297
13	70	0.025	0.151	1.297
13	80	0.025	0.151	1.297
14	30	0.009	0.112	1.238
14	40	0.009	0.112	1.238
14	50	0.025	0.151	1.297
14	60	0.025	0.151	1.297
14	70	0.025	0.151	1.297
14	80	0.025	0.151	1.297

15	30	0.009	0.112	1.238
15	40	0.009	0.112	1.238
15	50	0.025	0.151	1.297
15	60	0.025	0.151	1.297
15	70	0.025	0.151	1.297
15	80	0.025	0.151	1.297

Link Only Casualty Change Factors

Base Year

2009

Road Type	Speed Limit (mph)	Beta Factor		
		Fatal	Serious	Slight
1	50	0.978	0.979	1.002
1	60	0.978	0.979	1.002
1	70	0.978	0.979	1.002
2	50	0.978	0.979	1.002
2	60	0.978	0.979	1.002
2	70	0.978	0.979	1.002
3	50	0.978	0.979	1.002
3	60	0.978	0.979	1.002
3	70	0.978	0.979	1.002
4	30	0.971	0.995	1.001
4	40	0.971	0.995	1.001
4	50	0.979	0.983	1.002
4	60	0.979	0.983	1.002
4	70	0.979	0.983	1.002
4	80	0.979	0.983	1.002
5	30	0.971	0.995	1.001
5	40	0.971	0.995	1.001
5	50	0.979	0.983	1.002
5	60	0.979	0.983	1.002
5	70	0.979	0.983	1.002
5	80	0.979	0.983	1.002
6	30	0.971	0.995	1.001
6	40	0.971	0.995	1.001
6	50	0.979	0.983	1.002
6	60	0.979	0.983	1.002
6	70	0.979	0.983	1.002

6	80	0.979	0.983	1.002
7	30	0.971	0.995	1.001
7	40	0.971	0.995	1.001
7	50	0.979	0.983	1.002
7	60	0.979	0.983	1.002
7	70	0.979	0.983	1.002
7	80	0.979	0.983	1.002
8	30	0.971	0.995	1.001
8	40	0.971	0.995	1.001
8	50	0.979	0.983	1.002
8	60	0.979	0.983	1.002
8	70	0.979	0.983	1.002
8	80	0.979	0.983	1.002
9	30	0.985	0.997	1.001
9	40	0.985	0.997	1.001
9	50	0.987	0.989	0.998
9	60	0.987	0.989	0.998
9	70	0.987	0.989	0.998
9	80	0.987	0.989	0.998
10	30	0.998	0.990	1.002
10	40	0.998	0.990	1.002
10	50	0.984	0.985	0.998
10	60	0.984	0.985	0.998
10	70	0.984	0.985	0.998
10	80	0.984	0.985	0.998
11	30	0.998	0.990	1.002
11	40	0.998	0.990	1.002
11	50	0.984	0.985	0.998
11	60	0.984	0.985	0.998
11	70	0.984	0.985	0.998
11	80	0.984	0.985	0.998
12	30	0.998	0.990	1.002
12	40	0.998	0.990	1.002
12	50	0.984	0.985	0.998
12	60	0.984	0.985	0.998
12	70	0.984	0.985	0.998
12	80	0.984	0.985	0.998
13	30	0.998	0.990	1.002

13	40	0.998	0.990	1.002
13	50	0.984	0.985	0.998
13	60	0.984	0.985	0.998
13	70	0.984	0.985	0.998
13	80	0.984	0.985	0.998
14	30	0.998	0.990	1.002
14	40	0.998	0.990	1.002
14	50	0.984	0.985	0.998
14	60	0.984	0.985	0.998
14	70	0.984	0.985	0.998
14	80	0.984	0.985	0.998
15	30	0.998	0.990	1.002
15	40	0.998	0.990	1.002
15	50	0.984	0.985	0.998
15	60	0.984	0.985	0.998
15	70	0.984	0.985	0.998
15	80	0.984	0.985	0.998

Link and Junction Combined Casualty Change Factors

Base Year

2009

Road Type	Speed Limit (mph)	Beta Factor		
		Fatal	Serious	Slight
1	50	0.978	0.979	1.002
1	60	0.978	0.979	1.002
1	70	0.978	0.979	1.002
2	50	0.978	0.979	1.002
2	60	0.978	0.979	1.002
2	70	0.978	0.979	1.002
3	50	0.978	0.979	1.002
3	60	0.978	0.979	1.002
3	70	0.978	0.979	1.002
4	30	0.971	0.995	1.001
4	40	0.971	0.995	1.001
4	50	0.979	0.983	1.002
4	60	0.979	0.983	1.002
4	70	0.979	0.983	1.002
4	80	0.979	0.983	1.002

5	30	0.971	0.995	1.001
5	40	0.971	0.995	1.001
5	50	0.979	0.983	1.002
5	60	0.979	0.983	1.002
5	70	0.979	0.983	1.002
5	80	0.979	0.983	1.002
6	30	0.971	0.995	1.001
6	40	0.971	0.995	1.001
6	50	0.979	0.983	1.002
6	60	0.979	0.983	1.002
6	70	0.979	0.983	1.002
6	80	0.979	0.983	1.002
7	30	0.971	0.995	1.001
7	40	0.971	0.995	1.001
7	50	0.979	0.983	1.002
7	60	0.979	0.983	1.002
7	70	0.979	0.983	1.002
7	80	0.979	0.983	1.002
8	30	0.971	0.995	1.001
8	40	0.971	0.995	1.001
8	50	0.979	0.983	1.002
8	60	0.979	0.983	1.002
8	70	0.979	0.983	1.002
8	80	0.979	0.983	1.002
9	30	0.985	0.997	1.001
9	40	0.985	0.997	1.001
9	50	0.987	0.989	0.998
9	60	0.987	0.989	0.998
9	70	0.987	0.989	0.998
9	80	0.987	0.989	0.998
10	30	0.998	0.990	1.002
10	40	0.998	0.990	1.002
10	50	0.984	0.985	0.998
10	60	0.984	0.985	0.998
10	70	0.984	0.985	0.998
10	80	0.984	0.985	0.998
11	30	0.998	0.990	1.002
11	40	0.998	0.990	1.002

11	50	0.984	0.985	0.998
11	60	0.984	0.985	0.998
11	70	0.984	0.985	0.998
11	80	0.984	0.985	0.998
12	30	0.998	0.990	1.002
12	40	0.998	0.990	1.002
12	50	0.984	0.985	0.998
12	60	0.984	0.985	0.998
12	70	0.984	0.985	0.998
12	80	0.984	0.985	0.998
13	30	0.998	0.990	1.002
13	40	0.998	0.990	1.002
13	50	0.984	0.985	0.998
13	60	0.984	0.985	0.998
13	70	0.984	0.985	0.998
13	80	0.984	0.985	0.998
14	30	0.998	0.990	1.002
14	40	0.998	0.990	1.002
14	50	0.984	0.985	0.998
14	60	0.984	0.985	0.998
14	70	0.984	0.985	0.998
14	80	0.984	0.985	0.998
15	30	0.998	0.990	1.002
15	40	0.998	0.990	1.002
15	50	0.984	0.985	0.998
15	60	0.984	0.985	0.998
15	70	0.984	0.985	0.998
15	80	0.984	0.985	0.998

Link Only and Link and Junction Combined Casualty Beta Factor Changes over Time

Range of Years Change to Beta Factor

1995-2019	1.000
2020-2144	0.000

Junction Only Accident Parameters

Base Year

1997

Junction Speed Limit Coefficient Power Arms Highest Formula

Type	(mph)	'a'	'b'	Link (S/D)	Type
1	50	0.195	0.460	3 S	C
1	60	0.195	0.460	3 S	C
1	70	0.195	0.460	3 S	C
1	80	0.195	0.460	3 S	C
2	20	0.195	0.460	3 S	C
2	30	0.195	0.460	3 S	C
2	40	0.195	0.460	3 S	C
3	50	0.195	0.460	3 D	C
3	60	0.195	0.460	3 D	C
3	70	0.195	0.460	3 D	C
3	80	0.195	0.460	3 D	C
4	20	0.195	0.460	3 D	C
4	30	0.195	0.460	3 D	C
4	40	0.195	0.460	3 D	C
5	50	0.361	0.440	4 S	I
5	60	0.361	0.440	4 S	I
5	70	0.361	0.440	4 S	I
5	80	0.361	0.440	4 S	I
6	20	0.361	0.440	4 S	I
6	30	0.361	0.440	4 S	I
6	40	0.361	0.440	4 S	I
7	50	0.240	0.710	4 D	C
7	60	0.240	0.710	4 D	C
7	70	0.240	0.710	4 D	C
7	80	0.240	0.710	4 D	C
8	20	0.240	0.710	4 D	C
8	30	0.240	0.710	4 D	C
8	40	0.240	0.710	4 D	C
9	50	0.361	0.440	5 S	I
9	60	0.361	0.440	5 S	I
9	70	0.361	0.440	5 S	I
9	80	0.361	0.440	5 S	I
10	20	0.361	0.440	5 S	I
10	30	0.361	0.440	5 S	I
10	40	0.361	0.440	5 S	I
11	50	0.361	0.440	5 D	I
11	60	0.361	0.440	5 D	I

11	70	0.361	0.440	5	D	I
11	80	0.361	0.440	5	D	I
12	20	0.361	0.440	5	D	I
12	30	0.361	0.440	5	D	I
12	40	0.361	0.440	5	D	I
13	50	0.195	0.460	3	S	C
13	60	0.195	0.460	3	S	C
13	70	0.195	0.460	3	S	C
13	80	0.195	0.460	3	S	C
14	20	0.195	0.460	3	S	C
14	30	0.195	0.460	3	S	C
14	40	0.195	0.460	3	S	C
15	50	0.195	0.460	3	D	C
15	60	0.195	0.460	3	D	C
15	70	0.195	0.460	3	D	C
15	80	0.195	0.460	3	D	C
16	20	0.195	0.460	3	D	C
16	30	0.195	0.460	3	D	C
16	40	0.195	0.460	3	D	C
17	50	0.361	0.440	4	S	I
17	60	0.361	0.440	4	S	I
17	70	0.361	0.440	4	S	I
17	80	0.361	0.440	4	S	I
18	20	0.361	0.440	4	S	I
18	30	0.361	0.440	4	S	I
18	40	0.361	0.440	4	S	I
19	50	0.240	0.710	4	D	C
19	60	0.240	0.710	4	D	C
19	70	0.240	0.710	4	D	C
19	80	0.240	0.710	4	D	C
20	20	0.240	0.710	4	D	C
20	30	0.240	0.710	4	D	C
20	40	0.240	0.710	4	D	C
21	50	0.361	0.440	5	S	I
21	60	0.361	0.440	5	S	I
21	70	0.361	0.440	5	S	I
21	80	0.361	0.440	5	S	I
22	20	0.361	0.440	5	S	I



22	30	0.361	0.440	5	S	I
22	40	0.361	0.440	5	S	I
23	50	0.361	0.440	5	D	I
23	60	0.361	0.440	5	D	I
23	70	0.361	0.440	5	D	I
23	80	0.361	0.440	5	D	I
24	20	0.361	0.440	5	D	I
24	30	0.361	0.440	5	D	I
24	40	0.361	0.440	5	D	I
25	50	0.195	0.460	3	S	C
25	60	0.195	0.460	3	S	C
25	70	0.195	0.460	3	S	C
25	80	0.195	0.460	3	S	C
26	20	0.195	0.460	3	S	C
26	30	0.195	0.460	3	S	C
26	40	0.195	0.460	3	S	C
27	50	0.195	0.460	3	D	C
27	60	0.195	0.460	3	D	C
27	70	0.195	0.460	3	D	C
27	80	0.195	0.460	3	D	C
28	20	0.195	0.460	3	D	C
28	30	0.195	0.460	3	D	C
28	40	0.195	0.460	3	D	C
29	50	0.361	0.440	4	S	I
29	60	0.361	0.440	4	S	I
29	70	0.361	0.440	4	S	I
29	80	0.361	0.440	4	S	I
30	20	0.361	0.440	4	S	I
30	30	0.361	0.440	4	S	I
30	40	0.361	0.440	4	S	I
31	50	0.240	0.710	4	D	C
31	60	0.240	0.710	4	D	C
31	70	0.240	0.710	4	D	C
31	80	0.240	0.710	4	D	C
32	20	0.240	0.710	4	D	C
32	30	0.240	0.710	4	D	C
32	40	0.240	0.710	4	D	C
33	50	0.361	0.440	5	S	I

33	60	0.361	0.440	5	S	I
33	70	0.361	0.440	5	S	I
33	80	0.361	0.440	5	S	I
34	20	0.361	0.440	5	S	I
34	30	0.361	0.440	5	S	I
34	40	0.361	0.440	5	S	I
35	50	0.361	0.440	5	D	I
35	60	0.361	0.440	5	D	I
35	70	0.361	0.440	5	D	I
35	80	0.361	0.440	5	D	I
36	20	0.361	0.440	5	D	I
36	30	0.361	0.440	5	D	I
36	40	0.361	0.440	5	D	I
37	50	0.223	0.610	3	S	I
37	60	0.223	0.610	3	S	I
37	70	0.223	0.610	3	S	I
37	80	0.223	0.610	3	S	I
38	20	0.223	0.610	3	S	I
38	30	0.223	0.610	3	S	I
38	40	0.223	0.610	3	S	I
39	50	0.494	0.420	3	D	C
39	60	0.494	0.420	3	D	C
39	70	0.494	0.420	3	D	C
39	80	0.494	0.420	3	D	C
40	20	0.291	0.510	3	D	C
40	30	0.291	0.510	3	D	C
40	40	0.291	0.510	3	D	C
41	50	1.378	0.200	4	S	C
41	60	1.378	0.200	4	S	C
41	70	1.378	0.200	4	S	C
41	80	1.378	0.200	4	S	C
42	20	1.378	0.200	4	S	C
42	30	1.378	0.200	4	S	C
42	40	1.378	0.200	4	S	C
43	50	0.494	0.420	4	D	C
43	60	0.494	0.420	4	D	C
43	70	0.494	0.420	4	D	C
43	80	0.494	0.420	4	D	C

44	20	0.291	0.510	4	D	C
44	30	0.291	0.510	4	D	C
44	40	0.291	0.510	4	D	C
45	50	0.254	0.620	5	S	I
45	60	0.254	0.620	5	S	I
45	70	0.254	0.620	5	S	I
45	80	0.254	0.620	5	S	I
46	20	0.254	0.620	5	S	I
46	30	0.254	0.620	5	S	I
46	40	0.254	0.620	5	S	I
47	50	0.238	0.850	5	D	I
47	60	0.238	0.850	5	D	I
47	70	0.238	0.850	5	D	I
47	80	0.238	0.850	5	D	I
48	20	0.160	0.970	5	D	I
48	30	0.160	0.970	5	D	I
48	40	0.160	0.970	5	D	I
49	50	0.033	0.760	3	S	C
49	60	0.033	0.760	3	S	C
49	70	0.033	0.760	3	S	C
49	80	0.033	0.760	3	S	C
50	20	0.033	0.760	3	S	C
50	30	0.033	0.760	3	S	C
50	40	0.033	0.760	3	S	C
51	50	0.033	0.760	3	D	C
51	60	0.033	0.760	3	D	C
51	70	0.033	0.760	3	D	C
51	80	0.033	0.760	3	D	C
52	20	0.033	0.760	3	D	C
52	30	0.033	0.760	3	D	C
52	40	0.033	0.760	3	D	C
53	50	0.024	0.890	4	S	C
53	60	0.024	0.890	4	S	C
53	70	0.024	0.890	4	S	C
53	80	0.024	0.890	4	S	C
54	20	0.048	0.740	4	S	C
54	30	0.048	0.740	4	S	C
54	40	0.048	0.740	4	S	C

55	50	0.063	0.690	4	D	C
55	60	0.063	0.690	4	D	C
55	70	0.063	0.690	4	D	C
55	80	0.063	0.690	4	D	C
56	20	0.022	0.850	4	D	C
56	30	0.022	0.850	4	D	C
56	40	0.022	0.850	4	D	C
57	50	0.007	1.770	5	S	I
57	60	0.007	1.770	5	S	I
57	70	0.007	1.770	5	S	I
57	80	0.007	1.770	5	S	I
58	20	0.014	1.530	5	S	I
58	30	0.014	1.530	5	S	I
58	40	0.014	1.530	5	S	I
59	50	0.019	1.420	5	D	I
59	60	0.019	1.420	5	D	I
59	70	0.019	1.420	5	D	I
59	80	0.019	1.420	5	D	I
60	20	0.006	1.730	5	D	I
60	30	0.006	1.730	5	D	I
60	40	0.006	1.730	5	D	I
61	50	0.033	0.760	3	S	C
61	60	0.033	0.760	3	S	C
61	70	0.033	0.760	3	S	C
61	80	0.033	0.760	3	S	C
62	20	0.033	0.760	3	S	C
62	30	0.033	0.760	3	S	C
62	40	0.033	0.760	3	S	C
63	50	0.033	0.760	3	D	C
63	60	0.033	0.760	3	D	C
63	70	0.033	0.760	3	D	C
63	80	0.033	0.760	3	D	C
64	20	0.033	0.760	3	D	C
64	30	0.033	0.760	3	D	C
64	40	0.033	0.760	3	D	C
65	50	0.101	0.660	4	S	C
65	60	0.101	0.660	4	S	C
65	70	0.101	0.660	4	S	C

65	80	0.101	0.660	4	S	C
66	20	0.263	0.540	4	S	C
66	30	0.263	0.540	4	S	C
66	40	0.263	0.540	4	S	C
67	50	0.101	0.660	4	D	C
67	60	0.101	0.660	4	D	C
67	70	0.101	0.660	4	D	C
67	80	0.101	0.660	4	D	C
68	20	0.263	0.540	4	D	C
68	30	0.263	0.540	4	D	C
68	40	0.263	0.540	4	D	C
69	50	0.044	1.280	5	S	I
69	60	0.044	1.280	5	S	I
69	70	0.044	1.280	5	S	I
69	80	0.044	1.280	5	S	I
70	20	0.095	1.140	5	S	I
70	30	0.095	1.140	5	S	I
70	40	0.095	1.140	5	S	I
71	50	0.044	1.280	5	D	I
71	60	0.044	1.280	5	D	I
71	70	0.044	1.280	5	D	I
71	80	0.044	1.280	5	D	I
72	20	0.095	1.140	5	D	I
72	30	0.095	1.140	5	D	I
72	40	0.095	1.140	5	D	I
73	50	0.012	1.040	3	S	C
73	60	0.012	1.040	3	S	C
73	70	0.012	1.040	3	S	C
73	80	0.012	1.040	3	S	C
74	20	0.012	1.040	3	S	C
74	30	0.012	1.040	3	S	C
74	40	0.012	1.040	3	S	C
75	50	0.012	1.040	3	D	C
75	60	0.012	1.040	3	D	C
75	70	0.012	1.040	3	D	C
75	80	0.012	1.040	3	D	C
76	20	0.012	1.040	3	D	C
76	30	0.012	1.040	3	D	C

76	40	0.012	1.040	3	D	C
77	50	0.070	0.640	4	S	C
77	60	0.070	0.640	4	S	C
77	70	0.070	0.640	4	S	C
77	80	0.070	0.640	4	S	C
78	20	0.070	0.640	4	S	C
78	30	0.070	0.640	4	S	C
78	40	0.070	0.640	4	S	C
79	50	0.070	0.640	4	D	C
79	60	0.070	0.640	4	D	C
79	70	0.070	0.640	4	D	C
79	80	0.070	0.640	4	D	C
80	20	0.070	0.640	4	D	C
80	30	0.070	0.640	4	D	C
80	40	0.070	0.640	4	D	C
81	50	0.013	1.470	5	S	I
81	60	0.013	1.470	5	S	I
81	70	0.013	1.470	5	S	I
81	80	0.013	1.470	5	S	I
82	20	0.013	1.470	5	S	I
82	30	0.013	1.470	5	S	I
82	40	0.013	1.470	5	S	I
83	50	0.013	1.470	5	D	I
83	60	0.013	1.470	5	D	I
83	70	0.013	1.470	5	D	I
83	80	0.013	1.470	5	D	I
84	20	0.013	1.470	5	D	I
84	30	0.013	1.470	5	D	I
84	40	0.013	1.470	5	D	I
85	50	0.033	0.760	3	S	C
85	60	0.033	0.760	3	S	C
85	70	0.033	0.760	3	S	C
85	80	0.033	0.760	3	S	C
86	20	0.033	0.760	3	S	C
86	30	0.033	0.760	3	S	C
86	40	0.033	0.760	3	S	C
87	50	0.033	0.760	3	D	C
87	60	0.033	0.760	3	D	C

87	70	0.033	0.760	3	D	C
87	80	0.033	0.760	3	D	C
88	20	0.033	0.760	3	D	C
88	30	0.033	0.760	3	D	C
88	40	0.033	0.760	3	D	C
89	50	0.024	0.890	4	S	C
89	60	0.024	0.890	4	S	C
89	70	0.024	0.890	4	S	C
89	80	0.024	0.890	4	S	C
90	20	0.048	0.740	4	S	C
90	30	0.048	0.740	4	S	C
90	40	0.048	0.740	4	S	C
91	50	0.063	0.690	4	D	C
91	60	0.063	0.690	4	D	C
91	70	0.063	0.690	4	D	C
91	80	0.063	0.690	4	D	C
92	20	0.022	0.850	4	D	C
92	30	0.022	0.850	4	D	C
92	40	0.022	0.850	4	D	C
93	50	0.007	1.770	5	S	I
93	60	0.007	1.770	5	S	I
93	70	0.007	1.770	5	S	I
93	80	0.007	1.770	5	S	I
94	20	0.014	1.530	5	S	I
94	30	0.014	1.530	5	S	I
94	40	0.014	1.530	5	S	I
95	50	0.019	1.420	5	D	I
95	60	0.019	1.420	5	D	I
95	70	0.019	1.420	5	D	I
95	80	0.019	1.420	5	D	I
96	20	0.006	1.730	5	D	I
96	30	0.006	1.730	5	D	I
96	40	0.006	1.730	5	D	I

Junction Only Accident Change Factors

Base Year

2000

Classification Speed Limit Beta

	(mph)	Factor
Major	20	0.991
Major	30	0.991
Major	40	0.991
Major	50	0.984
Major	60	0.984
Major	70	0.984
Major	80	0.984
Minor	20	0.976
Minor	30	0.976
Minor	40	0.976
Minor	50	0.996
Minor	60	0.996
Minor	70	0.996
Minor	80	0.996

Junction Only Accident Beta Factor Changes over Time

Range of Years Change to Beta Factor

1995-2010	1.000
2011-2020	0.500
2021-2030	0.250
2031-2144	0.000

Junction Only Casualty Rates

Base Year

2000

Road Type Casualties per P.I.A.

	Fatal	Serious	Slight
1	0.0265	0.2413	1.355
2	0.0075	0.1350	1.144
3	0.0265	0.2413	1.355
4	0.0075	0.1350	1.144
5	0.0295	0.2793	1.459
6	0.0062	0.1292	1.244
7	0.0295	0.2793	1.459
8	0.0062	0.1292	1.244
9	0.0295	0.2793	1.459
10	0.0062	0.1292	1.244



11	0.0295	0.2793	1.459
12	0.0062	0.1292	1.244
13	0.0265	0.2413	1.355
14	0.0075	0.1350	1.144
15	0.0265	0.2413	1.355
16	0.0075	0.1350	1.144
17	0.0295	0.2793	1.459
18	0.0062	0.1292	1.244
19	0.0295	0.2793	1.459
20	0.0062	0.1292	1.244
21	0.0295	0.2793	1.459
22	0.0062	0.1292	1.244
23	0.0295	0.2793	1.459
24	0.0062	0.1292	1.244
25	0.0265	0.2413	1.355
26	0.0075	0.1350	1.144
27	0.0265	0.2413	1.355
28	0.0075	0.1350	1.144
29	0.0295	0.2793	1.459
30	0.0062	0.1292	1.244
31	0.0295	0.2793	1.459
32	0.0062	0.1292	1.244
33	0.0295	0.2793	1.459
34	0.0062	0.1292	1.244
35	0.0295	0.2793	1.459
36	0.0062	0.1292	1.244
37	0.0092	0.1631	1.444
38	0.0064	0.1157	1.214
39	0.0092	0.1631	1.444
40	0.0064	0.1157	1.214
41	0.0095	0.1423	1.467
42	0.0061	0.1177	1.253
43	0.0095	0.1423	1.467
44	0.0061	0.1177	1.253
45	0.0095	0.1423	1.467
46	0.0061	0.1177	1.253
47	0.0095	0.1423	1.467
48	0.0061	0.1177	1.253

49	0.0060	0.1019	1.214
50	0.0027	0.0806	1.163
51	0.0060	0.1019	1.214
52	0.0027	0.0806	1.163
53	0.0060	0.1019	1.214
54	0.0027	0.0806	1.163
55	0.0060	0.1019	1.214
56	0.0027	0.0806	1.163
57	0.0060	0.1019	1.214
58	0.0027	0.0806	1.163
59	0.0060	0.1019	1.214
60	0.0027	0.0806	1.163
61	0.0060	0.1019	1.214
62	0.0027	0.0806	1.163
63	0.0060	0.1019	1.214
64	0.0027	0.0806	1.163
65	0.0060	0.1019	1.214
66	0.0027	0.0806	1.163
67	0.0060	0.1019	1.214
68	0.0027	0.0806	1.163
69	0.0060	0.1019	1.214
70	0.0027	0.0806	1.163
71	0.0060	0.1019	1.214
72	0.0027	0.0806	1.163
73	0.0060	0.1019	1.214
74	0.0028	0.0965	1.182
75	0.0060	0.1019	1.214
76	0.0028	0.0965	1.182
77	0.0060	0.1019	1.214
78	0.0028	0.0965	1.182
79	0.0060	0.1019	1.214
80	0.0028	0.0965	1.182
81	0.0060	0.1019	1.214
82	0.0028	0.0965	1.182
83	0.0060	0.1019	1.214
84	0.0028	0.0965	1.182
85	0.0039	0.0703	1.258
86	0.0031	0.0705	1.221

87	0.0039	0.0703	1.258
88	0.0031	0.0705	1.221
89	0.0039	0.0703	1.258
90	0.0031	0.0705	1.221
91	0.0039	0.0703	1.258
92	0.0031	0.0705	1.221
93	0.0039	0.0703	1.258
94	0.0031	0.0705	1.221
95	0.0039	0.0703	1.258
96	0.0031	0.0705	1.221

Junction Only Casualty Change Factors

Base Year

2000

Classification Speed Limit Beta Factor

	(mph)	Fatal	Serious	Slight
Major	20	0.949	0.962	1.010
Major	30	0.949	0.962	1.010
Major	40	0.949	0.962	1.010
Major	50	0.961	0.959	1.011
Major	60	0.961	0.959	1.011
Major	70	0.961	0.959	1.011
Major	80	0.961	0.959	1.011
Minor	20	0.968	0.958	1.006
Minor	30	0.968	0.958	1.006
Minor	40	0.968	0.958	1.006
Minor	50	0.976	0.972	1.011
Minor	60	0.976	0.972	1.011
Minor	70	0.976	0.972	1.011
Minor	80	0.976	0.972	1.011

Junction Only Casualty Beta Factor Changes over Time

Range of Years Change to Beta Factor

1995-2010	1.000
2011-2144	0.000

# Appendix GG – Noise TAG Workbook

## Environment Noise WebTAG Commentary

The net present value of the change in traffic noise calculated by the TAG workbook is £285,879 (in 2010 prices and values) and represents a net benefit.

A total of 1838 residential buildings within the study area were assessed in the DMRB detailed noise assessment.

Two residential receptors (0.01%) both located near the Lowdham junction experience a 3dB band level increase in daytime traffic noise ( $L_{Aeq,16hr}$ ) in the opening year (2023). A total of 3 receptors (0.016%) located near the Ollerton, Mickledale, and KirkHill junctions experience a 3dB band level increase in the forecast year (2037). A total of 45 residential households (2.4%) experience a 3dB band level decrease in daytime noise ( $L_{Aeq,16hr}$ ) in the opening year (2023), increasing to 85 residential households (4.6%) in the forecast year (2037).

One residential receptor (0.005%) located near to the Kirk Hill junction, experiences a 3dB band level increase in night-time traffic noise ( $L_{night}$ ), in the forecast year (2037). 20 receptors (1.1%) experience a 3dB band level decrease in night-time noise ( $L_{night}$ ) in the opening year (2023), increasing to 40 residential households (2.2%) in the forecast year (2037).

The Table (...) summarises the number of residential households which change 3dB band with the proposed scheme in place, in both the opening and forecast years. The assessment concludes that a significant number of noise-sensitive receptors remain in the same dB band with the introduction of the proposed scheme with 1750 residential households (95.2%) with no change in noise band for daytime noise ( $L_{Aeq,16hr}$ ), and 1796 residential households (97.7%) with no change in noise band for the night period ( $L_{night}$ ).

Table 1 : Noise Impacts Summary

Change in 3dB noise level band between do-minimum and do-something scenarios		Number of residential households	
		$L_{Aeq,16hr}$	$L_{night}$
2023	Increase of a 3dB band	2	0
	Decrease of a 3dB band	45	20
	No Change	1791	1818
2037	Increase of a 3dB band	3	1
	Decrease of a 3dB band	85	40
	No Change	1750	1796

The assessment concluded that out of the 1838, 1750 properties would not be impacted by the proposed scheme during the day in the forecast year and 1796 would not be impacted during the night in the forecast year.

# Noise Workbook - Worksheet 1

Proposal Name: A614/A6097 MRN Corridor

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road, Rail or Aviation):

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Net present value of change in noise (£):

\*positive value reflects a net benefit (i.e. a reduction in noise)

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Net present value of impact on sleep disturbance (£):	<input type="text" value="£126,123"/>
Net present value of impact on amenity (£):	<input type="text" value="£110,512"/>
Net present value of impact on AMI (£):	<input type="text" value="£20,951"/>
Net present value of impact on stroke (£):	<input type="text" value="£11,272"/>
Net present value of impact on dementia (£):	<input type="text" value="£17,021"/>

## Quantitative results

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Households experiencing increased daytime noise in forecast year:	<input type="text" value="3"/>
Households experiencing reduced daytime noise in forecast year:	<input type="text" value="85"/>
Households experiencing increased night time noise in forecast year:	<input type="text" value="1"/>
Households experiencing reduced night time noise in forecast year:	<input type="text" value="40"/>

## Qualitative Comments:

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## Data Sources:

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# Appendix HH – Air Quality TAG Workbook

**All Scheme**



## Air Quality Valuation Workbook - Worksheet 3

Scheme Name: A614/A6097 Corridor - All Schemes

Present Value Base Year: 2010

Current Year: 2020

Proposal Opening year: 2023

Project (Road/Rail or Road and Rail): Road Transport (RT)

### Overall Assessment Score:

#### Damage Costs Approach (Emissions)

Present value of change in NOx emissions (£): £0

Present value of change in PM2.5 emissions (£): £0

OR

Present value of change in PM10 emissions (£): £0

#### Impact Pathways Approach (Concentrations)

Present value of change in NO2 concentrations (£): £12,054

Of which:

Concentration costs: £3,119

Other impacts: £8,935

Present value of change in PM2.5 concentrations (£): £454

Of which:

Concentration costs: £454

Other impacts: £0

#### Total Change

Total value of change in air quality (£): £12,507

\*positive value reflects a net benefit (i.e. air quality improvement)

### Quantitative Assessment:

#### Impact Pathways Approach (Concentrations)

Change in NO2 assessment scores over 60 year appraisal period: -462.98

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 assessment scores over 60 year appraisal period: -8.10

(between 'with scheme' and 'without scheme' scenarios)

#### Damage Costs Approach (Emissions)

Change in NOX emissions over 60 year appraisal period (tonnes): 0

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 emissions over 60 year appraisal period (tonnes): 0

(between 'with scheme' and 'without scheme' scenarios)

OR

Change in PM10 emissions over 60 year appraisal period (tonnes): 0

(between 'with scheme' and 'without scheme' scenarios)

### Qualitative Comments:

DMRB predictions are not verified.  
Overall a net beneficial change is predicted as a result of the scheme.  
For PM<sub>2.5</sub> there is a beneficial change in concentration, a benefit from other impacts, and overall there is a net beneficial change as a result of the scheme.  
For NO<sub>2</sub> there is a beneficial change in concentration, a benefit from other impacts, and overall there is a net beneficial change as a result of the scheme.

### Sensitivity Analysis:

Upper estimate net present value of change in air quality (£): £40,901

Lower estimate net present value of change in air quality (£): £4,002

### Data Sources:

DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Ollerton**

## Air Quality Valuation Workbook - Worksheet 3

Scheme Name: A614/A6097 Corridor - Ollerton Roundabout

Present Value Base Year:

Current Year:

Proposal Opening year:

Project (Road/Rail or Road and Rail):

**Overall Assessment Score:**

**Damage Costs Approach (Emissions)**

Present value of change in NOx emissions (£):

Present value of change in PM2.5 emissions (£):

OR

Present value of change in PM10 emissions (£):

**Impact Pathways Approach (Concentrations)**

Present value of change in NO2 concentrations (£):

Of which:

Concentration costs:

Other impacts:

Present value of change in PM2.5 concentrations (£):

Of which:

Concentration costs:

Other impacts:

**Total Change**

Total value of change in air quality (£):

\*positive value reflects a net benefit (i.e. air quality improvement)

**Quantitative Assessment:**

**Impact Pathways Approach (Concentrations)**

Change in NO2 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

**Damage Costs Approach (Emissions)**

Change in NOX emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

OR

Change in PM10 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

**Qualitative Comments:**

DMRB predictions are not verified.  
 Overall a net beneficial change is predicted as a result of the scheme.  
 For PM<sub>2.5</sub> there is a detrimental change in concentration, no change from other impacts, and overall there is a net detrimental change as a result of the scheme.  
 For NO<sub>2</sub> there is a beneficial change in concentration, a benefit from other impacts, and overall there is a net beneficial change as a result of the scheme.

**Sensitivity Analysis:**

Upper estimate net present value of change in air quality (£):

Lower estimate net present value of change in air quality (£):

**Data Sources:**

DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Mickledale**

## Air Quality Valuation Workbook - Worksheet 3

Scheme Name: A614/A6097 Corridor - Mickledale Junction

Present Value Base Year:

Current Year:

Proposal Opening year:

Project (Road/Rail or Road and Rail):

**Overall Assessment Score:**

**Damage Costs Approach (Emissions)**

Present value of change in NOx emissions (£):

Present value of change in PM2.5 emissions (£):

OR

Present value of change in PM10 emissions (£):

**Impact Pathways Approach (Concentrations)**

Present value of change in NO2 concentrations (£):

Of which:

Concentration costs:

Other impacts:

Present value of change in PM2.5 concentrations (£):

Of which:

Concentration costs:

Other impacts:

**Total Change**

Total value of change in air quality (£):

\*positive value reflects a net benefit (i.e. air quality improvement)

**Quantitative Assessment:**

**Impact Pathways Approach (Concentrations)**

Change in NO2 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

**Damage Costs Approach (Emissions)**

Change in NOX emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

OR

Change in PM10 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

**Qualitative Comments:**

DMRB predictions are not verified.  
 Overall no change is predicted as a result of the scheme.  
 For PM<sub>2.5</sub> there is no change in concentration, no change from other impacts, and overall there is no change as a result of the scheme.  
 For NO<sub>2</sub> there is a no change in concentration, a no change other impacts, and overall there is no change as a result of the scheme.

**Sensitivity Analysis:**

Upper estimate net present value of change in air quality (£):

Lower estimate net present value of change in air quality (£):

**Data Sources:**

DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Lowdham**

## Air Quality Valuation Workbook - Worksheet 3

Scheme Name: A614/A6097 Corridor - Lowdham Roundabout

Present Value Base Year:   
 Current Year:   
 Proposal Opening year:   
 Project (Road/Rail or Road and Rail):

**Overall Assessment Score:**

**Damage Costs Approach (Emissions)**

Present value of change in NOx emissions (£):   
 Present value of change in PM2.5 emissions (£):   
 OR  
 Present value of change in PM10 emissions (£):

**Impact Pathways Approach (Concentrations)**

Present value of change in NO2 concentrations (£):   
 Of which:  
 Concentration costs:   
 Other impacts:   
 Present value of change in PM2.5 concentrations (£):   
 Of which:  
 Concentration costs:   
 Other impacts:

**Total Change**

Total value of change in air quality (£):   
\*positive value reflects a net benefit (i.e. air quality improvement)

**Quantitative Assessment:**

**Impact Pathways Approach (Concentrations)**

Change in NO2 assessment scores over 60 year appraisal period:  
 (between 'with scheme' and 'without scheme' scenarios)   
 Change in PM2.5 assessment scores over 60 year appraisal period:  
 (between 'with scheme' and 'without scheme' scenarios)

**Damage Costs Approach (Emissions)**

Change in NOX emissions over 60 year appraisal period (tonnes):  
 (between 'with scheme' and 'without scheme' scenarios)   
 Change in PM2.5 emissions over 60 year appraisal period (tonnes):  
 (between 'with scheme' and 'without scheme' scenarios)   
 OR  
 Change in PM10 emissions over 60 year appraisal period (tonnes):  
 (between 'with scheme' and 'without scheme' scenarios)

**Qualitative Comments:**

DMRB predictions are not verified.  
 Overall a net beneficial change is predicted as a result of the scheme.  
 For PM<sub>2.5</sub> there is a beneficial change in concentration, no change from other impacts, and overall there is a net beneficial change as a result of the scheme.  
 For NO<sub>2</sub> there is a beneficial change in concentration, a benefit from other impacts, and overall there is a net beneficial change as a result of the scheme.

**Sensitivity Analysis:**

Upper estimate net present value of change in air quality (£):   
 Lower estimate net present value of change in air quality (£):

**Data Sources:**

DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Kirkhill**



## Air Quality Valuation Workbook - Worksheet 3

Scheme Name: A614/A6097 Corridor - Kirk Hill Junction

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Rail):

### Overall Assessment Score:

#### Damage Costs Approach (Emissions)

Present value of change in NOx emissions (£):

Present value of change in PM2.5 emissions (£):

OR

Present value of change in PM10 emissions (£):

#### Impact Pathways Approach (Concentrations)

Present value of change in NO2 concentrations (£):

Of which:

Concentration costs:

Other impacts:

Present value of change in PM2.5 concentrations (£):

Of which:

Concentration costs:

Other impacts:

#### Total Change

Total value of change in air quality (£):

\*positive value reflects a net benefit (i.e. air quality improvement)

### Quantitative Assessment:

#### Impact Pathways Approach (Concentrations)

Change in NO2 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 assessment scores over 60 year appraisal period:

(between 'with scheme' and 'without scheme' scenarios)

#### Damage Costs Approach (Emissions)

Change in NOX emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Change in PM2.5 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

OR

Change in PM10 emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

### Qualitative Comments:

DMRB predictions are not verified.  
Overall a net beneficial change is predicted as a result of the scheme.  
For PM<sub>2.5</sub> there is no change in concentration, no change from other impacts, and overall there is no change as a result of the scheme.  
For NO<sub>2</sub> there is no change in concentration, a benefit from other impacts, and overall there is a net beneficial change as a result of the scheme.

### Sensitivity Analysis:

Upper estimate net present value of change in air quality (£):

Lower estimate net present value of change in air quality (£):

### Data Sources:

DMRB V8 Emission Factor Toolkit V10 spreadsheet.

# Appendix II – DEFRA Emission Factor TAG Workbooks

**All Scheme**

## Greenhouse Gases Workbook - Worksheet 1

Scheme Name: A614/A6097 Corridor - All Schemes

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Rail):

### Overall Assessment Score:

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

### Quantitative Assessment:

Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	0
Non-traded sector	0	0	0	-1678.822219

### Qualitative Comments:

There is a net decrease in carbon emissions over the 60 year appraisal period of 19,777 tonnes and in the opening year of 337 tonnes.

### Sensitivity Analysis:

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

### Data Sources:

CO<sub>2</sub> emissions data from DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Ollerton**

## Greenhouse Gases Workbook - Worksheet 1

Scheme Name: A614/A6097 Corridor - Ollerton Roundabout

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Rail):

### Overall Assessment Score:

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

### Quantitative Assessment:

Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	0
Non-traded sector	0	0	0	-592.0054994

### Qualitative Comments:

There is a net decrease in carbon emissions over the 60 year appraisal period of 6,870 tonnes and in the opening year of 119 tonnes.

### Sensitivity Analysis:

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

### Data Sources:

CO<sub>2</sub> emissions data from DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Mickledale**

## Greenhouse Gases Workbook - Worksheet 1

Scheme Name: A614/A6097 Corridor - Mickledale Junction

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Rail):

### Overall Assessment Score:

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

### Quantitative Assessment:

Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):  
 (between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):  
 (between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	0
Non-traded sector	0	0	0	4.633291606

### Qualitative Comments:

There is a net increase in carbon emissions over the 60 year appraisal period of 54 tonnes and in the opening year of 1 tonne.

### Sensitivity Analysis:

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

### Data Sources:

CO<sub>2</sub> emissions data from DMRB V8 Emission Factor Toolkit V10 spreadsheet.



**Lowdham**

# Greenhouse Gases Workbook - Worksheet 1

Scheme Name: A614/A6097 Corridor - Lowdham Roundabout

Present Value Base Year:

Current Year:

Proposal Opening year:

Project (Road/Rail or Road and Rail):

**Overall Assessment Score:**

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

**Quantitative Assessment:**

Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	0
Non-traded sector	0	0	0	-415.8454296

**Qualitative Comments:**

There is a net decrease in carbon emissions over the 60 year appraisal period of 4,916 tonnes and in the opening year of 83 tonnes.

**Sensitivity Analysis:**

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

**Data Sources:**

CO<sub>2</sub> emissions data from DMRB V8 Emission Factor Toolkit V10 spreadsheet.

**Kirkhill**

# Greenhouse Gases Workbook - Worksheet 1

Scheme Name: A614/A6097 Corridor - Kirk Hill Junction

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Rail):

**Overall Assessment Score:**

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

**Quantitative Assessment:**

Change in carbon dioxide equivalent emissions over 60 year appraisal period (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):  
(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

\*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	0
Non-traded sector	0	0	0	-675.6045815

**Qualitative Comments:**

There is a net decrease in carbon emissions over the 60 year appraisal period of 8,045 tonnes and in the opening year of 135 tonnes.

**Sensitivity Analysis:**

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

**Data Sources:**

CO<sub>2</sub> emissions data from DMRB V8 Emission Factor Toolkit V10 spreadsheet.

# Appendix JJ – Wider Economic Impacts Report

# A614/A6097 Major Road Network Junction Improvement Package - Wider Economic Impacts

Nottinghamshire County Council

December 2020

## Quality information

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## Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	13 October 2020	Draft	DW	Dave Widger	Regional Director
V1.2	15 October 2020	Draft	DW	Dave Widger	Regional Director
V2	16 December 2020	Final	DW	Dave Widger	Regional Director

---

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# Executive Summary

## Introduction

Nottinghamshire County Council has commissioned AECOM to undertake a wider economic impacts study of seven proposed junction improvements on the A614/A6097 corridor in Nottinghamshire. The junction improvements (defined as “the Scheme”) include:

- Ollerton Roundabout – the intersection of the A614 / A616 / A6075 roundabout
- Deerdale Lane junction – the A614 / Eakring Road / Deerdale Lane crossroads
- Mickledale Lane junction – the A614 / Mickledale Lane crossroads
- White Post roundabout – the A614 / Mansfield Road roundabout
- Warren Hill junction – the A614 / A6097 priority junction
- Lowdham Roundabout – the A6097 / A612 Nottingham Road / Southwell Road roundabout, and
- Kirk Hill junction – the A6097/ Kirk Hill junction.

The purpose of this study is to assess the wider economic benefits of the Scheme to support the outline business case submission to Department for Transport.

## Summary of Key Findings and Results

The Scheme will support a range of benefits by relieving constraints on development and unlocking property investment. These benefits are assessed in terms of land value uplift. In addition, the Scheme will support a range of wider non-monetised impacts which are important to the case for investment such as employment and economic growth, economic efficiency and business investment, tourism benefits, social and deprivation impacts, and contribution to housing growth and development. A summary of quantitative and qualitative assessment results is presented below.

### Dependent Development and Land Value Uplift

The Scheme will unlock dependent development at two sites: Thoresby Colliery in Newark and Sherwood and Teal Close in Gedling, allowing 1,240 dependent homes and 2.4 hectares of employment land to come forward. The assessment has quantified the land value uplift (LVU) associated with the development, summarised in Table 1-1 below. The Scheme is estimated to deliver a present value of benefits of £21.5m gross LVU and £13.3m net additional LVU.

**Table 1-1 Land Value Uplift**

	<b>Gross impact of Scheme</b>	<b>Net impact of Scheme</b>
Residential Land Value Uplift	£21.0m	£13.0m
Commercial Land Value Uplift	£0.5m	£0.3m
<b>Total LVU</b>	<b>£21.5m</b>	<b>£13.3m</b>

Source: AECOM calculation 2020; Values at 2010 prices

### External Land Amenity Value

LVU captures the net private benefits of the dependent development. In addition to this, the external costs and benefits of development can be captured in order to derive net social value.

At Thoresby Colliery, the development will take place on brownfield land and is anticipated to result in land amenity value gain. However, there is currently limited evidence available on the external amenity impact of development on brownfield land. As a conservative assumption, it is assumed that the change in amenity value on the Thoresby Colliery site is zero.

At Teal Close, development will take place on agricultural land predominantly used to grow crops. This type of land aligns with the definition for intensive agricultural land, with estimated land amenity value of £29,000 per hectare in perpetuity<sup>1</sup>. The delivery of net additional 8.9ha of residential development at Teal Close is therefore estimated to amount to an amenity loss of £258,000 in present value (in 2010 prices).

### External benefits from affordable housing

The analysis also considers the external benefits arising through the provision of affordable housing which are additional to private benefits captured by LVU.

Social housing delivers additional health benefits which measure the annual net savings on health costs due to the provision of affordable housing, which helps to alleviate overcrowding and rough sleeping. It is estimated that the Scheme delivers a net additional £20,880 in external benefits associated with affordable housing (expressed as present value over a 30-year period).

### Supporting employment and economic growth

The two sites unlocked by the Scheme are of strategic importance for the area and will support a large number of employment opportunities. It is estimated that once fully operational, Thoresby Colliery site will support 1,048 gross direct jobs, making a significant economic contribution to the local economy in Newark & Sherwood as well as Nottinghamshire more widely (as illustrated by indicative Gross Value Added benefits of £46.4m per annum). Only a quarter of employment space at the site could come forward without the improvements being implemented, therefore the Scheme plays an important role in ensuring the employment impacts on the site materialise in full.

The Scheme will also benefit the site at Teal Close, which is estimated to support a further 684 gross direct jobs (with associated Gross Value Added benefits of £38.2m per annum). The employment land at Teal Close is not identified as dependent on the improvements, however, given the constraints to the residential aspect of the development, the

<sup>1</sup> DfT (2020) TAG Workbook Valuing Dependent Development

implementation of improvements will be beneficial in ensuring the site is built out in full and employment impacts materialise.

In addition to direct jobs, a range of indirect and induced jobs will be supported through multiplier effects in the economy. In total, 1,153 direct, indirect and induced jobs could be supported locally by the development at Thoresby Colliery and 752 total jobs at Teal Close. At the regional level, the two sites could support 2,598 direct, indirect and induced jobs.

Furthermore, the development unlocked by the Scheme will support additional fiscal impacts in the form of local council tax and business rates revenues. The development at Thoresby Colliery is estimated to generate an additional c. £1.5m per annum of council tax revenues for Newark and Sherwood (of which c. £1.2m would be associated with the dependent housing on the site). In addition, c. £600,000 in business rates revenues would be generated per annum (of which c. £450,000 is estimated to be associated with the dependent development on the site). Similarly for Teal Close, the development could contribute additional c. £1.5m per annum in council tax revenue for Gedling Council (of which £1.1m would be associated with the dependent housing on the site). The additional business rates revenue associated with the employment space at Teal Close is estimated to amount to a further £420,000 (although it should be noted that the employment space at Teal Close is not considered to be dependent on the Scheme).

### **Improving business efficiency and supporting investment**

The improved journey times on the network as a result of the Scheme are expected to lead to increased economic efficiencies and improved competitiveness for businesses through cost savings, as well as increased certainty and ability to plan as the network becomes more reliable.

The Scheme will relieve business constraints currently experienced along the route and at pinch points at the identified junctions. In addition to addressing safety and congestion concerns, engagement with businesses along the route identified the potential for the Scheme to influence investment decisions. The reduced travel times and improved reliability along the network will allow businesses to improve processes resulting in greater efficiency through increased delivery speeds, later delivery cut-off times and increased output, particularly for road-reliant sectors. These conditions allow businesses to interact more efficiently with each other and their supply chain. The knock-on effect will ultimately lead to increased productivity, a key priority for the regional economy.

Improved performance on the transport network can increase the attractiveness of the route as a place for business, allowing businesses to expand as well as drawing new investment to locate in the area. Business engagement has identified that a number of companies along the route are currently constrained in their ability to expand their operations due to the issues experienced at the junctions. The delivery of the Scheme would be expected to directly support increased investment into the area by relieving constraints on businesses. The overall impact has the potential to encourage inward investment into the area, as business locations along the route become more attractive.

### **Tourism sector impacts**

Tourism is one of the key sectors along the A614/A6097 route with nationally-significant assets located along the corridor including Center Parcs, Sherwood Pines and Rufford Park. Consultations with these organisations identified that the congestion and delays on the network and queues at key junctions are impacting on visitor satisfaction levels, affecting perceptions and likelihood of return visits. The Scheme has the potential to greatly benefit

the visitor experience to key tourism destinations along the A614/A6097 corridor. In doing so, the Scheme will encourage return trips as well generating reputational benefits for Nottinghamshire's tourism cluster as a whole.

In addition, the Scheme could benefit the tourism sector by allowing organisations to operate more efficiently through reduced churn of labour, as well as allowing to attract more workers to the area. Current conditions on the network have been identified by consultees as impacting on ability to attract and retain staff. These challenges have been echoed by employers in other sectors along the route. Alleviating these issues could therefore bring benefits for tourism as well as other sectors along the route.

### **Deprivation and social impacts**

The combination of transport and housing benefits enabled by the scheme will support further social impacts for communities along the corridor. The additional high quality housing and social infrastructure enabled by the dependent development along the A614 will support physical regeneration and improved infrastructure provision, as well as access to high quality jobs. These factors are important in delivering regeneration outcomes and demonstrate how an improved road network can lead to improved neighbourhoods and attractiveness of places. The additional local services will enhance the vitality of places, adding value to quality of life and contributing to wider physical regeneration outcomes.

### **Contributing to housing growth and development**

In addition to unlocking development dependent on the Scheme, improvements to the A614/A6097 corridor have the potential to contribute to the wider growth agenda in the local authorities along the corridor. Major development opportunities are planned along the route in Newark & Sherwood, Gedling, Rushcliffe and Bassetlaw. The Scheme has the potential to improve the investment conditions along the route, stimulating development. By helping to improve transport conditions and provide consistency of service along the corridor, the Scheme will increase the capacity on the network to help development to come forward, resulting in an uplift in the wider housing and employment land provision - one of the key objectives of the Scheme.

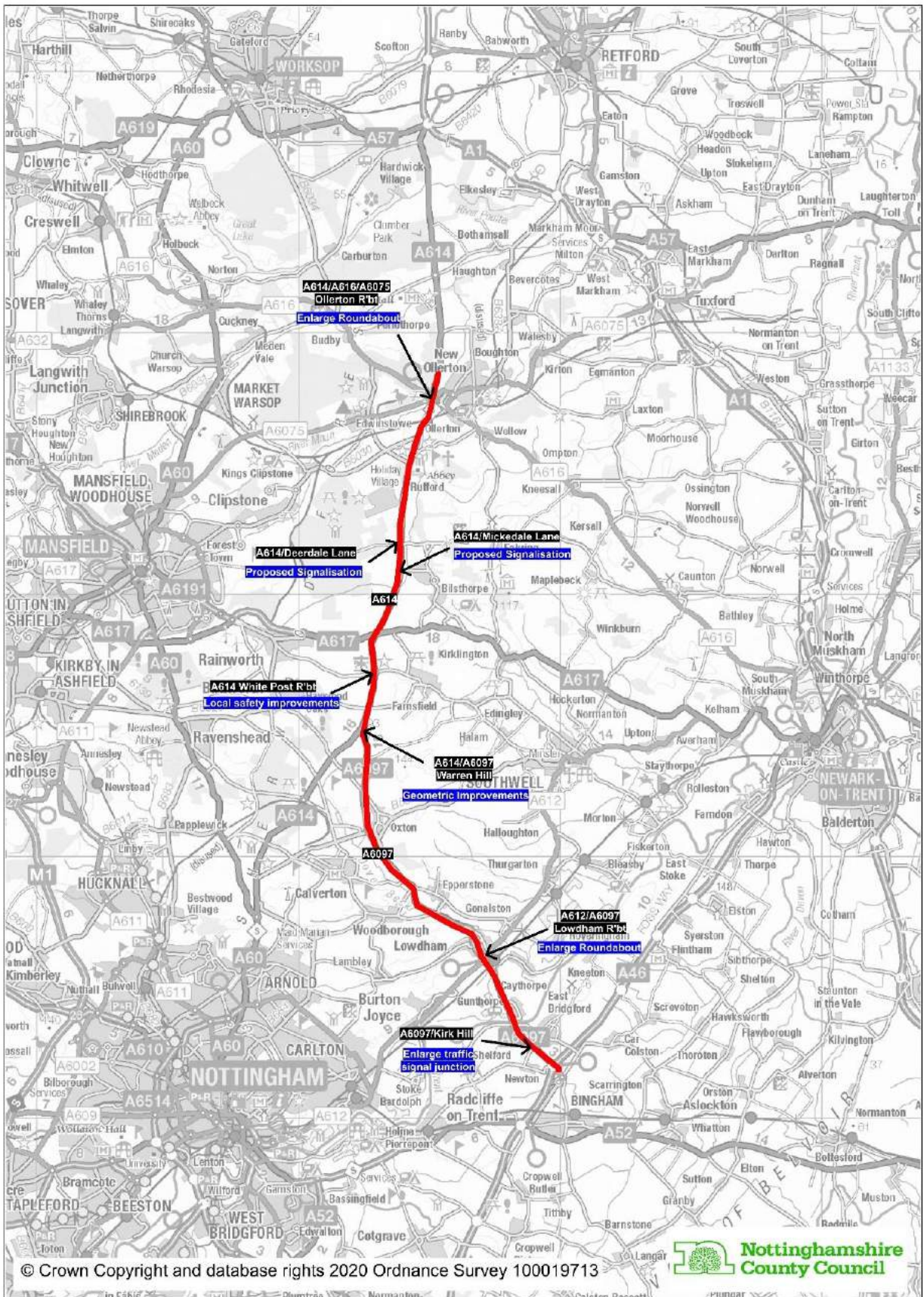
# 1. Introduction

## Background

- 1.1 The A614 is an important north-south route from Nottingham through Gedling, Newark and Sherwood to Bassetlaw and further north. The A6097 provides a spur from the A614 to the A46 (which is a dual carriageway trunk road linking Leicester with Newark and Lincoln). A number of junctions along the route are heavily congested and pose difficulties and dangers for drivers trying to access the A614 from adjoining settlements.
- 1.2 To address these issues, a package of seven junction improvements has been identified along the A614/A6097 corridor by Nottinghamshire County Council (NCC). These are presented in Figure 1-1. For the purposes of the study, the junction improvements are defined as "the Scheme" and include:
  - Ollerton Roundabout – the intersection of the A614 / A616 / A6075 roundabout
  - Deerdale Lane junction – the A614 / Eakring Road / Deerdale Lane crossroads
  - Mickledale Lane junction – the A614 / Mickledale Lane crossroads
  - White Post roundabout – the A614 / Mansfield Road roundabout
  - Warren Hill junction – the A614 / A6097 priority junction
  - Lowdham Roundabout – the A6097 / A612 Nottingham Road / Southwell Road roundabout, and
  - Kirk Hill junction – the A6097/ Kirk Hill junction.
- 1.3 Nottinghamshire County Council has commissioned AECOM to undertake a wider economic impacts study to support the outline business case (OBC) submission to Department for Transport (DfT).



Figure 1-1 A614/A6097 Corridor Improvements (the Scheme)





## Purpose and outputs

- 1.4 The purpose of this study is to assess the wider economic benefits of the Scheme. The OBC for the Scheme has quantitatively assessed the journey time impacts and qualitatively described the benefits of reducing vehicle operating costs and reliability. These are categorised as Level 1 impacts in the Transport Appraisal Guidance (TAG) produced by DfT.
- 1.5 This study focuses on assessing the wider economic impacts described in TAG. In particular, benefits of induced investment for dependent developments are captured using land value uplift (LVU) techniques. The study also considers a range of wider non-monetised impacts of the Scheme such as employment and economic growth, economic efficiency and business investment, tourism benefits, and social and deprivation impacts.

## 2. Local Economic Profile

- 2.1 This section of the report details the current economic conditions of those who live and work close to the Scheme as well as those who use the route for longer distance travel. The Local Economic Profile provides a baseline by which the future wider economic benefits of the Scheme can be comparatively assessed. The Local Economic Profile identifies key strengths and challenges faced by local people who live and work close to the Scheme and a review of local business sector composition. This information is key to assessing wider economic benefits which the Scheme will provide.

### Study Area

- 2.2 Six of the component junctions of the Scheme are located within the district of Newark and Sherwood, with A6097/ Kirk Hill junction located in Rushcliffe. It is important to recognise that the A614/A6097 corridor continues outside of the two local authorities, with significant proportions of the route running through Gedling and Bassetlaw. Residents and workers in these local authorities will also consequently benefit from the Scheme. The wider areas of Nottinghamshire, the East Midlands and England are presented as comparative geographies throughout the Local Economic Profile.

### Population

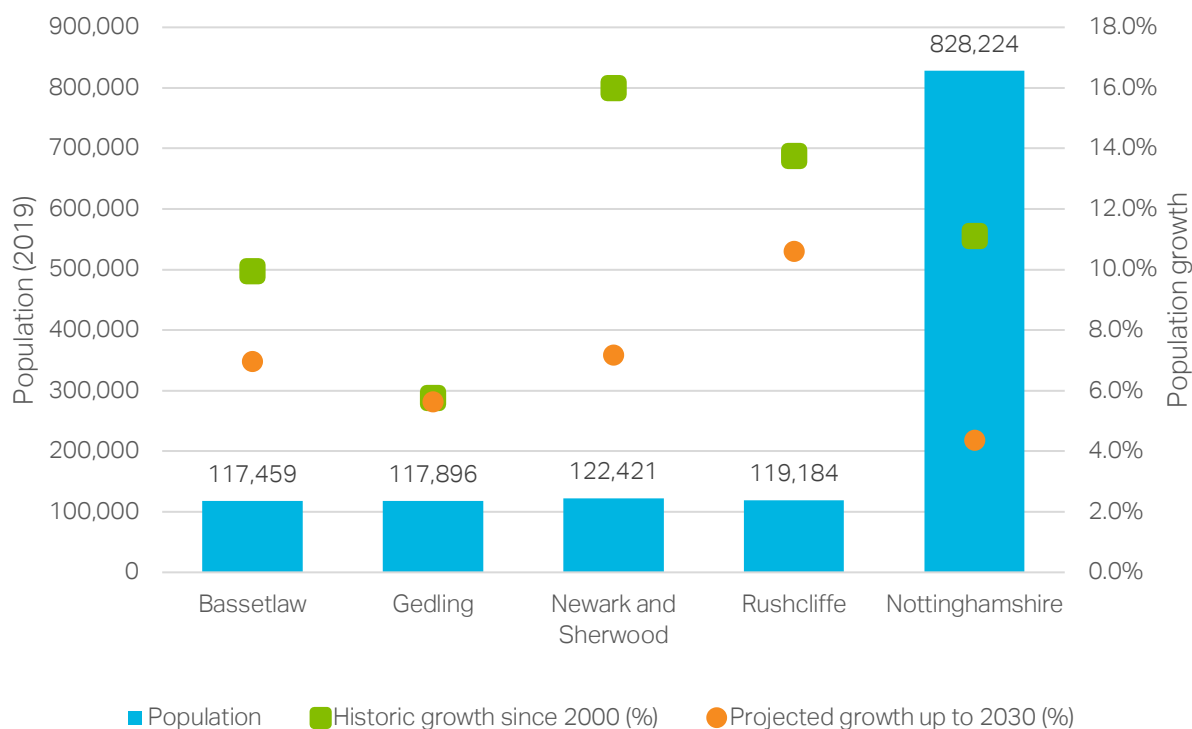
- 2.3 According to the Office for National Statistics (ONS)<sup>2</sup>, Newark and Sherwood has approximately 122,000 residents making up around 15% of Nottinghamshire's population. The district's population has grown by 16.0% since the year 2000, making it the fastest growing district in Nottinghamshire, which has by comparison grown 11.1% over the same time period. Growth across the study area is expected to continue to increase and the latest ONS population statistics forecast an average 7.6% increase in the resident population across the local authorities along the A614/A6097 route over the next 10 years, much faster than the 4.4% expected nationally<sup>3</sup>.

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<sup>2</sup> ONS (2020) Population Estimates

<sup>3</sup> ONS (2020) Population Projections

**Figure 2-1 Population & population growth**



Source: ONS (2020) Population Estimates; ONS (2020) Population Projections

2.4 According to the 2011 Census, the largest population centre along the A614/A6097 route is Ollerton with around 10,000 residents. Lowdham, Bilsthorpe and Farnsfield are also adjacent to the route. These villages have been identified by Newark and Sherwood District Council as 'Principal Villages' in that they have an important role in the provision of day to day services to surrounding areas<sup>4</sup>. Despite these population centres, most of the route runs through relatively rural areas. The population density of Newark and Sherwood, which includes larger urban areas such as Newark-on-Trent, is just 43% of the national average meaning that there are around 2.3 times more people per square kilometre nationally than compared with Newark and Sherwood<sup>5</sup>.

## The Labour Market

### Economic Activity

2.5 The Annual Population Survey<sup>6</sup> conducted by the ONS provides the most up to date economic activity, employment and unemployment statistics for the UK. As of March 2020, the economic activity rate in Newark and Sherwood is 80.1%, which is lower than the surrounding local authorities of Bassetlaw (83.6%), Gedling (85.0%) and Rushcliffe (82.5%) and Nottinghamshire (81.9%). This represents a high proportion of the population compared to historical rates which have been continually increasing over the last 10 years.

<sup>4</sup> Newark and Sherwood District Council (2019) Review of the Newark & Sherwood Local Development Framework Core Strategy & Allocations: Amended Core Strategy Adopted March 2019.

<sup>5</sup> ONS (2019) Mid-Year Population Statistics

<sup>6</sup> ONS (2020) Annual Population Survey Economic Activity Rate and Unemployment Rate April 2019-March 2020

- 2.6 The employment rate in Newark and Sherwood is exactly in line with the national figure at 76.2% of the 16-64 year old population, but is below the adjacent local authorities along the A614/A6097 route and below Nottinghamshire as a whole.
- 2.7 4.9% of Newark and Sherwood’s population are unemployed and the district has higher unemployment than all of the other adjacent local authorities, and in particular when compared to Nottinghamshire which has an unemployment rate of just 3.0%. It should be noted that due to small sample sizes the ONS has identified the unemployment figure for Newark and Sherwood as unreliable; however, this is still recognised to be the best available estimate of unemployment for the area.
- 2.8 Data for the economic activity rate and unemployment rate for all geographies is summarised in Table 2-1.

**Table 2-1 Economic activity and unemployment rates aged 16-64**

Location	Economic activity rate	Employment rate	Unemployment rate
Newark and Sherwood	80.1%	76.2%	4.9%
Bassetlaw	83.6%	81.9%	-
Gedling	85.0%	81.9%	3.7%
Rushcliffe	82.5%	80.4%	-
Nottinghamshire	81.9%	79.4%	3.0%
East Midlands	79.7%	76.8%	3.7%
England	79.4%	76.2%	4.0%

Source: Annual Population Survey 2020; Unemployment data for Bassetlaw and Rushcliffe unavailable due to small sample sizes.

- 2.9 Despite this being the most recent release of the Annual Population Survey, these results reflect the March 2020 labour market and so it is unlikely that this data fully incorporates the impacts of the COVID-19 pandemic on economic activity and unemployment rates. It is reasonable to assume that demand deficiencies in the product and service markets may transfer to the labour market, raising unemployment and discouraging economic activity. This is reflected in more recent data sources such as a notable increase in the claimant count. In Newark and Sherwood, the number of people claiming benefits has more than doubled from March to the most recent July 2020 statistical release, from 1,800 people to 3,800 people<sup>7</sup>. This sharp increase has yet to have been captured by many of the ONS’ labour market metrics.

## Skills and occupations

- 2.10 The Annual Population Survey also allows for comparison between the qualification levels of different geographies based on National Vocational Qualification (NVQ) levels.<sup>8</sup>
- 2.11 Newark and Sherwood’s population is less qualified compared to other geographies. Approximately 11.0% of the local population have no qualifications, far higher than across Nottinghamshire, regionally and nationally which all have a similar percentage from 6.5% to 7%. In addition, the percentage of Newark and Sherwood’s population who are educated to degree level or equivalent (NVQ4) is 6.0 percentage points lower than

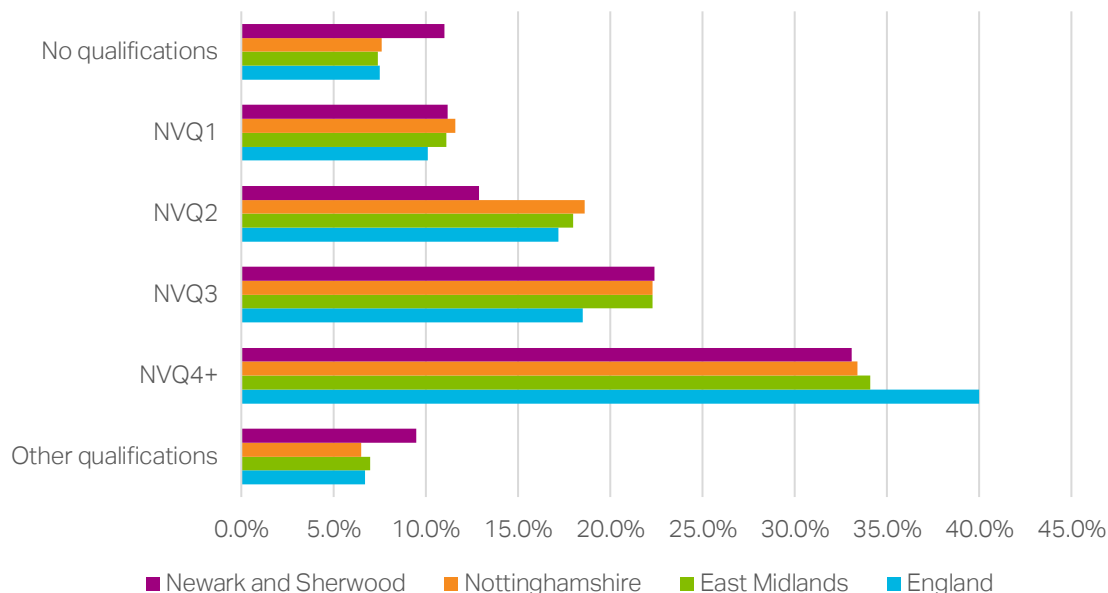
<sup>7</sup> ONS (2020) Claimant Count Statistics

<sup>8</sup> For reference, NVQ1 is the equivalent of holding three to four GCSEs at grade D-E, NVQ 2 is equivalent to those with four to five GCSEs at grade A\*-C, NVQ 3 is equivalent to two or more A Levels while NVQ 4+ is equivalent to degree level or higher.

the national rate although the rate is similar to that for Nottinghamshire and the East Midlands.

2.12 Figure 2-2 provides a visualisation of the maximum qualification levels held by residents of Newark and Sherwood relative to other geographies.

**Figure 2-2 Population by highest NVQ level**

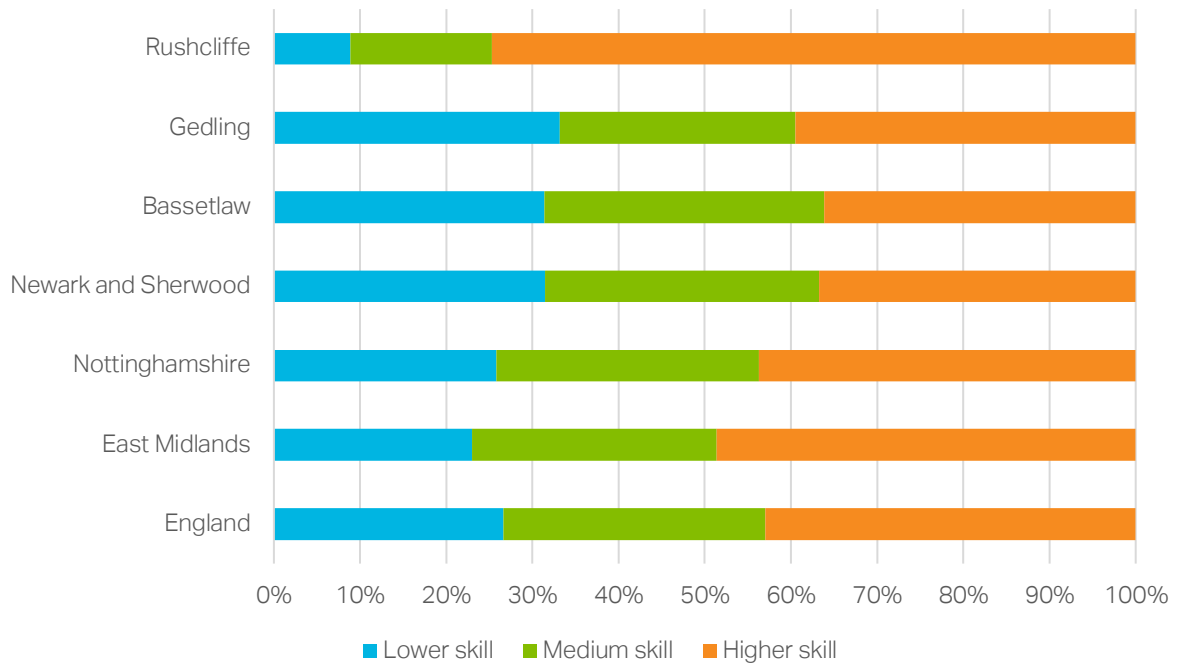


Source: ONS (2020) Annual Population Survey

2.13 The low level of qualifications held by Newark and Sherwood’s residents are reflected in the local occupational profile. The occupational profile in Newark and Sherwood is skewed away from higher skilled and more productive occupations towards more elementary occupations where less value is added to the economy, particularly when compared to Nottinghamshire and the East Midlands. The profile is similar across Bassetlaw and Gedling, although Rushcliffe shows a prevalence of higher level skills. The large proportion of workers across lower, medium and higher skilled jobs is set out in Figure 2-3.<sup>9</sup>

<sup>9</sup> Lower skill occupations are defined as: elementary occupations; process, plant and machine operatives; sales and customer service occupations. Medium skill occupations are defined as: caring, leisure and other service; skilled trades occupations; administrative and secretarial. High skill occupations are defined as: associate prof & tech occupations; professional occupations; managers, directors and senior officials.

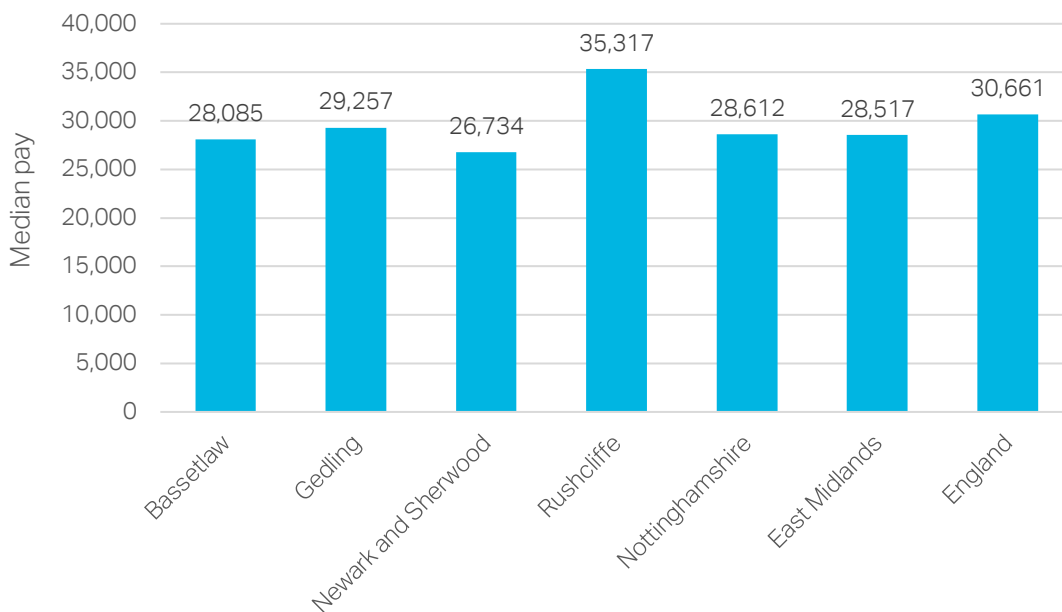
**Figure 2-3 Employment occupations**



Source: ONS (2020) Annual Population Survey

2.14 Lower skilled jobs often translate to less worker compensation by employers which is likely to result in lower earnings. As can be seen in Figure 2-4, median annual earnings in Newark and Sherwood are the lowest in the study area, while the high skill occupational profile in Rushcliffe translates to higher earnings (exceeding local and national comparators).

**Figure 2-4 Gross median annual earnings (resident-based)**



Source: ONS (2019) Annual Survey of Hours and Earnings. Table 8.7a

2.15 The ONS’ Job Density Statistics<sup>10</sup> suggests that Newark and Sherwood is a net exporter of labour to other local authorities. Across the district, there are approximately 0.81 jobs

<sup>10</sup> ONS (2019) Job Density Statistics

per working age resident. This figure is considerably higher than the job density in Nottinghamshire as a whole (0.70), possibly due to other local authorities in the county having higher dependency on Nottingham and other major towns and cities as a source of jobs for their residents. Despite also being in line with the job density experienced across the East Midlands (0.80), all of these geographies fall somewhat behind the 0.87 jobs per working aged person experienced for England as a whole, showing there are fewer jobs in these locations.

- 2.16 The fact that Newark and Sherwood is a net exporter of labour is also reflected in the Origin-Destination data from the 2011 Census<sup>11</sup>. Almost half (47.6%) of Newark and Sherwood's resident population commute to other areas for work, totalling around 20,800 people. By way of contrast, around 17,340 residents of other local authorities commute to Newark and Sherwood for work, suggesting there are still some employment opportunities within the district that can draw labour in from elsewhere but this is outstripped by the number of people leaving the district for work by circa 3,500 people.
- 2.17 Of those who reside in Newark and Sherwood but work elsewhere, a high percentage commute to Nottingham and Mansfield. Indeed, a fairly high proportion travel to surrounding local authorities in Nottinghamshire and Lincolnshire while a proportion also commute even further afield. A breakdown of workplace locations of Newark and Sherwood's residents is presented in Table 2-2.

**Table 2-2 Location of workplace for residents of Newark and Sherwood**

Workplace location	Percentage of resident population
Newark and Sherwood	52.4%
Nottingham	8.0%
Mansfield	7.2%
Ashfield	4.0%
Bassetlaw	3.9%
Gedling	3.4%
Rushcliffe	2.5%
South Kesteven	2.5%
Lincoln	2.2%
North Kesteven	2.1%
Other	11.9%

Source: Census 2011: Location of usual residence and place of work

- 2.18 The 2011 Census<sup>12</sup> also sheds light on the methods of transport used when travelling to work. As can be seen in Figure 2-5, 73.0% of Newark and Sherwood residents are dependent on either driving a car or van, or being a passenger in one in order to travel to work. The high dependency on motor vehicle travel and the high number of residents commuting elsewhere for work means that there is additional strain on roads such as the A614 and A6097 in order to travel to work. The average commuting distance in Newark and Sherwood is a lengthy 18.8km<sup>13</sup> contributing to large numbers of motor vehicles on

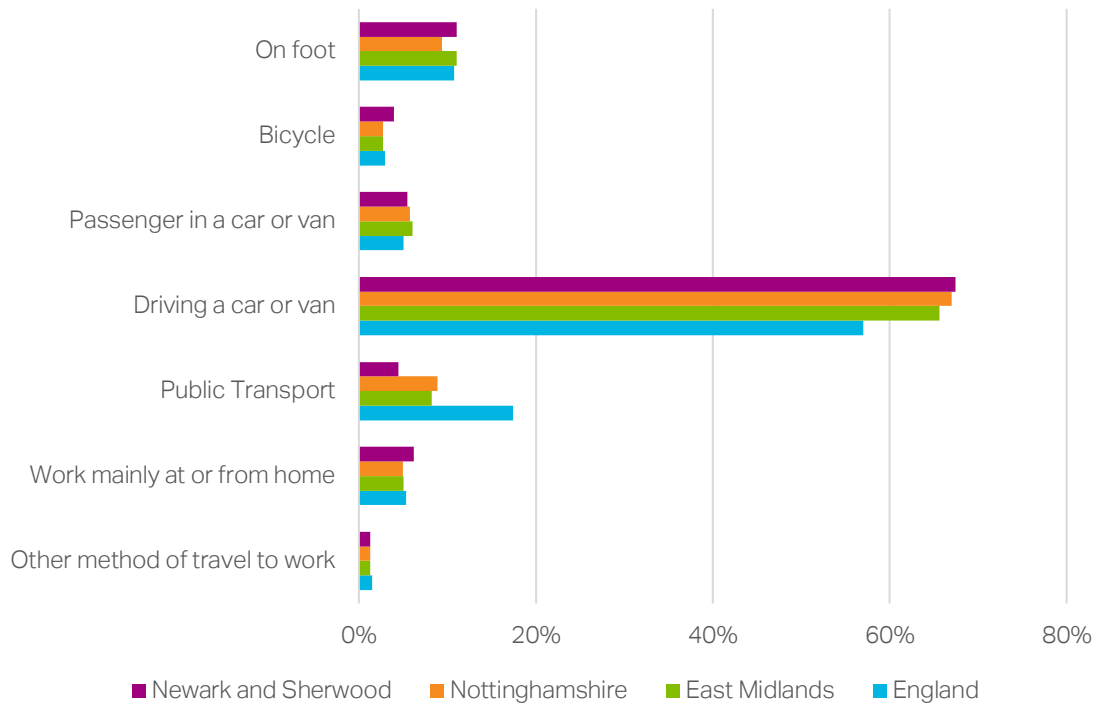
<sup>11</sup> Census 2011: Origin Destination Statistics

<sup>12</sup> Census 2011: Method of Travel to Work

<sup>13</sup> Census 2011: Distance Travelled to Work

roads. This highlights the importance of the major road network in the district and particularly the A614/A6097 corridor in the western part of the district to people who live and work in the district and are dependent on roads for commuting.

**Figure 2-5 Method of travel to work**



Source: Census 2011: Location of usual residence and place of work

## Economic Performance and Composition

2.19 According to NCC’s FAME 2020 database, there are approximately 3,500 businesses located within two miles of the A614/A6097 corridor. These businesses employ approximately 97,000 people and have a total operating revenue of over £6.5 billion. Over half of the employees (58%) work in Bassetlaw, with a great many working in parts of Worksop which is located within two miles of the northern end of the route. It should be noted that while these businesses will benefit from the Scheme, they are less dependent on the route than businesses in Newark and Sherwood due to access to faster north-south routes such as the A60, the M1 and the A1. Approximately one third of employees working within two miles of the route corridor live in Newark and Sherwood with businesses particularly clustering in Ollerton, Edwinstowe, Bilsthorpe and Farnsfield. There are also significant clusters of businesses located in Ashfield in Gedling and Bingham in Rushcliffe within two miles south of the southern end of the A614 and A6097 respectively.

2.20 Of these businesses located within two miles of the corridor, the construction sector is the largest with around 500 business. This is followed by the professional, scientific and technical activities sector (430), wholesale and retail trade (400), administration and support services (260), real estate activities (255) and manufacturing (220) sectors respectively.



- 2.21 The 2019 Business Register and Employment Survey (BRES)<sup>14</sup> provides a detailed breakdown of the sectors in which a population is employed in. The low population density in Newark and Sherwood is somewhat reflected in the types of sectors in which its residents work. In particular, 5.4% of Newark and Sherwood's employment is in the primary sector, over double the figure (2.5%) for England, with jobs in the agriculture, forestry & fishing sector particularly high. A major employer in this sector is Strawson Ltd. located in Bilsthorpe which supplies many of the UK's leading supermarkets with locally grown vegetables. Around 90 full time staff are employed at the site, as well as another 250 subcontracted workers during peak times.
- 2.22 Similar to wider Nottinghamshire and the East Midlands, Newark and Sherwood has a high rate of employees who work in manufacturing compared to the national average. This is reflective of the region's historic reputation for high value manufacturing. Within the D2N2 LEP area, the manufacturing sector is the third largest employer and it is the sector which provides the largest contribution to the UK economy (around £8.1 billion). Other major sectors in the D2N2 LEP area (such as trade and health & social network) contribute £5.8 billion and £4.4 billion to the UK economy respectively<sup>15</sup>. The manufacturing sector within D2N2 has grown by 17.2% between 2012 and 2017 highlighting its increasing importance to the region.
- 2.23 Employment in the accommodation and food services sector as well as in the arts, entertainment, recreation & other services sector are both relatively high in Newark and Sherwood compared to other geographies. This indicates that a strong tourism sector exists in Newark and Sherwood and this is discussed in more detail in the next section of the Local Economic Profile.
- 2.24 It is also worth noting that a relatively large proportion of the workforce in Newark and Sherwood are employed in the transport and storage (6.9%), 1.5 times higher than the Great Britain average. This is representative of the district's location at the centre of the UK providing the ability to access and serve large parts of the country in different directions. Access to free flowing roads may be particularly important in improving productivity of businesses in this sector, and other sectors which are generally dependent on road travel for accessing customers and markets, enabling staff to easily commute and importing or distributing goods to and from other parts of the country.
- 2.25 Table 2-3 provides a detailed breakdown of the broad industrial groups in which employees work relative to that seen in Great Britain, for example a score of 2 would mean that area has double the proportion of its employed population working in that sector than Great Britain as a whole while a score 0.5 means the area has half the proportion.

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<sup>14</sup> ONS (2019) Business Register and Employment Survey

<sup>15</sup> D2N2 LEP (2019) Local Industrial Strategy

**Table 2-3 Employment by sector – location quantitative analysis relative to Great Britain**

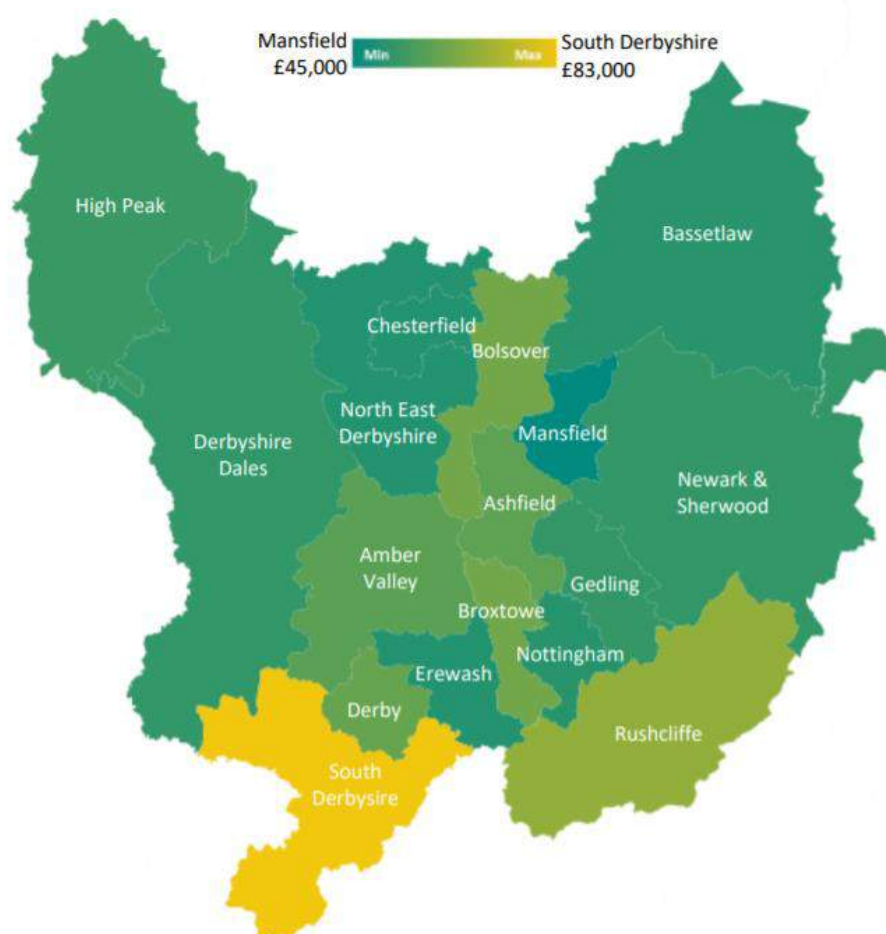
Industry	Newark and Sherwood	Nottinghamshire	East Midlands
Agriculture, forestry & fishing	2.1	1.0	1.1
Mining, quarrying & utilities	1.5	1.2	1.2
Manufacturing	1.5	1.6	1.6
Construction	1.2	1.4	1.0
Motor trades	1.5	1.5	1.3
Wholesale	0.7	1.2	1.3
Retail	1.1	1.1	1.0
Transport & storage	1.5	1.0	1.1
Accommodation & food services	1.6	0.9	0.9
Information & communication	0.7	0.7	0.7
Financial & insurance	0.2	0.3	0.5
Property	0.7	0.7	0.7
Professional, scientific & technical	0.5	0.7	0.7
Business administration & support services	0.8	0.8	1.0
Public administration & defence	0.6	0.8	0.9
Education	0.7	1.0	1.0
Health	0.9	1.1	1.0
Arts, entertainment, recreation & other services	1.3	1.1	1.1

Source: ONS (2019) Business Register and Employment Survey

- 2.26 The sectoral mix of businesses along the corridor, combined with other metrics discussed in the Local Economic Profile influence how productive the corridor is. Productivity can be measured using Gross value added (GVA), which is a representation of the total value of goods and services produced in an area. This measure, per head of population, therefore provides a good indication of productivity.
- 2.27 The D2N2 Local Industrial Strategy Evidence Base provides a useful comparison of productivity per full-time equivalent employment.<sup>16</sup> It shows the broad range of productivity across the region, with employees in South Derbyshire on average producing £38,000 more in GVA per year than a worker in Mansfield. Across the D2N2 LEP area, the highest productivity levels are seen on the southern boundary, with a spine of high productivity bisecting the LEP along the M1 corridor.
- 2.28 Gedling, Newark and Sherwood and Bassetlaw through which the A614/A6097 route traverses have lower productivity levels than elsewhere in the LEP, highlighting the importance of improving interconnectivity with surrounding local authorities. The A6097 which connects Newark and Sherwood with Rushcliffe presents an opportunity for Newark and Sherwood to benefit from the spill over effects of highly productive jobs in this district.

<sup>16</sup> D2N2 LEP (2019) Local Industrial Strategy Evidence Base. Based on statistics from the BRES.

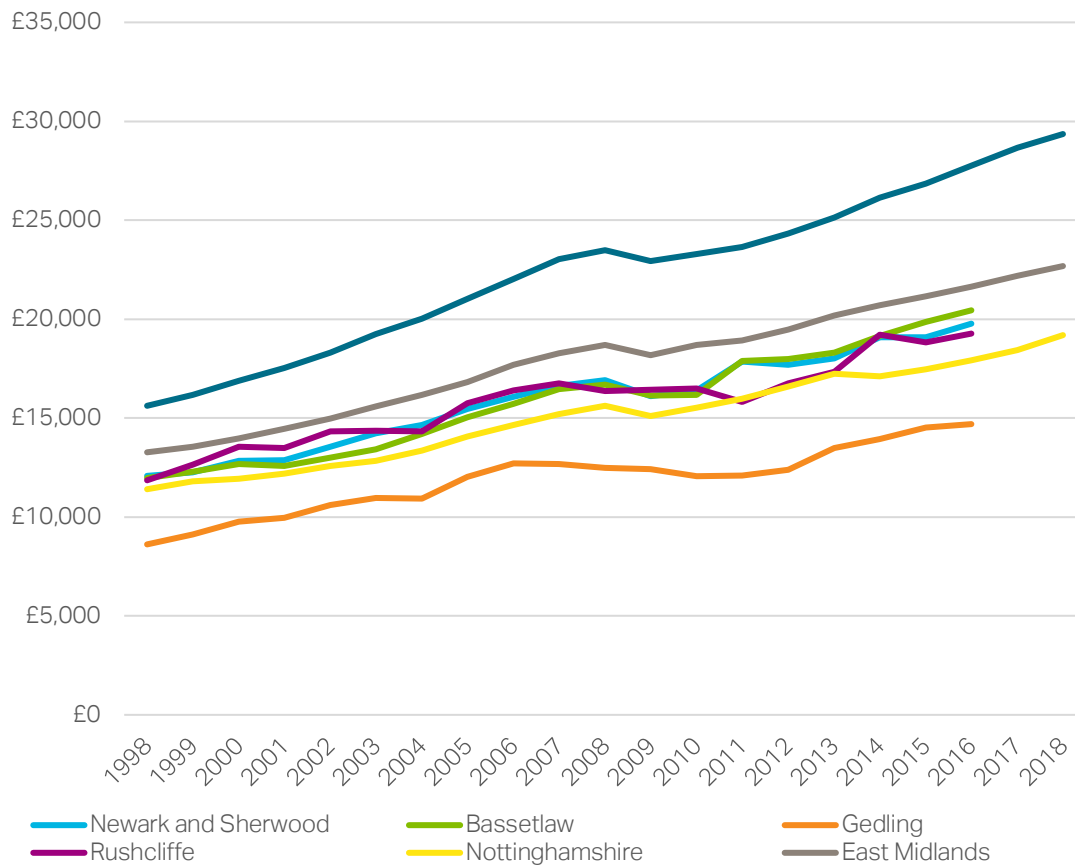
**Figure 2-6 GVA per Full-Time Equivalent Employment within D2N2 LEP**



Source: D2N2 LEP (2019) Local Industrial Strategy Evidence Base. Based on statistics from the BRES.

- 2.29 The high proportion of lower skill jobs in Newark and Sherwood is consistent with the district's lagging productivity. The local authorities adjacent to the Scheme all have similar, if not marginally higher levels of productivity to the Nottinghamshire average with the exception of Gedling which is about £3,300 lower when measured as GVA per head.
- 2.30 In Figure 2-7 it can be observed that productivity in all geographies has been diverging from the national productivity figures since 1998 with this gap increasing over time. It should be noted that the national figure for GVA per head is heavily distorted by highly productive individuals and companies in the England's major cities, especially London. As of 2016, GVA per head in Newark and Sherwood was £19,200 per year, a total of £8,600 less than the £27,800 national productivity figure in the same year. In 1998, the gap in productivity per worker between England and Newark and Sherwood stood at only £3,500 per year.

**Figure 2-7 GVA per head**



Sources: Local authority level – ONS (2017) Regional gross value added (balanced by local authority in the UK. Other geographies – ONS (2019) Regional gross value added (balanced) per head and income components,

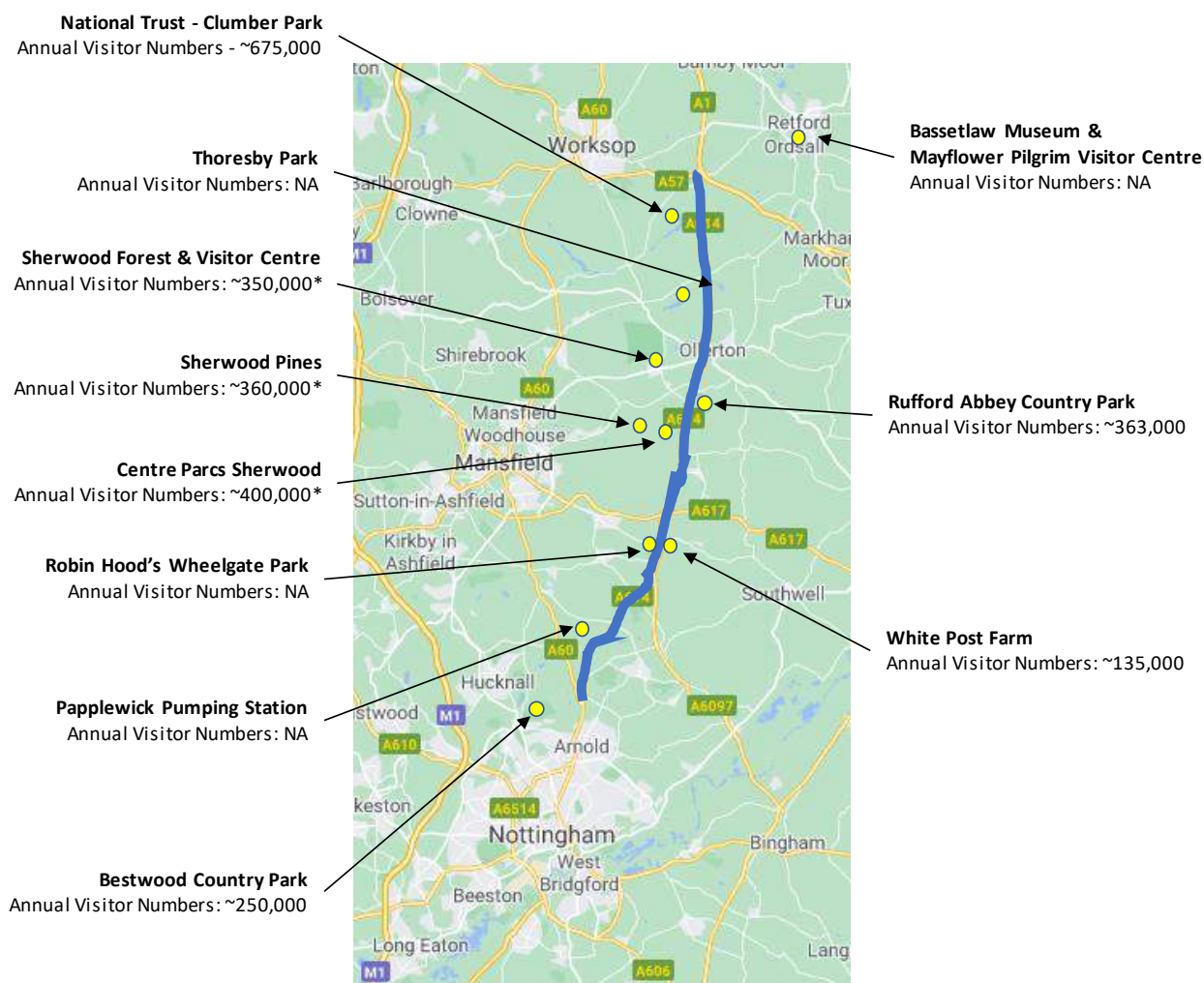
Notes: GVA per head data is only available at a local authority level up until 2016. Due to no specific data for Nottinghamshire, an estimation has been calculated by averaging GVA per head in the NUTS3 areas 'North Nottinghamshire' and 'South Nottinghamshire'. This therefore excludes the city of Nottingham itself.

## Tourism

2.31 Newark and Sherwood has a strong tourism sector with attractions such as Clumber Park (National Trust), Rufford Abbey, Center Parcs Sherwood Forest, Sherwood Pines Forest Park, Go Ape and Robin Hood’s Wheelgate Family Park all drawing in large numbers of tourists. According to the Newark and Sherwood tourism volume and value data<sup>17</sup>, 4.5 million visitors made the trip to the area in 2019 with Sherwood Forest being of major appeal. The tourism industry is a major economic benefit to the local area, not just as a source of employment, but also because those who spend money on these attractions often originate from outside of the local area, providing an injection of finance to the local economy. The location of key tourism attractions along the A614 corridor is presented in Figure 2-8.

<sup>17</sup> Newark and Sherwood District Council (2020) NSDC Tourism Strategy 2020-23. Available at: <https://democracy.newark-sherwooddc.gov.uk/documents/s8317/09.09.20%20-%20Forest%20Corner%20Masterplan%20Consultation%20APPENDIX%20C.pdf>

**Figure 2-8 Key tourism attractions along the A614 corridor**



\*Separating out "Sherwood Forest" visitor numbers is difficult from information available online. Likely to be considerable overlap between numbers given.

Source: Nottinghamshire County Council (2020)

2.32 According to ONS definitions of the tourism industry<sup>18</sup> the size of the sector in Newark and Sherwood has grown in recent years. Business Counts data<sup>19</sup> shows that total number of tourism businesses has grown from 435 in 2010 to 490 in 2019. The Business Register and Employment Survey (BRES) provides data on the number of employees working in the tourism sector between 2015 and 2018. During this time period, there was an approximate increase in the number of tourism related jobs from 6,000 to 8,000. The current 8,000 employees in the sector account for as much as 15.7% of the workforce in Newark and Sherwood far exceeding the 9.3% seen across Nottinghamshire as a whole and the national average of 9.6%<sup>20</sup>.

2.33 Around a quarter of the tourism jobs in Newark and Sherwood are at holiday centres and villages, largely driven by Center Parcs Sherwood Forest and the Center Parcs Head Office in Ollerton. Newark and Sherwood's ability to attract tourists to stay for multiple days at places like Center Parcs and Sherwood Forest helps to support supply chain

<sup>18</sup> ONS (2016) Workers in the tourism sector: examining their private pension savings, Great Britain, July 2012 to June 2014. Annex A: Standard Industrial Classification definitions for the tourism industries

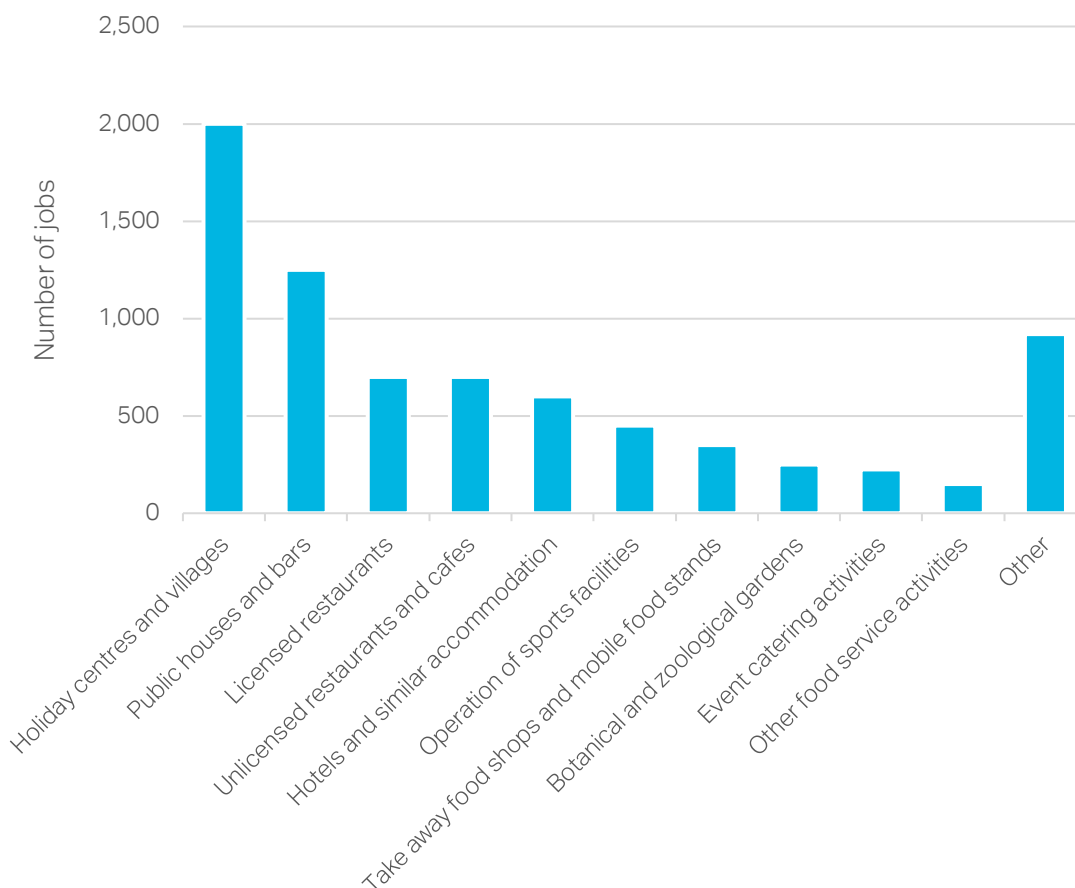
<sup>19</sup> ONS (2019) UK Business Counts

<sup>20</sup> ONS (2019) Business Register and Employment Survey

businesses. For example, the second and third largest source of employment in the district is at public houses and bars and at licensed restaurants. According to Business Counts data by the ONS, there are approximately 100 public house and bar businesses located within the local authority and 50 licensed restaurant businesses.

2.34 A full breakdown of tourism related employment in Newark and Sherwood is provided in Figure 2-9.

**Figure 2-9 Breakdown of tourism jobs in Newark and Sherwood**



Source: ONS (2019) Business Register and Employment Survey



## Deprivation

2.35 The English Indices of Deprivation<sup>21</sup>, produced by the Ministry of Housing, Community and Local Government (MHCLG) is a widely used measure of the level of deprivation. The English Indices of Deprivation provides an overall deprivation score (the Index of Multiple Deprivation, IMD) by Lower Layer Super Output Area (LSOA), building upon a series of domains and sub-domains. These statistics provide a measure of the 'relative deprivation' in each LSOA but are not necessarily reflective of the areas' affluence. As such, it is important to recognise that not every person in a highly deprived area will themselves be deprived and likewise, that there will be some people who consider themselves deprived living within what are scored to be the least deprived areas.

2.36 The seven sub-domains contribute toward the IMD are as follows:

- Income
- Employment
- Education, Skills & Training
- Health Deprivation & Disability
- Crime & Disorder
- Barriers to Housing & Services
- Living Environment.

2.37 The levels of deprivation experienced across the route corridor vary considerably throughout the different LSOAs. In general, more rural areas along the route tend to have lower levels of deprivation. As a consequence, most of the LSOAs adjacent to the A614 south of Ollerton and the whole of the A6097 have low or moderate deprivation. LSOAs close to or incorporating parts of Calverton, Lowdham and East Bridgford are scored by the IMD amongst the top 10% least deprived areas in the country.

2.38 A few exceptions can be seen at Bilsthorpe, Blidworth and parts of Gedling to the south where the A614 converges with the A60. LSOAs in these areas tend to be within the 20%-30% or 30%-40% most deprived local authorities in the country. The highest levels of deprivation along the route can be seen in Ollerton where one of the LSOAs is considered within the top 10% most deprived areas in the country. This LSOA is one of only three ranked within the top 10% in Newark and Sherwood with the other two located in Newark-on-Trent.

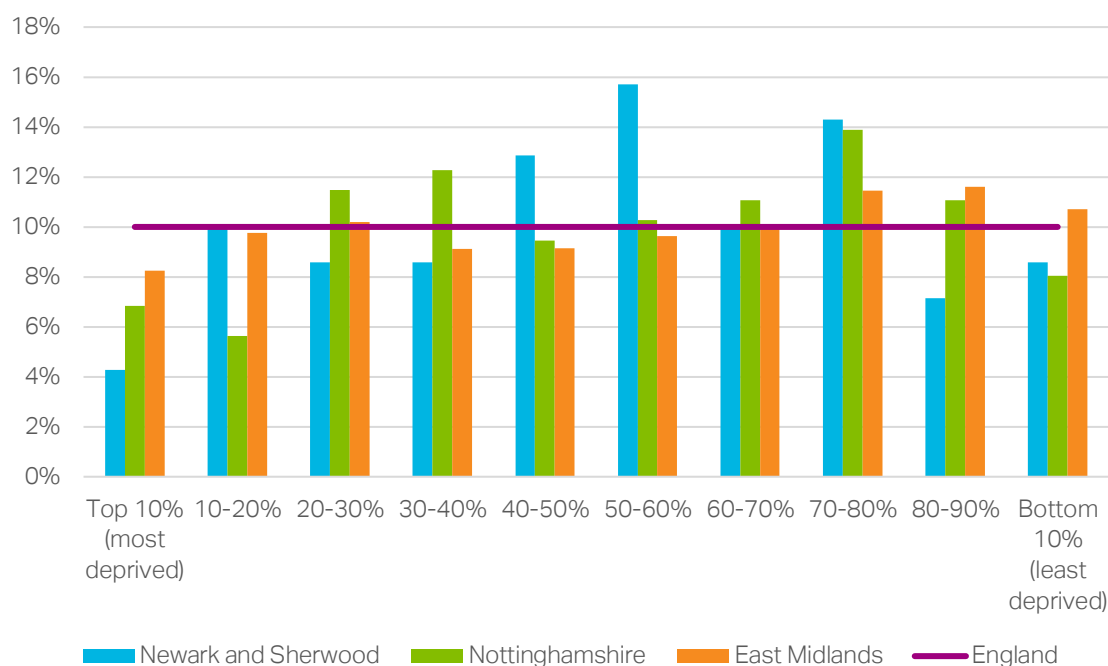
2.39 Of the four local authorities which the route corridor passes through, Bassetlaw is overall assessed as having the highest level of deprivation, scoring as the 108<sup>th</sup> most deprived local authority out of the 317 in England. Newark and Sherwood and Gedling are ranked as 148<sup>th</sup> and 207<sup>th</sup> meaning both areas are ranked mid-table. Rushcliffe meanwhile scores extremely low on the IMD ranking, scoring 314<sup>th</sup> making it the 4<sup>th</sup> least deprived local authority in England.

2.40 A full breakdown of the LSOAs in Newark and Sherwood as well as other geographies for comparison, can be seen in Figure 2-10. It shows the diversity of different areas in Newark and Sherwood, with multiple LSOAs considered within each decile.

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<sup>21</sup> Department for Communities and Local Government (DCLG), (2019); English Indices of Deprivation 2019.

**Figure 2-10 Index of Multiple Deprivation**



Source: MHCLG (2019) English Indices of Multiple Deprivation

## Housing

2.41 The 2019 Newark and Sherwood Amended Core Strategy states that the district's Objectively Assessed Housing Need (OAN) is a minimum of 9,090 new dwellings between the 2013 to 2033 plan period, translating to 478 dwellings per year. Data from MHCLG<sup>22</sup> shows that over the course of 2018, this was on target, with around 500 new dwellings completed in Newark and Sherwood albeit fewer houses were built in the years previous. In total, the district contributed 20.7% of the 2,410 new dwellings completed in Nottinghamshire in the same year highlighting its importance to the county's housing market.

2.42 In the following years after the 2008/9 sub-prime mortgage crisis the number of new completions largely stagnated across all geographies. Subsequently, between 2013 and 2018 the total number of new build dwellings has substantially increased. In particular, the number of completions in Rushcliffe in 2018 was almost triple the five-year average number of completions between the start of 2010 and the end of 2014 (650 compared with 238). Meanwhile, Newark and Sherwood has also seen a significant increase in house building, with double the number of completions in 2018 than the average between 2010 and 2014 (500 new dwellings completed against 248).

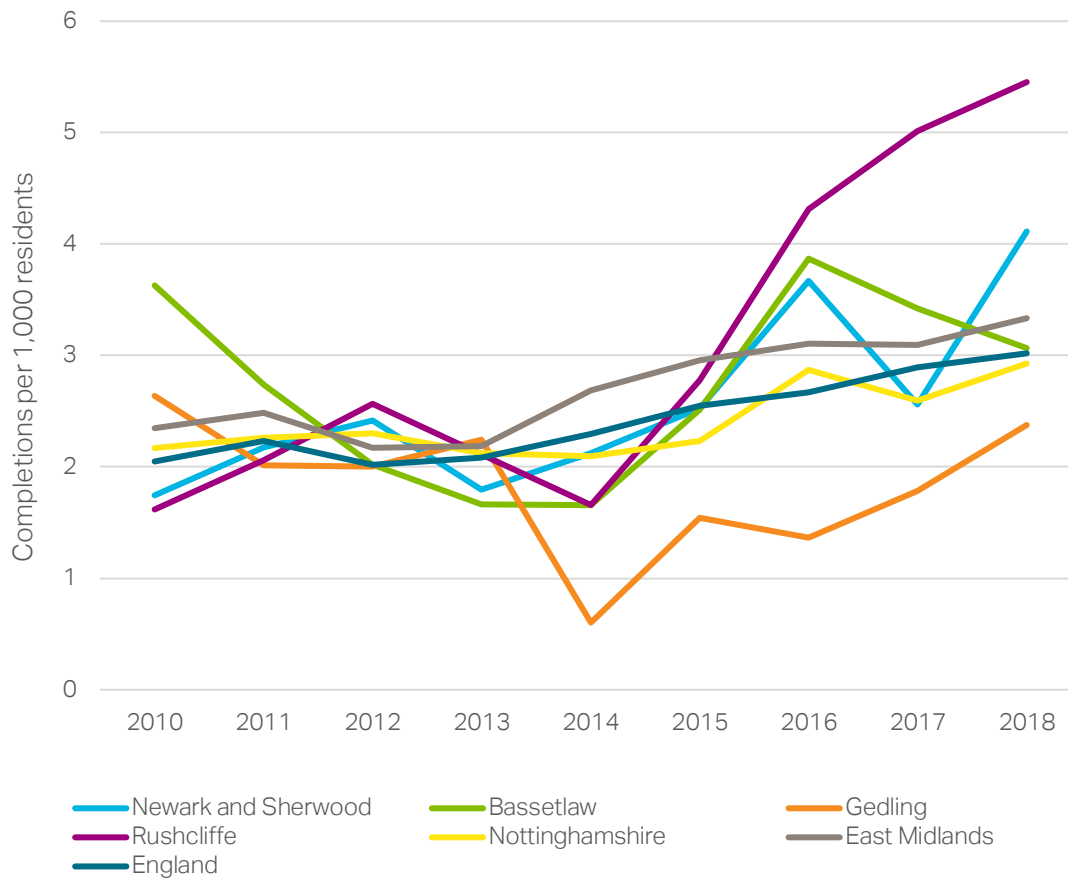
2.43 The East Midlands has been a target for new residential developments at a national level with the number of new build dwellings completed per 1,000 residents being consistently higher than the national figure. Despite this, figures for Nottinghamshire have been generally lower than the national average since 2013, suggesting that the growth has been located elsewhere in the East Midlands region. Newark and Sherwood's high numbers of new build dwellings completed in recent years highlight the district's increasingly important contribution to the housing supply at a county level. Figure 2-11

<sup>22</sup> MHCLG (2020) Live tables on house building: new build dwellings Table 253



provides an overall picture of the number of dwelling completions, weighted for population the population of each area.

**Figure 2-11 Yearly new build dwellings completed per 1,000 residents**



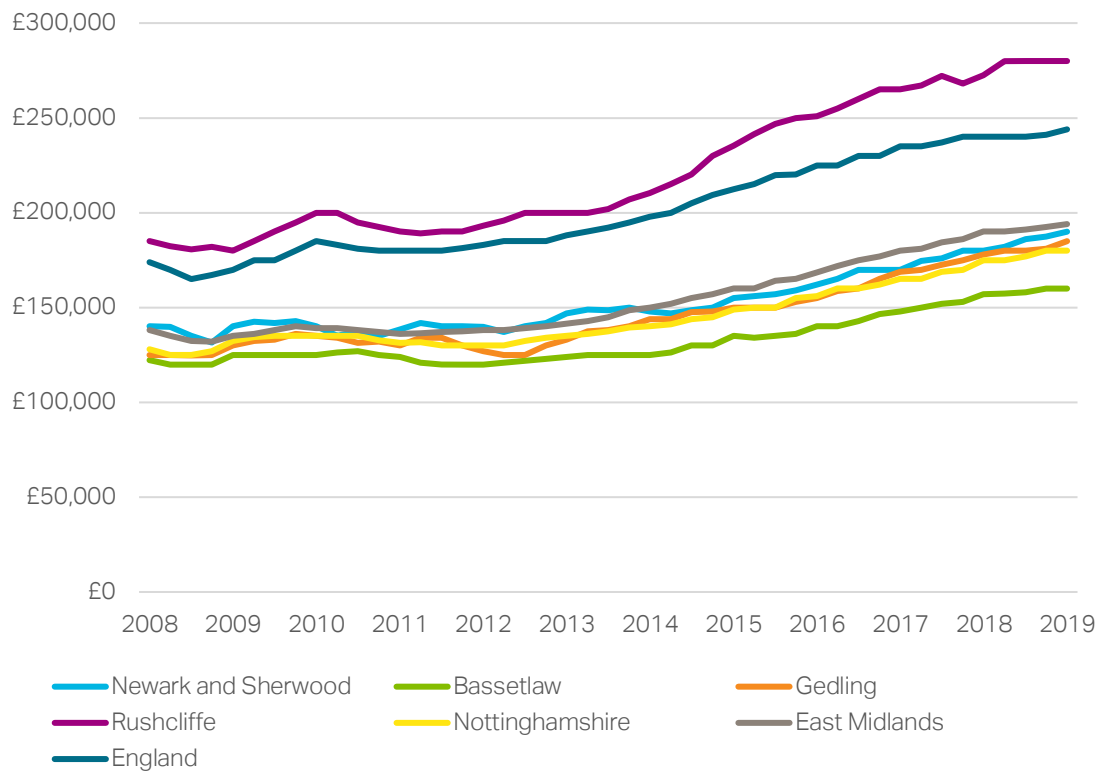
Source: MHCLG (2020) Live tables on house building: new build dwellings Table 253. ONS (2020) Population Estimates

Note: Data for Rushcliffe in 2009 is not available so the Nottinghamshire figure is calculated based on the combined remaining local authorities in that year.

2.44 As with the number of new dwellings completed, house prices also generally stagnated in the years following the 2008 financial crash. Between 2013 and 2019 however, the median price paid for a house has increased by 29.7% at a national level. Although house prices in the East Midlands, Nottinghamshire and Newark and Sherwood have also increased, rapid growth elsewhere in the country (in particular London) has meant there has not been a convergence with house prices in these areas and national median house prices and the nominal difference in house prices are increasing.

2.45 As of December 2019, the median house price in England was £244,000; approximately £50,000 more than the £194,000 median price experienced in the East Midlands and considerably also considerably higher than the £180,000 paid in Nottinghamshire and £190,000 paid in Newark and Sherwood. Figure 2-12 provides a visualisation of how house prices have changed over the last 10 years.

**Figure 2-12 Median house prices**



Source: ONS (2020) Median house prices for administrative geographies: House Price Statistics for Small Areas (HPSSA)

## 3. Opportunities for Growth

- 3.1 Building on the Local Economic Profile, this section focuses on the key opportunities for growth at regional and sub regional level as well as specific opportunities within close proximity to the route corridor. In doing so, it helps to assess how the Scheme will help to remove the hinderances along the route and facilitate wider economic growth.
- 3.2 Firstly, this section focuses on the opportunities for strategic growth with reference to the Midlands Engine and Midlands Connect Strategies for the wider region as well as individual strategies within the Derby, Derbyshire, Nottingham, Nottinghamshire (D2N2) Local Enterprise Partnership (LEP). It subsequently analyses potential opportunities for the tourism sector as well as opportunities for local development close to the route corridor.

### Strategic growth within the wider region

- 3.3 The term 'Midlands Engine' has been coined as a demonstration of the government's commitment to making the Midlands a powerful source of economic growth in the heart of the UK economy. Building on the region's already growing economy, the 2017 Midlands Engine Strategy<sup>23</sup> outlines plans to invest a further £392 million in the Midlands through the Local Growth Fund, on top of the £1.5 billion Local Growth Fund investments which have been previously announced. This funding allocation has been specifically designed to be allocated to projects that improve transport connections between the region's towns and cities as well as connecting isolated areas to the transport network.
- 3.4 Improving connectivity in order to increase productivity is one of the Midland's Engine key objectives. Investments in local transport connections are designed to address the fragmentation of the Midlands' economy which is fairly dependent on the region's 11 cities. The funding will target poorly connected areas which are not able to fully synergise with the region's productive areas, allowing businesses and people to make the most of their strategic position in the centre of the country. Improving transport connectivity could allow for a greater spillover of skills from highly productive areas to less productive areas as well as allowing for increased trade and specialisation throughout the region, ultimately helping to uplift productivity in more isolated areas. These objectives align well with the strategic case of the A614/A6097 Scheme with the route having an important role in regional connectivity from Nottingham to more rural areas.
- 3.5 Midlands Connect, the sub-national body responsible for safe and efficient transportation in the Midlands, has been invited by Midlands Engine to develop proposals for improving connectivity across important corridors in the region. The Midlands Connect Strategy 2017<sup>24</sup> outlines the key objectives by which it will seek to develop proposals. The headline target outcomes of this strategy, provided in Figure 3-1 shows a clear focus on improving the Midlands connectivity not just within a global and national context, but also at a local level. To achieve this objective, the Strategy highlights the need to develop a Major Roads Network (MRN).
- 3.6 It is planned that local authorities will be able to secure new investment in their major road network in order to fully embrace future economic opportunities of improved

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<sup>23</sup> Midlands Engine Strategy 2017

<sup>24</sup> Midlands Connect (2017) Midlands Connect Strategy: Powering the Midlands Engine

connectivity<sup>25</sup>. A partnership between Midlands Connect, the DfT, D2N2, Transport for the East Midlands (TfEM), Network Rail and HS2 Ltd. will make the case for early improvements to the A614 as part of the MRN. Other key Midlands Connect objectives for the East Midlands include improved access to East Midlands Airport and the new HS2 Hub Station at Toton as well as improved east-west connectivity<sup>26</sup>.

**Figure 3-1: Midlands Connect key objective outcomes**



Source: Midlands Connect (2017) Midlands Connect Strategy: Powering the Midlands Engine

3.7 In the Major Road Network and Large Local Majors priority scheme submission to the Department for Transport<sup>27</sup> by Midlands Connect in the Summer of 2019, junction improvements on the A614/A6097 corridor were highlighted as a strategic priority. The six junction improvements were identified as extremely important in improving both the east-west connectivity between Worksop, Mansfield and Newark as well as the north-south connectivity between Nottingham, Worksop and the M1. In doing so, the scheme

<sup>25</sup> Midlands Connect (2018) Our Routes Our Growth

<sup>26</sup> Midlands Connect (2017) A Shared Vision for The East Midlands

<sup>27</sup> Midlands Connect (2019) The Major Road Network and Large Local Majors. Priority Scheme Submission to the Department for Transport

improvements are able to improve access to jobs for local people living and working in and between these towns and cities as well as allowing easy access to new employment sites such as at Thoresby Colliery and Bingham. The case is also made that the route upgrades will mitigate the expected increases in traffic generated by new housing developments along the route, reducing congestion in the area.

- 3.8 According to the Midlands Connect Strategy, for every £1 invested in the Strategy an additional £2 of economic benefit will be delivered. It is stated that the strategy will boost the regional economy by £5 billion per annum by 2040 through the creation of more than 300,000 new jobs.
- 3.9 Sub-regionally, the whole of the A614/A6097 corridor lies within the area boundaries of the D2N2 LEP. The purpose of a LEP is to provide a partnership between local authorities and businesses in order to decide local economic priorities and undertake activities which drive economic growth and create local jobs.
- 3.10 The D2N2 Strategic Economic Plan<sup>28</sup> establishes a framework for identifying future investment priorities as well as outlining the key actions which will facilitate it's vision for 2030. The plan's key focus is on driving inclusive growth through innovation, with an emphasis on improving productivity and growing businesses, delivering skills and knowledge for the future and enhancing the quality of the place where people live and work.
- 3.11 The Strategic Economic Plan has seen £257 million of transport infrastructure investment since 2013, with the goal of opening up key enterprise sites within Derby and Nottingham. Continued investment from the LEP as well as the Midlands Engine's investments will help to future proof the region and encourage interconnectivity. The strategic case for the Scheme aligns well with D2N2 LEP's objectives to improve connectivity and to unlock potential areas for growth. The LEP believes that a high performing transportation network will benefit D2N2's range of high performing industries which are dependent on the transport network such as in the manufacturing, logistics and extractive sectors. These sectors are shown in the Local Economic Profile to also be important contributors to businesses located within two miles of the route, with a high number of manufacturing and trade businesses in particular.
- 3.12 Among other transport projects, the A614/A6097 corridor is identified as one of the priorities for highway investment. As also identified in D2N2 priorities, Nottinghamshire County Council seeks continued investment in the major road network to improve connectivity around the LEP for more local trips. Greater access to Nottinghamshire's neighbouring towns and cities such as Nottingham, Derby, Leicester, Sheffield and Doncaster will help to propagate economic growth in the likes of Retford, Mansfield and Newark-on-Trent by allowing for synergies between these urban areas.

## The visitor economy

- 3.13 The D2N2 visitor economy is also identified in the D2N2 Strategic Economic Plan as a majorly important provider of jobs and income, contributing around £6bn to the East Midlands economy. VisitBritain/ VisitEngland predict that inbound tourism to Britain is due to grow by 3.8% every year until 2025, demonstrating the region's outstanding natural, cultural and sporting assets.

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<sup>28</sup> D2N2 (2019) Vision 2030: Strategic Economic Plan

3.14 Nottinghamshire County Council’s Place Departmental Strategy 2019 to 2021<sup>29</sup> sets out the Council’s short term actions and longer term vision for the future of Nottinghamshire, focused on improved quality of life for its residents and becoming an increasingly better place to start and grow businesses. The strategy outlines the diverse economic landscape across the county, with areas in the south of the county such as Rushcliffe and Gedling having considerably higher productivity, qualification levels, unemployment and lower levels of deprivation.

The Nottinghamshire Visitor Economy Strategy 2019 to 2029<sup>30</sup> details Nottinghamshire’s good position to grow tourism by volume and value, creating both jobs and economic growth in a sustainable way. Nottinghamshire County Council’s goals for 2023 and 2029 detailed in the Strategy are summarised in Table 3-1.

**Table 3-1 Nottinghamshire Visitor Economy Strategy - Goals for 2023 and 2029**

Goals for 2023	Goals for 2029
1 million additional visitors	5 million additional visitors
742 additional FTE jobs	2,900 additional FTE jobs
£57.5 million additional economic impact (direct and indirect)	£340 million additional economic impact (direct and indirect)
£18 million additional GVA	£80 million additional GVA

Source: Nottinghamshire County Council (2019) Visitor Economy Strategy 2019 to 2029

3.15 Strengthening the sense of place for visitors along the A614 is discussed as a key development project within the Visitor Economy Strategy. The use of latest technology to create high quality and well-signed visitor routes as well as visitor friendly bus lanes between Nottingham and Sherwood Forest will be encouraged. This highlights the important role the route could play in helping to support the sector, which as discussed in the Local Economic Profile, plays an important role in driving the local economy.

3.16 Sherwood Forest’s connection with the legendary Robin Hood is a major attraction to the area, with key tourism assets such as the Sherwood Forest Visitor Centre, the Major Oak (the biggest oak tree in Britain), and Robin Hood’s Wheelgate Family Park being specifically themed to capitalise on this. The Visitor Economy Strategy specifically targets giving ‘Robin Hood and Sherwood a much stronger visibility across the county’ as well as ‘delivering more things to do in the countryside that are branded and connected to the Sherwood and Robin Hood theme’ and the areas key tourism assets will benefit from this emphasis.

3.17 In support of these objectives, the Forest Corner Masterplan<sup>31</sup> has been created to establish a vision and list of options for development close to Sherwood Forest, the Visitor Centre, and the village of Edwinstowe. These options include the expansion of Sherwood Corner such that it offers new facilities, events and attractions which will increase the area’s appeal. Other options include the possibility of increased sports offering close to the forest, more open space for wildlife and recreation, food and beverage enhancements with a focus on local produce, as well as new cycle paths and parking spaces to improve connectivity for residents and visitors.

<sup>29</sup> Nottinghamshire County Council (2019) Place Departmental Strategy 2019 to 2021

<sup>30</sup> Nottinghamshire County Council (2019) Visitor Economy Strategy 2019 to 2029

<sup>31</sup> Leonard Design Architects (2020) Forest Corner Masterplan

3.18 With 4.5 million tourists making a trip to Newark and Sherwood in 2019<sup>32</sup>, the Newark and Sherwood Core Strategy<sup>33</sup> emphasises its commitment strengthening of the local tourism sector by supporting the numerous recreation attractions across the district. The tourism sector features in the 2013 Newark and Sherwood Allocations & Development Management Plan<sup>34</sup> with a policy to build a new Sherwood Forest Visitor Centre at Edwinstowe, a project which is now successfully completed and operational.

## Opportunities for local development

3.19 As stated in the description of the study area, although the A614/A6097 junction improvements are all located within Newark and Sherwood, a considerable proportion of the route corridor passes through Bassetlaw and Gedling, with a small section of the A6097 also converging with the A46 in Rushcliffe near Bingham. Each of these local authorities face the challenge of ambitious housing targets, which will influence the economic landscape of the route corridor.

3.20 A common theme across these districts' Local Plans is the need to provide residential developments which create balanced communities of varying types sizes and tenures and maintenance of local services and facilities. Without intervention on the A614/A6097, developments to provide housing and employment land may be limited - particularly at the Thoresby Colliery and Teal Close developments, both of which have planning constraints which are dependent on specific road improvements included within the Scheme. Evidence from consultation conducted as part of this study also indicates the viability of other projects along the corridor are weakened by congestion which impacts on demand and therefore sale value of residential properties and employment space<sup>35</sup>.

3.21 As detailed in the Newark and Sherwood Core Strategy<sup>36</sup>, Ollerton's role as the main service centre within the Sherwood area will be reinforced by the provision of new housing, employment opportunities which will also help to regenerate the town. The nearby development of Thoresby Colliery will provide an additional 800 residential properties and approximately 3.2 hectares of employment land close to the town subject to improvements on Ollerton roundabout. The Land North of Petersmith Drive development is also expected to provide 305 residential properties in Ollerton.

3.22 The villages of Lowdham, Bilsthorpe and Farnsfield, all adjacent to the route corridor, are designated in the Newark and Sherwood 2019 Core Strategy as Principal Villages for their local area. This designation outlines the continued importance of these villages in providing a good supply of day to day facilities for local people in order to complement the role of larger service centres, as well as a source of local employment. Reduced congestion along the A614/A6097 corridor, as well as the developments dependent on

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<sup>32</sup> Newark and Sherwood District Council (2020) NSDC Tourism Strategy 2020-23. Available at: <https://democracy.newark-sherwooddc.gov.uk/documents/s8317/09.09.20%20-%20Forest%20Corner%20Masterplan%20Consultation%20APPENDIX%20C.pdf>

<sup>33</sup> Newark and Sherwood District Council (2019) Review of the Newark & Sherwood Local Development Framework Core Strategy & Allocations: Amended Core Strategy Adopted March 2019.

<sup>34</sup> Newark and Sherwood District Council (2013) Newark and Sherwood Local Development Framework. Allocations & Development Management Plan Document

<sup>35</sup> Consultations with major businesses in the area have supported this assertion. This includes identified problems with obtaining planning permission for an expanded site for one of the businesses if Mickledale Lane junction is not improved. Planning restrictions as a result of congestion along the route are also reported to inhibit the financial viability of developments and affecting housing values through reduced demand for housing as a result of congestion.

<sup>36</sup> Newark and Sherwood District Council (2019) Review of the Newark & Sherwood Local Development Framework Core Strategy & Allocations: Amended Core Strategy Adopted March 2019.



the route upgrades could significantly improve these villages potential ability to cater for the surrounding rural areas.

- 3.23 The Newark and Sherwood Core Strategy presents the more rural western part of the district as suffering from poor transport connectivity despite the A614/A6097 bisecting the area. The strategy states that improvements to the A614/A6075/A616 Ollerton Roundabout are required to accommodate any additional growth in the north west of the district, highlighting how the route is potentially stifling economic development in the area.
- 3.24 At the northern end of the corridor, Bassetlaw District Council has made contributions towards the improvements at the A614 Blyth Road/A57/A1 Roundabout, enabling access to local employment in Worksop and Retford as well as easing flow to larger cities such as Doncaster and Sheffield from the corridor. Plans for the Bassetlaw Garden Village were also identified in the Local Plan<sup>37</sup>, consisting of at least 750 dwellings and 15 hectares of employment land during the Local Plan period to 2037. Although the site of the Garden Village is still to be confirmed, several potential sites have been identified close to the northern end of the A614 at Gamston, Bevercotes and Morton<sup>38</sup> which could also benefit from the A614 junction upgrades for southerly journeys.
- 3.25 The Greater Nottingham Aligned Core Strategy<sup>39</sup> highlights the important role the A614 plays as the main northern route from Nottingham towards the A1 through Gedling. Although transport links between Gedling and Nottingham are identified as strong, links between Gedling and the different settlements in and around the conurbation are poorer with some more rural settlements being relatively isolated. The A60 and the A614 are the only two major roads in the borough.
- 3.26 The more recent 2018 Gedling Borough Local Planning Document<sup>40</sup> provides details of local transport scheme improvements. Although none of the upgrades as part of the Scheme to the A614 are mentioned within Gedling Borough, there are various route improvements to the A60 and A612 included as part of the Local Plan.
- 3.27 There are several major planning applications for large scale housing developments in Gedling close to the A614/A6097 corridor, including 650 residential properties at Calverton, 830 residential properties at Teal Close (subject to junction improvements at Lowdham Roundabout) and 1,050 residential dwellings at Gedling Colliery. A full breakdown of major planning applications close to the route corridor is provided in Table 3-2.

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<sup>37</sup> Bassetlaw District Council (2020) Draft Bassetlaw Part 1 Local Plan

<sup>38</sup> Bassetlaw District Council (2019) Possible Garden Village Sites: Preliminary Accessibility Appraisal

<sup>39</sup> Greater Nottingham Plan Partnership (2014) Broxtowe Borough, Gedling Borough, Nottingham City Aligned Core Strategies

<sup>40</sup> Gedling Borough Council (2018) Local Planning Document Part 2 Local Plan



**Table 3-2 Major developments along the A614/A6097 corridor**

<b>Name of Development</b>	<b>Local Authority</b>	<b>Number of dwellings</b>	<b>Other notable provisions</b>
Bassetlaw Garden Village	Bassetlaw	750	15 hectares of employment land
Land North of Petersmith Drive	Newark and Sherwood	305	None
Thoresby Colliery	Newark and Sherwood	800	3.2 hectares of employment land, country park, primary school, two priority junctions on A6075 Ollerton Road
Land East of Eakring Road	Newark and Sherwood	85	None
Kirklington Road	Newark and Sherwood	136	None
Oldbridge Way	Newark and Sherwood	113	None
Calverton	Gedling	650	None
Teal Close	Gedling	830	1.8 hectares employment land, local centre and primary school
Gedling Colliery	Gedling	1050	Local centre with retail units, health care and primary school
RAF Newton	Rushcliffe	500	2.6 hectares employment land
Bingham	Rushcliffe	1000	5.5 hectares of employment land

Source: Nottinghamshire County Council (2020)

## 4. Assessment of Wider Economic Benefits

- 4.1 Improvements to the transport network influence behaviour and patterns of economic activity. The majority of such impacts are captured by the transport user benefits of the scheme, which arise through reduced costs of travel for different users across different sectors. However, where market failures exist which stop markets operating efficiently, transport interventions can give rise to wider economic impacts in addition to the transport benefits.
- 4.2 The transport impacts of the Scheme are presented in the Transport Economic Appraisal Report<sup>41</sup>. In addition to the transport impacts, the Scheme will support additional benefits by relieving constraints on development and unlocking property investment. These benefits are assessed in terms of land value uplift (LVU) which will contribute to the economic case of the Scheme OBC. In addition, this section presents a qualitative assessment of scheme benefits for businesses and key tourism assets along the route corridor.

### Dependent Development & Land Value Uplift

- 4.3 LVU<sup>42</sup> is a technique used to capture the benefit which arises from new development which would not occur, or would occur in a reduced capacity, without the Scheme. These new developments can be considered to be 'dependent' as per the Department for Transport's (DfT) Transport Appraisal Guidance (TAG)<sup>43</sup>. The quantum of dependent development is assessed and presented in the Transport Economic Appraisal Report<sup>44</sup>. A summary of housing and employment land on dependent sites which will be enabled by the Scheme is presented in Table 4-1.
- 4.4 The scale of housing and employment land which is dependent on the Scheme was determined by planning conditions which are restricting the developments coming forward in full. Some development on dependent sites will come forward irrespective of whether the Scheme is progressed.
- 4.5 LVU is calculated for residential, B1 (business<sup>45</sup>) and B2 (general industrial) employment uses as MHCLG does not provide land value data for the other uses (land values for these uses are presented in Appendix A). Therefore, for the employment land element only the quantum of commercial (B1 and B2) land is presented in Table 4-1, however small amounts of other uses (such as community and social infrastructure) will also be provided on the sites.

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<sup>41</sup> AECOM (November 2020) Transport Economic Appraisal Report

<sup>42</sup> LVU associated with dependent development arising as a consequence of a transport scheme can be used as a proxy for welfare benefits. The approach to estimating LVU is set out in the Department for Communities and Local Government's (DCLG) appraisal guidance.

<sup>43</sup> Department for Transport (May 2018), TAG Unit A2.2 – Appraisal of Induced Investment Impacts

<sup>44</sup> AECOM (November 2020) Transport Economic Appraisal Report

<sup>45</sup> Business uses including offices, research and development, and industrial processes.

**Table 4-1 Quantum of development by site: grand total and total which is dependent**

Development site	Grand total homes	Dependent homes	Grand total employment land (Ha)		Dependent employment land (Ha)	
			B1	B2	B1	B2
Thoresby Colliery (Newark and Sherwood)	800	650	1.9	1.4	1.4	1.0
Teal Close (Gedling)	830	590	0.4	1.4	-	-
<b>Total</b>	<b>1630</b>	<b>1,240</b>	<b>2.3</b>	<b>2.8</b>	<b>1.4</b>	<b>1.0</b>

4.6 The delivery phasing for the two dependent development sites is described further in the Transport Economic Appraisal Report<sup>46</sup>. The analysis assumes even delivery between opening year and completion.<sup>47</sup>

4.7 Two scenarios have been considered with regards to dependent development:

- the Reference Case, which is based on the number of homes and employment land expected to come forward without the proposed Scheme; and
- the Intervention Case, which is based on the number of homes and employment space which is expected to come forward with the proposed Scheme in place.

4.8 The scale of development likely to come forward in the Reference Case and the Intervention Case at each site is presented in Table 4-2 and Table 4-3. Net additional effects are presented at a sub-regional level as it is considered that at national level there is 100% displacement. Detailed assumptions are set out in Appendix A.

4.9 At Thoresby Colliery, the estimated net additional development, accounting for displacement and deadweight, is 11.5ha (net) of residential and 1.5ha (net) of commercial development land.

**Table 4-2 Dependent development effects at Thoresby Colliery: gross and net additional**

	Residential		Commercial: B1		Commercial: B2	
	Intervention Case	Reference Case	Intervention Case	Reference Case	Intervention Case	Reference Case
Gross Direct Effects (ha)	22.9	4.3	1.9	0.5	1.4	0.3
Net Local Direct Effects (ha) (post-displacement)	14.2	2.7	1.1	0.3	0.8	0.2
Net Additional Effects of the Scheme (ha)	11.5		0.9		0.6	

Source: AECOM calculation 2020

<sup>46</sup> AECOM (2020) Transport Economic Appraisal Report

<sup>47</sup> Thoresby Colliery: construction to commence in 2020 at a build out rate of 50 -60 houses per annum; Teal Close assumed build out of 60 per annum from 2019 onwards.

4.10 At Teal Close, the estimated net additional development, accounting for displacement and deadweight, is 8.9ha (net) of residential land.

**Table 4-3 Dependent development effects at Teal Close: gross and net additional**

	Residential	
	Intervention Case	Reference Case
Gross Direct Effects (ha)	23.7	9.3
Net Local Direct Effects (ha) (post-displacement)	14.7	5.8
Net Additional Effects of the Scheme (ha)	8.9	

Source: AECOM calculation 2020

4.11 The LVU associated with the development is presented in Table 4-4. The Scheme is estimated to deliver a present value of benefits of £21.5m gross LVU and £13.3m net additional LVU. The methodology underpinning the assessment and the key assumptions are presented in Appendix A.

**Table 4-4 Land Value Uplift**

	Gross impact of Scheme	Net impact of Scheme
Residential Land Value Uplift	£21.0m	£13.0m
Commercial Land Value Uplift	£0.5m	£0.3m
<b>Total LVU</b>	<b>£21.5m</b>	<b>£13.3m</b>

Source: AECOM calculation 2020; Values at 2010 prices

### Sensitivity testing

4.12 The sensitivity tests demonstrate the impact of applying different land values and how they impact on LVU. The sensitivity scenarios were informed by a number of analyses, including:

- Comparison of MHCLG's residential and commercial land value benchmarks between Newark & Sherwood, Gedling and local authorities in Nottinghamshire;
- Comparison of residential sales values from Zoopla<sup>48</sup> between Newark & Sherwood, Gedling and local authorities in Nottinghamshire; and
- Comparison of industrial and office market rent and sales values from CoStar<sup>49</sup> between Newark & Sherwood, Gedling and surrounding local authorities.

4.13 On the basis of reviewed values, the identified sensitivity tests conducted include:

- ± 10% for the value of residential land;
- ± 10% for the value of B1 land, and
- ± 10% for the value of B2 land.

4.14 The results of the sensitivity testing are presented in Table 4-5. The tests show that if residential and commercial (B1 & B2) values are lower than the MHCLG area benchmark

<sup>48</sup> Zoopla (2020) House prices and values; Accessed September 2020.

<sup>49</sup> CoStar (2020) Custom Market Report, Accessed September 2020.

by 10%, the Scheme would deliver circa £12m in net additional LVU. Where values are higher than the MHCLG benchmark by +10% the net additional LVU would increase to £14.7m. These values compare to LVU of £13.3m based on MHCLG benchmark, as set out in Table 4-4.

**Table 4-5 Land Value Sensitivities Tests**

	Sensitivity test: Land value change	Gross impact of Scheme	Net impact of Scheme
Residential Land Value Uplift	High (+10%)	£23.1m	£14.3m
	Low (-10%)	£18.9m	£11.7m
Commercial Land Value Uplift	High (+10%)	£0.6m	£0.4m
	Low (-10%)	£0.5m	£0.3m
Total LVU	High	£23.7m	£14.7m
	Low	£19.4m	£12.0m

Source: AECOM calculation 2020; Values at 2010 prices

## External Land Amenity Value

- 4.15 LVU captures the net private benefits of the dependent development. In addition to this, the external costs and benefits of development can be captured in order to derive net social value. Land amenity values refer to the level of pleasantness of the area. A development can result in a loss or gain in land amenity value as a result of changes in the landscape. The approach to estimating external land amenity has followed TAG Unit 2.2 guidance<sup>50</sup> and DCLG guidance<sup>51</sup>.
- 4.16 At Thoresby Colliery, the development will take place on brownfield land and is anticipated to result in land amenity value gain. However, there is currently limited evidence available on the external amenity impact of development on brownfield land. As a conservative assumption and in line with the DCLG appraisal guide, it is assumed that the change in amenity value on the Thoresby Colliery site is zero.
- 4.17 At Teal Close, development will take place on agricultural land predominantly used to grow crops. This land is considered to have limited amenity value in terms of recreation or pleasantness of the area, and its agricultural uses are restricted to crops due history of site use for sewage sludge.<sup>52</sup> This type of land aligns with the definition for intensive agricultural land, with estimated land amenity value of £29,000 per hectare in perpetuity<sup>53</sup>. The delivery of net additional 8.9ha of residential development at Teal Close is therefore estimated to amount to an **amenity loss of £258,000** in present value (in 2010 prices).

<sup>50</sup> Department for Transport (May 2018), TAG Unit A2.2 – Appraisal of Induced Investment Impacts

<sup>51</sup> DCLG (2016) The DCLG Appraisal Guide

<sup>52</sup> Gedling Borough Council (2014) Application Number 2013/0545- Land off Teal Close Netherfield

<sup>53</sup> DfT (2020) TAG Workbook Valuing Dependent Development

## External Benefits from Affordable Housing

- 4.18 Another type of external benefits which are additional to private benefits captured by LVU are those arising through the provision of affordable housing.
- 4.19 Social housing delivers additional health benefits which measure the annual net savings on health costs due to the provision of affordable housing, which helps to alleviate overcrowding and rough sleeping. The methodology to calculate this benefit follows the MHCLG guidance, which suggests a £125 benefit per unit per annum (or £2,400 in present value terms over 30 years). It is assumed that this benefit has 0% displacement given the high demand for affordable housing.
- 4.20 It is estimated that the Scheme delivers a net additional £20,880 in external benefits associated with affordable housing (expressed as present value over a 30-year period).

## 5. Wider Non-monetised Impacts

5.1 The transport benefits and LVU capture the economic value of the impacts of the Scheme in terms of improved accessibility and housing development. However, they do not fully cover all long-term impacts of the Scheme on key assets and areas along the route. The following categories of impacts have not been monetised but are important to the case for investment, as they contribute to some of Nottinghamshire's and the region's priority objectives: supporting employment and growth, supporting key economic sectors; and social and deprivation impacts. The qualitative assessment of the non-monetised impacts has been informed by stakeholder consultations with businesses and tourism assets along the A614/A6097 route.

### Supporting employment and economic growth

5.2 The dependent development sites unlocked by the scheme will support a range of productive jobs in the area. The DCLG Appraisal Guide<sup>54</sup> states that the default assumption is that any jobs created by a development resulting from government expenditure do not increase aggregate employment as these employment effects are already largely determined by macroeconomic decisions on the level of overall public expenditure. As a result, it recommends that DCLG appraisals do not put a monetary value on these employment impacts. The Guide recognises, however, that employment effects can often have an important local impact and contribute to the strategic arguments for investment.

5.3 The two sites supported by the Scheme are of strategic importance for the area and will support a large number of employment opportunities. It is estimated that once fully operational, Thoresby Colliery site will support 1,048 gross direct jobs, making a significant economic contribution to the local economy in Newark & Sherwood as well as Nottinghamshire more widely. As outlined in the previous section, it is estimated that only a quarter of employment space at the site could come forward without the improvements being implemented, therefore the Scheme plays an important role in ensuring the employment impacts on the site materialise in full.

5.4 The Scheme will also benefit the site at Teal Close, which is estimated to support a further 684 gross direct jobs locally. The employment land at Teal Close is not identified as dependent on the improvements, however, given the constraints to the residential aspect of the development, the implementation of improvements will be beneficial in ensuring the site is built out in full and employment impacts materialise.

5.5 Illustrative GVA impacts associated with the jobs have been provided to demonstrate their value and significance for the local economy.

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<sup>54</sup> DCLG (2016) The DCLG Appraisal Guide

**Table 5-1 Gross direct employment impacts at Thoresby Colliery & Teal Close**

Site	Floorspace	Area (m2)	Employment Density (m2 per job)	Number of gross jobs	GVA per Job	Total indicative GVA benefits
Thoresby Colliery	B1a	4,855	13	373	£45,655	£17.1m
	B1c	13,760	47	293	£43,477	£12.7m
	B2	13,760	36	382	£43,477	£16.6m
Teal Close	B1	4,500	13	346	£57,208	£19.8m
	B2/B8	13,500	40	338	£54,479	£18.4m
<b>Total</b>		<b>50,375</b>		<b>1,732</b>		<b>£84.6m</b>

Source: AECOM calculations (2020); HCA (2015) Employment Density Guide 3rd Addition; Annual Business Survey (2020) National GVA per Employee by Sector; ONS (2020) Regional and Sub-regional Productivity February (2018 Data)

5.6 Furthermore, the gross direct jobs would support further indirect and induced jobs. The HCA Additionality Guide<sup>55</sup> provides economic multiplier ready reckoner values and states that the majority of interventions are expected to have a multiplier of 1.1 at the neighbourhood level and 1.5 at the regional level. Based on the above, a total of 1,153 direct, indirect and induced jobs could be supported locally by the development at Thoresby Colliery and 752 total jobs at Teal Close. At the regional level, the two sites could support 2,598 direct, indirect and induced jobs.

5.7 In addition to employment benefits, the development unlocked by the Scheme will support further fiscal impacts in the form of local council tax revenue:

- Based on the council tax receipts record from Newark & Sherwood Council and the typology of housing at Thoresby Colliery, the site will contribute an additional c. £1.5m per annum of Council tax revenues (of which £1.2m would be associated with the dependent housing on the site).<sup>56</sup>
- Similarly for Teal Close, the development could contribute additional c. £1.5m per annum in Council tax revenue for Gedling Council (of which £1.1m would be associated with the dependent housing on the site).

5.8 By increasing the amount of commercial and industrial space in the area, the Scheme will support further fiscal impacts in the form of business rates at the two development sites:

- The rateable value in the area around the Thoresby Colliery for offices is on average £45 per sqm, and £24 per sqm for industrial space<sup>57</sup>. Applying the business rates multiplier, the proposed scheme will lead to c. £600,000 increase in business rates revenues per annum in total, of which c. £450,000 is estimated to be associated with the dependent development on the site (VOA, 2020).

<sup>55</sup> HCA (2015) Additionality Guide 4th Addition

<sup>56</sup> The figure has been calculated by analysing current council tax bands in the area and applying the Newark & Sherwood council tax band payments corresponding to the typologies provided by the proposed scheme. An equivalent approach is also taken to calculating the benefits at Teal Close for Gedling.

<sup>57</sup> The average rateable values have been calculated on the basis of current information and rateable values (price per m2/unit) on existing properties (office, industrial & workshop) in Edwinstowe & Ollerton area (postcode NG22 9 and NG21 9). Values are set by the Valuation Office Agency (VOA).



- The development at Teal Close is estimated to support a further £420,000 in business rates revenue per annum (although it should be noted that the employment space at Teal Close is not considered to be dependent on the Scheme) (VOA, 2020)<sup>58</sup>.

## Improving business efficiency and supporting investment

- 5.9 Congestion and delays on the network result in increased costs for businesses along the A614/A6097 corridor. Congestion increases costs particularly for businesses in road-reliant sectors by causing longer delivery times, increased staff costs, and penalties associated with delayed and missed deliveries. The ability for companies to plan their operations is reliant on an efficient and reliable road network.
- 5.10 As stated above, the transport modelling results capture the Scheme's impacts on improved journey times for road users. This will lead to increased economic efficiencies and improved competitiveness for businesses through cost savings, as well as increased certainty and ability to plan as the network becomes more reliable.
- 5.11 The A614/A6097 corridor is home to a number of businesses which rely on the road network for their day-to-day operations. This includes businesses in the logistics sector (Clipper Logistics), major agricultural businesses (Strawson), highways construction and engineering (Via East Midlands). These businesses have been consulted as part of this study to add to the understanding of constraints and potential wider impacts of the Scheme on their operations.
- 5.12 The Scheme will relieve business constraints currently experienced along the route and at pinch points at the identified junctions. In addition to addressing safety and congestion concerns, engagement with businesses identified the potential for the Scheme to influence investment decisions. The reduced travel times and improved reliability along the network will allow businesses to improve processes resulting in greater efficiency through increased delivery speeds, later delivery cut-off times and increased output, for example, as reported by Clipper Logistics. These conditions allow businesses to interact more efficiently with each other and their supply chain. The knock-on effect will ultimately lead to increased productivity, a key priority for the regional economy.
- 5.13 Improved performance on the transport network can increase the attractiveness of the route as a place for business, allowing businesses to expand as well as drawing new investment to locate in the area. Business engagement has identified that a number of companies along the route are currently constrained in their ability to expand their operations due to the issues experienced at the junctions. This includes Via East Midlands, which has ambitious growth plans to increase turnover by £8m over the next three years. However, the connectivity affecting activity at the Bilsthorpe site are causing the business to consider alternative locations to realise these ambitions. Strawson has reported similar challenges for its future investment and expansion. The delivery of the Scheme would therefore directly support increased investment into the area by relieving constraints on businesses. The overall impact has the potential to encourage inward investment into the area, as business locations along the route become more attractive.

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<sup>58</sup> The average rateable values have been calculated on the basis of current information and rateable values (price per m<sup>2</sup>/unit) on existing properties (office, industrial & workshop) in Netherfield area (postcode NG4 2). Values are set by the Valuation Office Agency (VOA).

## Tourism sector impacts

- 5.14 As described in Section 1, tourism is one of the key sectors along the A614/A6097 route with nationally-significant assets locations along the corridor including Center Parcs, Sherwood Pines and Rufford Park. These organisations have been consulted as part of the study.
- 5.15 The review of the Economic Profile of the area has highlighted the importance of tourism industry along the A614/A6097 route locally as well as for Nottinghamshire more generally. The tourism activity supports substantial levels of employment along the route. Center Parcs is one of large employers in the area, employing approximately 1,880 staff (including 1,500 at the holiday village and a further 380 staff at the headquarters site in Ollerton). Around 70% of employees at Center Parcs live within a 25-minute drive and rely heavily on the A614 for the daily commute. Currently the congestion experienced along the route is impacting on the business's ability to attract and retain staff, as employees grow frustrated with the commuting conditions. These challenges have been echoed by other employers along the route. By alleviating the pinch points along the corridor, the Scheme has the potential to benefit support key tourism assets in Nottinghamshire by allowing to operate more efficiently through reduced churn of labour, as well as allowing to attract more workers to the area.
- 5.16 The A614 is a primary route for visitor trips to destinations including Rufford Park (attracting 360,000 visitors annually) and the aforementioned Center Parcs (attracting 400,000 annual visitors). Sherwood Pines attracts approximately 360,000 visitors per year but visitors are directed to the main entrance via the B6030 route. At peak times and the changeover days at Center Parcs (taking place Mondays and Fridays), visitors to multiple destinations along the route face delays and queues at junctions which impacts on visitor satisfaction levels. Consultations with tourism assets found that constraints experienced by visitors (such as 45 minutes required to get to a main arterial road) can negatively impact perceptions, having a knock-on effect on return visits. Shorter trips to destinations which rely on days trips (such as Rufford Park) can be impacted further, as the time spent in traffic minimises dwell time on the site, hence reducing visitor spend.
- 5.17 Reducing congestion and delays along the route has the potential to greatly benefit the visitor experience to key tourism destinations along the A614/A6097 corridor. In doing so, the Scheme will encourage return trips as well as generating reputational benefits for the tourism cluster as a whole.
- 5.18 With further tourism investment planned in the area – such as the Forest Corner Masterplan<sup>59</sup> - creating conditions for growth of the industry is important in achieving the economic ambitions of the area, and the Scheme can play an important role in securing these outcomes. By delivering benefits to key tourism employers and destinations in the area, the Scheme directly supports the objectives of Nottinghamshire's Visitor Economy Strategy<sup>60</sup> to grow the visitor economy and grow a sense of place along the A614.

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<sup>59</sup> Leonard Design Architects (2020) Forest Corner Masterplan

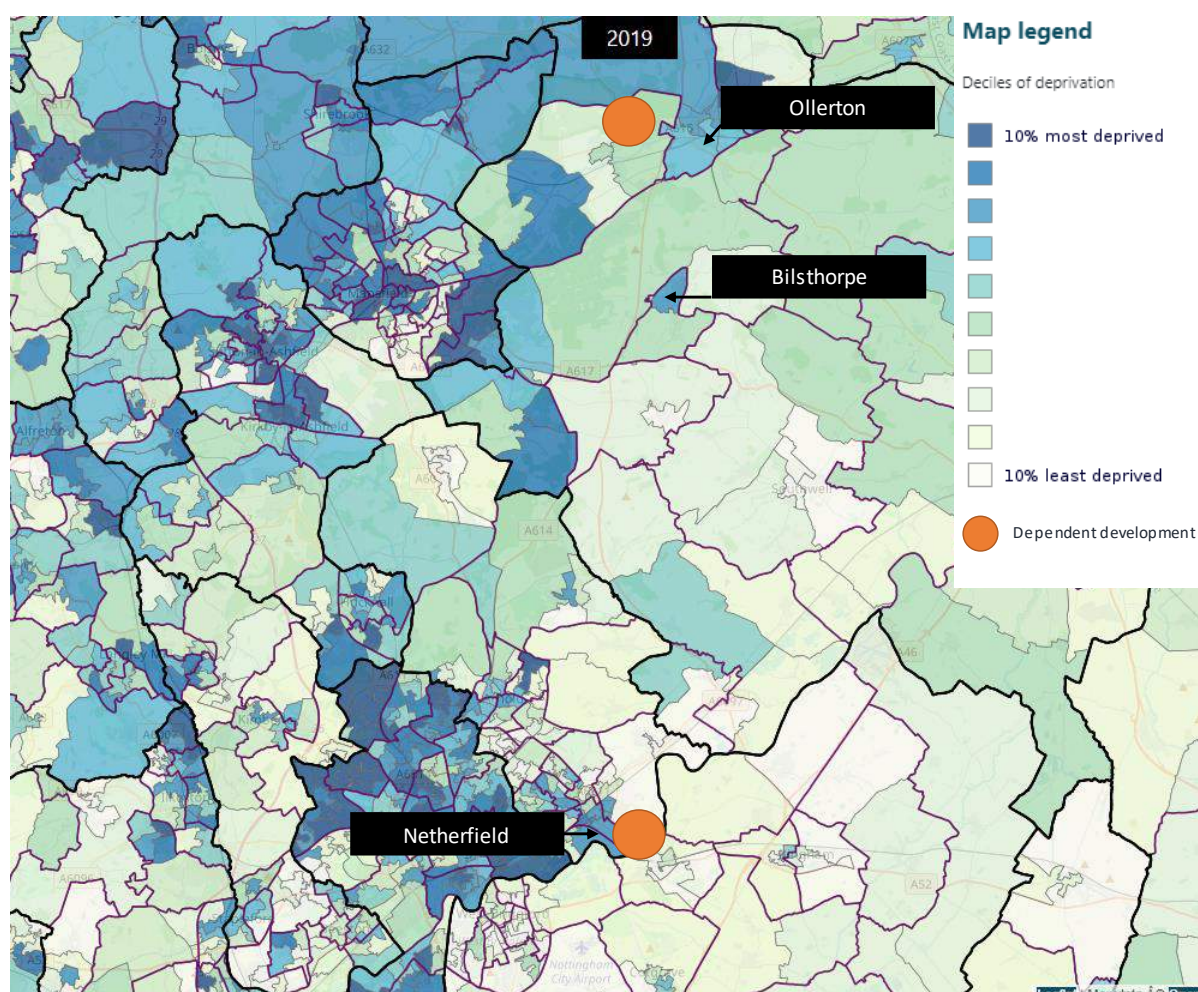
<sup>60</sup> Nottinghamshire County Council (2019) Visitor Economy Strategy 2019 to 2029

## Deprivation and social impacts

5.19 The combination of transport and housing benefits enabled by the scheme will support further social impacts for communities along the corridor.

5.20 Although areas along the A614/A6097 route largely demonstrate moderate levels of deprivation in comparison to the rest of the country, there are pockets of deprivation along the route concentrated at Bilsthorpe, Netherfield and Ollerton. These areas are among the top 20% and 30% most deprived in the country. The development sites unlocked by the Scheme are located close to these deprivation pockets along the corridor (see Figure 5-1).

**Figure 5-1 Index of Multiple Deprivation (2019)**



Source: MHCLG (2019) English Indices of Multiple Deprivation

5.21 The additional high quality housing and social infrastructure enabled by the dependent development along the A614 will support physical regeneration and improved infrastructure provision, as well as access to high quality jobs. These factors are important in delivering regeneration outcomes and demonstrate how an improved road network can lead to improved neighbourhoods and attractiveness of places.

5.22 The additional social infrastructure enabled by the dependent development will bring in new investment to support communities residing at the new developments. The range of new infrastructure delivered at Thorsby Colliery and Teal Close sites will include:

- Additional education and health facilities on both sites (including a new primary at Thoresby Colliery) enhancing community provision in the area.
- Additional retail, restaurant and pub provision will add to the vibrancy of communities and generate social benefits.
- New open space, allotments and recreation space will be provided, as well as access arrangements to an ecology park at Teal Close, and a new country park with ecological habitats and areas of green infrastructure at Thoresby Colliery.
- Furthermore, the development at Thorsby Colliery will be home to a world's first Connected Forest<sup>61</sup> test bed and trial programme at the Sherwood Forest Visitor Centre and surrounding area, including Rufford Abbey Country Park, which are managed by the RSPB and Parkwood Outdoors on behalf of the County Council.

5.23 The community infrastructure investment will benefit new as well as existing residents of Edwinstone, Ollerton, communities around Netherfield and Stoke Bardolph as well as visitors to the tourism attractions. The additional local services will enhance the vitality of places, adding value to quality of life and contributing to wider physical regeneration outcomes.

## Contributing to housing growth and development

5.24 In addition to unlocking development dependent on the Scheme, improvements to the A614/A6097 corridor have the potential to contribute to the wider growth agenda in the local authorities along the corridor.

5.25 Section 3 has highlighted the development opportunities and sites planned along the route in Newark & Sherwood, Gedling, Rushcliffe and Bassetlaw. In Newark and Sherwood, this includes settlements along the route such as Ollerton & Boughton, Edwinstowe, Bilsthorpe, Rainworth, Blidworth, Farnsfield and Lowdham, which are expected to accommodate future housing and employment growth<sup>62</sup>. In Rushcliffe, the development at the RAF Newton will benefit from improvements to A6097 / Kirk Hill junction delivered by the Scheme, with the need to provide improvements at the junction stated in the planning conditions for the site<sup>63</sup>. In Bassetlaw, plans for Bassetlaw Garden Village could also benefit from the A614 junction upgrades for southerly journeys with potential sites identified at the northern end of the A614<sup>64</sup>. In addition to the sites which are committed along the route, the Scheme has the potential to improve the investment conditions along the route, hence stimulating further development. By helping to improve transport conditions along the route and provide consistency of service along the corridor, the Scheme will increase the capacity on the network to help development to come forward, resulting in an uplift in the wider housing and employment land provision - one of the key objectives of the Scheme.

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<sup>61</sup> Harworth Group (2020) <https://harworthgroup.com/2020/02/20/sherwood-forest-on-target-to-become-the-worlds-first-5g-connected-forest/>

<sup>62</sup> Newark and Sherwood District Council (2019) Review of the Newark & Sherwood Local Development Framework Core Strategy & Allocations: Amended Core Strategy Adopted March 2019.

<sup>63</sup> Rushcliffe Borough Council (2020) Notice of Planning Permission for Land At Former RAF Newton

<sup>64</sup> Bassetlaw District Council (2019) Possible Garden Village Sites: Preliminary Accessibility Appraisal



# Appendix A – Land Value Uplift Methodology

The calculation of LVU associated with the dependent development is undertaken using HM Treasury Green Book (2020)<sup>65</sup>, DCLG Appraisal Guide (2016)<sup>66</sup> and MHCLG residential and employment land values (August 2020)<sup>67</sup>.

The calculation of LVU includes the following steps:

- Calculate the change in Land Value<sup>68</sup> between the Reference Case and Intervention Case. This is the value difference between the current use of sites (brownfield and agricultural/ greenfield) and the proposed use of sites with the Scheme (residential and employment uses) taking into account land use change and development scale:
  - The land values of the Reference Case and the Intervention Case are calculated by multiplying the land size by residual residential land values and industrial land values for housing and employment land respectively;
  - Current land value of all development sites considered in the Intervention Case is calculated by multiplying existing land use and land size;
  - LVU is calculated by subtracting the Current Land Value from the Land Value in the new use. This is done for both the Reference Case and the Intervention Case;
  - LVU is adjusted for displacement for both scenarios; and
  - LVU is adjusted for deadweight – development coming forward irrespective of the Scheme – which is taken into account by the Reference Case.
- LVU is profiled over the appraisal period based on the expected annual delivery of homes and employment space for both Reference Case and Intervention Case. An annual background land value uplift is applied and converted to 2019 prices.
- The net change in LVU is calculated by subtracting the Reference Case from the Intervention Case.
- LVU presented in 2019-year prices is converted to 2010-year prices to be in line with the Economic Case for the Scheme. This is achieved by applying discounting factors and GDP deflator factors based on the HM Treasury Green Book (2020). DCLG land value estimates provide residential land values which exclude affordable housing in order to “provide values for appraisal which reflect the full value to society of new housing”. For the purposes of this LVU assessment it is assumed that all new dependent housing is market housing.

LVU captures the net private benefits of the dependent development. In addition to this, the external benefits of development can be captured in order to derive the net social value of the development. This analysis therefore estimates the external benefits in terms of the

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<sup>65</sup> HM Treasury (2020) Green Book

<sup>66</sup> DCLG (2016) The DCLG Appraisal Guide

<sup>67</sup> MHCLG (August 2020) Land Value Estimates for Policy Appraisal: 2019 Values

<sup>68</sup> The MHCLG land values are presented as residual, taking account of development costs.

benefits arising through the provision of affordable housing which are additional to private benefits captured by LVU.

## Key Assumptions

- **Appraisal period:** a 30-year appraisal period is used; dependent development is assumed to be delivered within the first 30 years based on development phasing profiles;
- **Discounting rate:** in line with HM Treasury Green Book, a 3.5% discount (social time preference) rate is used for years 1-30 (with year zero being 2019/20);
- **Affordable homes:** assumptions are made on the proportion of affordable social rented homes for the purposes of external benefits calculation. It is assumed that 30% affordable homes will be delivered at the Thoresby Colliery site in line with Newark & Sherwood local policy requirement<sup>69</sup>. At Teal Close, the 5% affordable homes are assumed to be provided based on the planning application information<sup>70</sup>.
- **Land values:** residential and industrial land values are calculated based on MHCLG's land value estimates for policy appraisal<sup>71</sup>. These are provided at local authority level for residential and industrial values, and LEP level for commercial and agricultural/greenfield land. Commercial LVU is calculated for B1 and combined B2/B8 uses given that MHCLG provides a unique residual land value for B1 use, and one value for B2 and B8 uses. The residential land values are applied by assuming a development density which is consistent with MHCLG figures.<sup>72</sup>

Land type	Geography	£/ha
Residential land	Newark and Sherwood	1,130,000
Residential land	Gedling	550,000
Industrial/brownfield land	Newark and Sherwood	360,000
Greenfield/agricultural land	Derby, Derbyshire, Nottingham and Nottinghamshire	21,750
Commercial land: Office Out of Town/ Business Park	Derby, Derbyshire, Nottingham and Nottinghamshire (Nottingham)	740,000

Source: MHCLG (August 2020) Land Value Estimates for Policy Appraisal: 2019 Values

- **Rate of annual land value increase:** DCLG guidance (2016) suggests that for any development expected to be delivered in future years, the average annual real term growth rate is 5%. This rate of growth reflects the 20-year average annual growth in residential values in DCLG-published statistics<sup>73</sup>. The guidance states that in absence of further data, the uprate can be applied to all land values including industrial. No additional value uplift in excess of this real term growth rate is

<sup>69</sup> The Newark & Sherwood District Council (July 2013) Affordable Housing Supplementary Planning Document

<sup>70</sup> Gedling Borough Council (2013) Land off Teal Close, Netherfield Planning Application. Application Number 2013/0546. Available here: <https://democracy.gedling.gov.uk/documents/s2881/Application%20No.%2020130545-%20Land%20off%20Teal%20Close%20Netherfield.pdf>

<sup>71</sup> MHCLG (August 2020) Land Value Estimates for Policy Appraisal: 2019 Values

<sup>72</sup> MHCLG benchmark residential land values are based on a hypothetical scheme of 35 two storey, 2/3/4 bed dwellings with a total floor area of 3,150 sq. metres. The number of homes on each site is therefore divided by 35 to give the hectareage of land which is used in the calculation of LVU.

<sup>73</sup> See page 62 of The DCLG Appraisal Guide (2016)

assumed, e.g. additional land value growth as a consequence of the transport infrastructure enhancements.

- **Geographical level of analysis:** a sub-regional level of analysis is deemed appropriate for the LVU calculation. HCA Additionality Guide (2014)<sup>74</sup> suggests that *“the local level for interventions that generate employment effects or other economic benefits is often considered to be within the relevant travel to work area or if this is not appropriate then a 10-15 mile radius of the site concerned if it is a physical development.”* Additionality factors are selected based on a sub-regional level.
- **Additionality factors:** displacement factors have been applied to residential and commercial development impacts in line with the HCA Additionality Guide<sup>75</sup> to derive the net additional impact of the Scheme. Deadweight is accounted for by the Reference Case. Displacement of 38.0% and 38.7% is applied to residential and commercial land values respectively. No leakage, substitution nor multiplier effects are expected to occur.

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<sup>74</sup> HCA (2014) Additionality Guide: Fourth Edition

<sup>75</sup> HCA (2014) Additionality Guide: Fourth Edition

## Appendix B – Consultees

<b>Business/ Organisation</b>	<b>Consultee Name</b>	<b>Role</b>
<b>Strawson Ltd</b>	Mark Strawson	Director
<b>Center Parcs</b>	Raj Singh-Dehal	Chief Corporate Officer
<b>Sherwood Pines (Forestry England)</b>	David Chalmers	Area Land Agent, Central District
<b>Rufford Abbey and Country Park</b>	Justin Palfrey	Regional Director
<b>Clipper Logistics</b>	Iain Armstrong, Stacey Slater	General Manager, Human Resources Manager
<b>Harworth Estates</b>	Stuart Ashton	Head of Planning
<b>Via East Midlands</b>	Dave Tebbett	Head of Operations



