

3. Existing conditions and challenges

Identifying the existing transport conditions and the challenges that may be faced in the future (such as the transport impacts of new housing that will be required) has played an important role in developing how to make transport improvements in the future. The previous chapter identified the transport goals and objectives for Nottinghamshire. This chapter summarises the evidence base that has been gathered to help inform the local transport goals, objectives and transport strategy that has been developed to deliver the local transport objectives, as well as future programmes of work that are included within the Implementation Plan. The full transport evidence base is available to view on the County Council's website at www.nottinghamshire.gov.uk/ltp3 and will be updated annually to reflect the most up to date information available.

Nottinghamshire is considered an excellent authority for both transport planning strategy and delivery. This excellent performance gives the County Council a strong position and the LTP3 will build upon this success (and learn from past mistakes). Within each section of this chapter some of the key transport achievements that have already been made to deliver the goals and objectives are identified, along with the future challenges.

The transport evidence base should not, however, be read in isolation and the following reports have all been used to determine the transport needs of Nottinghamshire:

- The State of Nottinghamshire 2009
- Condition of Nottinghamshire 2009
- Nottinghamshire Headline Economic Assessment 2009
- Nottinghamshire County Strategic Assessment (Community Assessment) 2009
- Joint Strategic Needs Assessment (in partnership with the NHS) 2010
- district council core housing strategies, and
- Regional 'Delivering a Sustainable Transport System' studies.

Nottinghamshire, generally, has good longer distance transport links including the M1 and A1, the East Coast and Midland Mainline rail lines, as well as the close proximity of East Midlands and Robin Hood airports. Similarly, the county has good local east/west and north/south networks but there are still several challenges to delivering effective and efficient transport networks across the county.

The Highways Agency (HA) is responsible for what is called the national strategic road network (SRN), including its maintenance and improvements; monitoring the traffic levels, congestion and delays; and ensuring traffic flows freely along its routes. In Nottinghamshire the HA are responsible for the M1, A1, A453, A46 and A52. The County Council is responsible for the remainder of the roads in Nottinghamshire with the exception of 'private roads' and roads that are within the city of Nottingham.

Network Rail is responsible for the rail network infrastructure, whilst there are four train operating companies with services running through the county – Cross Country, East Coast, East Midlands and Northern trains.

3.1 Traffic movements

Successes

During the last LTP period the County Council has been successful in:

- limiting traffic growth across the county, reducing the vehicle kilometres travelled by 1% over the Plan period, and
- 83% of schools have travel plans and the numbers of children travelling to school by car has reduced by 9% (to 25%) over the Plan period.

Challenges

The challenges that we face over the LTP3 period include:

- changing travel behaviour, particularly for shorter journeys to help address health issues as well as congestion, and for other journeys by public transport
- funding programmes of work that influence travel behaviour, and
- people travelling further for work or training opportunities and ensuring they have realistic alternative choices to driving to their destination.

The county has several market towns and different employment centres which have significant transport implications concerning how people access jobs and training opportunities.

3.1.1 Travel to work areas

There are four travel to work areas in the county as determined by 2001 Census commuting patterns (as shown in figure 7 below):

- the Nottingham travel to work area which, in addition to Nottingham city, encompasses the whole of Broxtowe and Rushcliffe districts, the majority of Gedling district, as well as parts of Ashfield and Newark & Sherwood districts. It also includes parts of eastern Derbyshire and northern Leicestershire
- the Mansfield travel to work area which includes all of Mansfield district, the majority of Ashfield and Newark & Sherwood districts, as well as the south western tip of Bassetlaw and the north of Gedling district. It also includes parts of eastern Derbyshire
- the Worksop and Retford travel to work area which encompasses most of Bassetlaw (excluding the north eastern and south western tips of the district) as well as part of Derbyshire, and
- the eastern part of Newark & Sherwood as well as the north eastern tip of Bassetlaw are part of the Lincoln travel to work area.

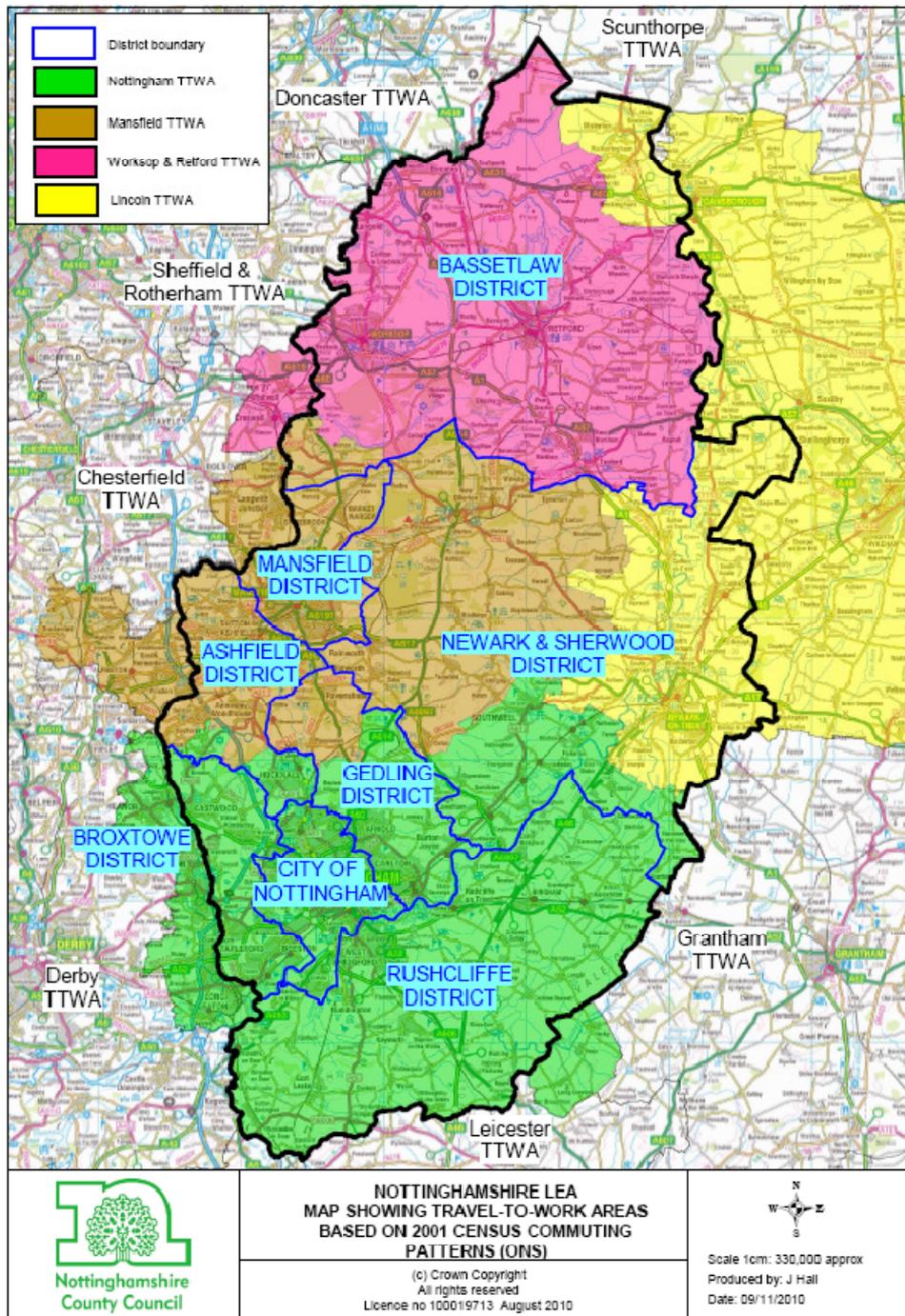


Figure 7: Travel to work areas in Nottinghamshire
Source: 2001 Census data

3.1.2 Interaction between districts

Table 3 shows the percentage of the county and Nottingham city workforce that work in each of the Nottinghamshire districts and Nottingham city, whilst figure 8 shows the numbers of workers travelling between each district. In the south of the county the main employment attractor is the city of Nottingham. In terms of employment most people travel between districts or further afield for employment. Bassetlaw is the most self-sufficient of all of the districts with over 70% of its residents working within the district. Almost 70% of Mansfield residents work in either Mansfield or neighbouring Ashfield.

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Table 3: Where workers are travelling to/from within Nottinghamshire

Place of residence	Place of employment							
	Ashfield	Bassetlaw	Broxtowe	Gedling	Mansfield	Newark & Sherwood	Rushcliffe	Nottingham
Ashfield	51%	1%	3%	3%	8%	1%	1%	16%
Bassetlaw	1%	71%	0%	0%	1%	3%	0%	1%
Broxtowe	2%	0%	36%	2%	1%	0%	3%	34%
Gedling	3%	0%	3%	36%	2%	2%	4%	42%
Mansfield	15%	3%	1%	2%	55%	6%	1%	6%
Newark	3%	3%	1%	3%	7%	59%	2%	9%
Rushcliffe	1%	0%	3%	3%	0%	1%	40%	35%
Nottingham	2%	0%	4%	5%	1%	1%	5%	73%

Source: 2001 Census data

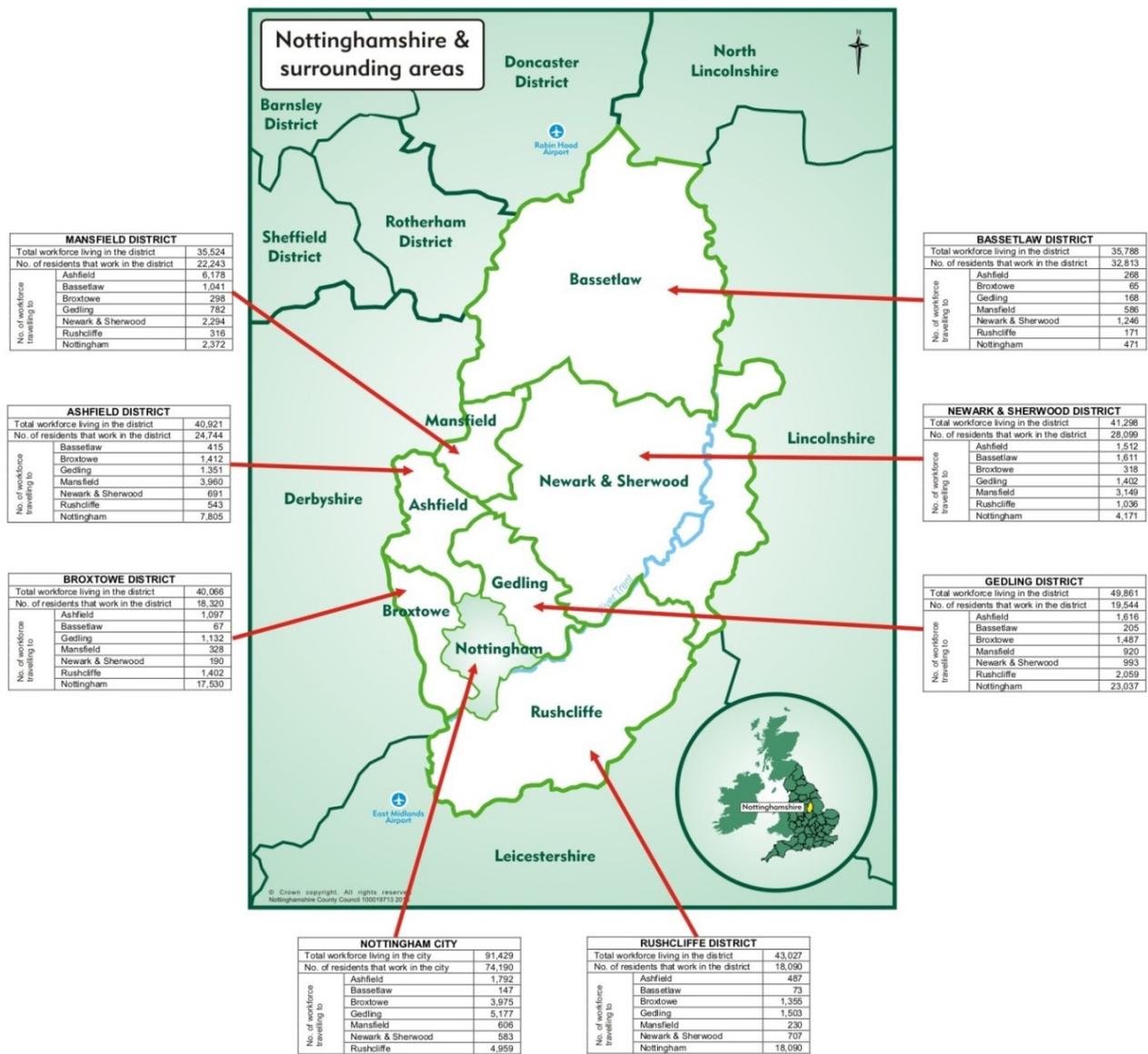


Figure 8: Where workers are travelling to (within the county area)
Source: 2001 Census data

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3.1.3 Interaction with neighbouring authorities

Nottinghamshire has important economic and employment, as well as leisure links, to other areas in the region and beyond. Figure 9 below gives detail on the numbers of people travelling to and from Nottinghamshire to work. The largest numbers of work journeys made across Nottinghamshire's administrative boundary are from workers travelling from the county (particularly the south of the county) into the city of Nottingham. There are also significant flows of workers travelling to or from Derbyshire in the west of the county. The majority of these movements are people travelling between Derbyshire and its neighbouring Nottinghamshire districts of Ashfield, Bassetlaw, Broxtowe and Mansfield for work.

Movement of workers across neighbouring authorities' boundaries is also evident (although to a much lesser degree) in the south of the county between Leicester/Leicestershire and the districts of Broxtowe and Rushcliffe; in the north of the county between Bassetlaw district and South Yorkshire; and in the east of the county between Lincoln/Lincolnshire and Newark & Sherwood district. With the exception of Leicestershire, the numbers of workers travelling into the county from each of the areas is similar to the numbers of workers travelling out of the county into each of the areas.

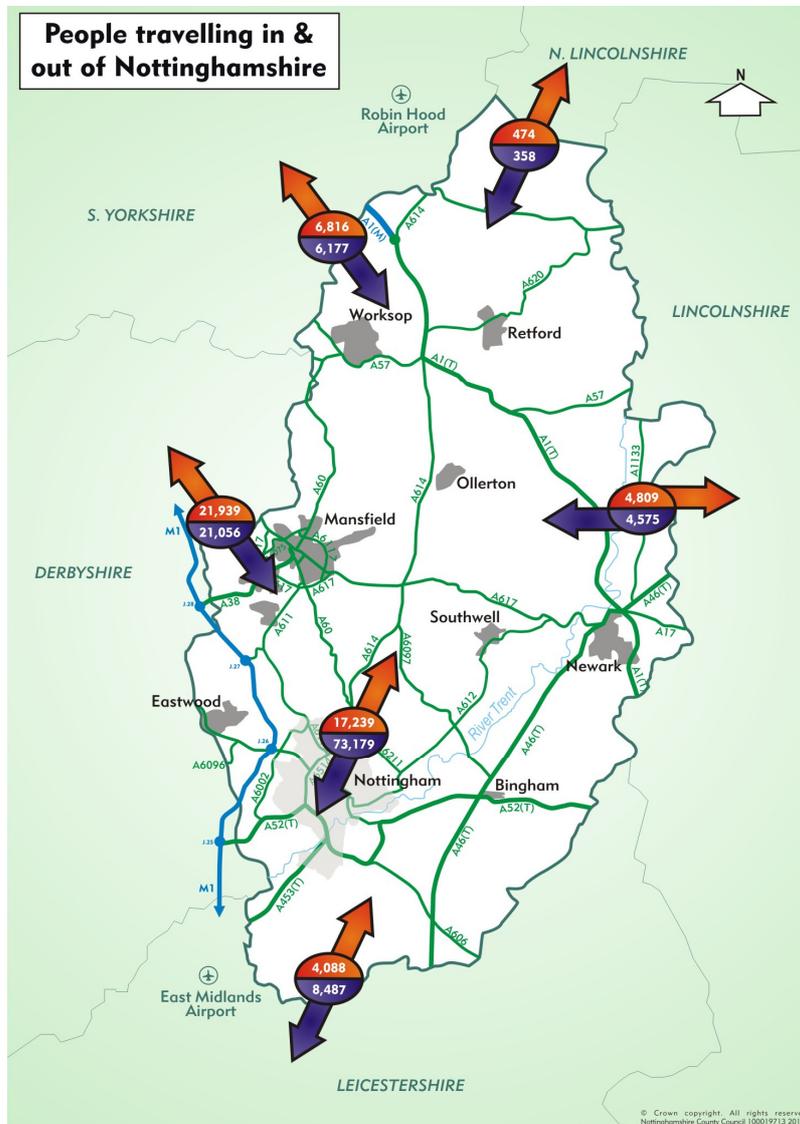


Figure 9: Workers travelling into and out of the county
Source: 2001 Census data

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In 2001, most of the county's workforce worked in the county (including the city of Nottingham). Only 16% of the county's workforce is travelling outside of the county (excluding the city of Nottingham), ranging from 22% in Bassetlaw and Broxtowe districts to only 8% in Gedling, as shown in table 4 below.

Table 4: Percentage of county workforce travelling outside the county for employment

Percentage of the workforce of each district travelling out of the county for employment							
Nottinghamshire	Ashfield	Bassetlaw	Broxtowe	Gedling	Mansfield	Newark & Sherwood	Rushcliffe
16%	16%	22%	22%	8%	12%	13%	17%

Source: 2001 Census data

These details can be investigated further as shown in table 5 below. This table shows that more workers travelling out of the county are travelling into Derbyshire than any other authority.

Table 5: Percentage of workers travelling out of the county to neighbouring areas

Percentage of workers travelling out of the county to neighbouring areas								
Travelling to	Nottinghamshire	Ashfield	Bassetlaw	Broxtowe	Gedling	Mansfield	Newark & Sherwood	Rushcliffe
Derbyshire	6%	12%	2%	15%	3%	8%	2%	3%
Leicestershire	3%	1%	0%	3%	2%	1%	1%	9%
Lincolnshire	1%	0%	4%	0%	0%	0%	5%	1%
S Yorkshire	2%	1%	12%	0%	0%	1%	1%	0%
Elsewhere	3%	2%	4%	3%	3%	2%	3%	4%

Source: 2001 Census data

In the north of the county, Bassetlaw district forms part of the Sheffield City Region. The Sheffield City Region also includes the Derbyshire districts of Bolsover, Chesterfield, Derbyshire Dales and North East Derbyshire along with the Yorkshire councils of Barnsley, Doncaster, Rotherham and Sheffield. In 2001, only 12% of the Bassetlaw workers, however, travel to South Yorkshire for work.

3.1.4 How workers are travelling to work

Tables 6 and 7 below show the distance people travel to work and how people usually travel to work respectively.

Table 6: Distance travelled to work

District	Distance travelled to work (percentage)					
	Under 2km	2-4.99km	5-9.99km	10-19.99km	20-29.99km	Over 30km
Ashfield	25%	21%	20%	13%	4%	4%
Bassetlaw	25%	15%	16%	18%	7%	7%
Broxtowe	23%	21%	19%	12%	3%	5%
Gedling	25%	19%	17%	13%	3%	3%
Mansfield	23%	27%	18%	11%	5%	3%
Newark & Sherwood	25%	16%	12%	16%	8%	5%
Rushcliffe	19%	14%	21%	15%	6%	5%
Nottinghamshire	24%	19%	17%	14%	5%	5%
East Midlands	22%	21%	18%	14%	5%	6%
England	20%	20%	18%	15%	5%	7%

Source: 2001 Census data

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Table 7: Usual mode of travel to work

District	Usual mode of travel to work (percentage)							
	Walking	Bicycle	Bus	Train	Motor-cycle	Car or van	Other	Work at home
Ashfield	11%	3%	7%	1%	1%	70%	0.5%	7%
Bassetlaw	11%	3%	3%	1%	1%	71%	0.5%	9%
Broxtowe	9%	4%	11%	1%	1%	66%	0.3%	8%
Gedling	8%	2%	15%	1%	1%	65%	0.3%	8%
Mansfield	10%	2%	7%	1%	1%	71%	0.4%	7%
Newark & Sherwood	9%	5%	4%	1%	1%	68%	0.4%	11%
Rushcliffe	7%	3%	10%	1%	1%	69%	0.3%	10%
Nottinghamshire	10%	3%	11%	1%	1%	64%	0.4%	8%
East Midlands	10%	3%	7%	1%	1%	68%	0.4%	9%
England	10%	3%	8%	4%	1%	62%	3.5%	9%

Source: 2001 Census data

The most recent complete data that is available is from the 2001 Census. Car use was by far the most popular form of transport. At that time 43% of work journeys were under 5km (or 3.1 miles), and 60% were under 10km (or 6.2 miles), yet 64% of people drove to work.

Since 2001 there has been a 43% increase in bus patronage in Nottinghamshire, set against an estimated 3.7% increase in population between 2001 and 2009. Therefore it is expected that the percentage of people usually travelling to work by bus will have increased. There were, however, considerable numbers of people travelling to work from some of the more urban districts by car. For example:

- 70% of workers resident in Broxtowe work in either Broxtowe or neighbouring Nottingham city which has a good bus network. 44% of workers travelled less than 5km to work; and 63% travelled less than 10km, yet 66% of workers travelled to work by car
- 78% of workers resident in Gedling work in either Gedling or neighbouring Nottingham city which has a good bus network. 44% of workers travelled less than 5km to work; and 61% travelled less than 10km, yet 65% of workers travelled to work by car, and
- 70% of workers resident in Mansfield work in either Mansfield or neighbouring Ashfield which has a good bus network. 50% of workers travelled less than 5km to work; and 68% travelled less than 10km, yet 71% of workers travelled to work by car.

3.1.5 How pupils are travelling to school

When comparing 2006/07 with 2009/10, the percentage of school pupils travelling to school by car in Nottinghamshire has decreased slightly, by 1.5%. This decrease, however, is amongst the 5-10 age group and hides an increase of almost 1% amongst the 11-15 age group. This reflects that 85% of pupils at primary schools have a travel plan, whereas only 67% of pupils at secondary school have a travel plan. How pupils travel to school is shown in table 8 below.

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Table 8: How pupils travel to school

	Usual mode of transport					
	Walking	Cycling	Public transport	Car (including vans and taxis)	Car share	Other
2006/07 data						
Aged 5-10	56.3%	1.0%	3.9%	35.9%	2.8%	0.1%
Aged 11-15	55.8%	2.9%	26.6%	13.6%	1.0%	0.1%
All Ages	56.1%	1.8%	13.3%	26.7%	2.0%	0.1%
2007/08 data						
Aged 5-10	57.2%	0.8%	3.5%	35.3%	3.0%	0.2%
Aged 11-15	53.3%	2.8%	30.0%	12.4%	1.1%	0.5%
All Ages	55.4%	1.7%	15.6%	24.9%	2.2%	0.3%
2008/09 data						
Aged 5-10	57.9%	0.8%	3.2%	34.6%	3.2%	0.3%
Aged 11-15	52.2%	3.0%	28.4%	14.1%	1.2%	1.2%
All Ages	55.3%	1.8%	14.9%	25.1%	2.2%	0.7%
2009/10 data						
Aged 5-10	58.5%	0.9%	2.8%	34.7%	3.0%	0.2%
Aged 11-15	52.6%	2.8%	27.3%	14.5%	1.2%	1.7%
All Ages	55.7%	1.8%	14.3%	25.2%	2.1%	0.9%

Source: DfES survey data

6.5% of pupils travelling to school by car are travelling less than 0.5 miles and a further 13% are travelling less than a mile by car. There is therefore scope for these pupils to travel to school on foot or by cycle.

3.1.6 Changes in area wide traffic mileage

Whilst the number of licensed vehicles in Nottinghamshire has increased by 3% between 2005 and 2009, traffic mileage in Nottinghamshire decreased by 1% over the same period, which compares favourably with regional trends (which showed no change); and national trends (which increased by 1%) over the same period.

Table 9: Changes in area wide traffic mileage when compared to 2005

Year	Changes in annual area wide traffic mileage		
	Nottinghamshire	East Midlands	Great Britain
2006	0%	2%	2%
2007	2%	3%	3%
2008	-1%	1%	2%
2009	-1%	0%	1%

Source: DfT and Nottinghamshire County Council traffic counts

When comparing 2005 with 2009, traffic mileage has only increased in Newark & Sherwood and has significantly decreased in the more urban districts of Broxtowe, Gedling and Rushcliffe. Traffic mileage on urban roads in Nottinghamshire in 2009 is 2% less than it was in 2005. Traffic mileage on rural roads in Nottinghamshire hasn't decreased at the same rate as urban mileage. In 2009 traffic mileage was at the same level as it was in 2005 which, whilst good, underlines the reliance on the private car for journeys from some rural areas due to a lack of alternatives.

Cordon data

Automatic traffic counts are undertaken around the four market towns in Nottinghamshire – Mansfield, Newark, Retford and Worksop – to determine the levels of traffic entering the town centres. Table 10 below details the changes in the numbers of vehicles entering the market towns when compared to 2005.

Table 10: Changes in traffic entering the market towns when compared to 2005

Changes in traffic entering the market town				
Year	Mansfield	Newark	Retford	Worksop
2006	-2%	0%	0%	-5%
2007	-3%	0%	-2%	-8%
2008	-4%	-3%	-5%	-8%
2009	-8%	-6%	-2%	-12%

Source: DfT and Nottinghamshire County Council traffic counts

Mansfield, Newark and Retford each have bus stations. As the volumes of traffic entering the market towns has decreased, public transport patronage at the bus stations in Mansfield and Retford has increased – 10% increase in Mansfield between 2004 and 2009; and 45% increase in Retford between 2005 (a new bus station was opened in 2007) and 2010. Newark bus station is currently being redeveloped and Worksop does not currently have a purpose built bus station facility.

3.1.7 Challenges

The most recent complete data set to determine usual travel patterns is 2001 and there will have been major changes in the way people travel during the last 10 years. The 2011 Census data will therefore be important to determine how travel patterns have changed and also to prioritise resources to affect the way people travel. It would appear, however, that there is still significant scope for people to reduce the numbers of short car journeys and undertake more healthy active travel for such journeys. Similarly, there is significant scope to further increase public transport patronage instead of car journeys where good bus services already exist.

The current recession may also have an impact on people's travel patterns, both in terms of the number and distance of journeys made. People may have to travel further for currently available jobs, or to take advantage of employment opportunities when the economy starts to recover.

3.2 Highway network

Successes

During the last LTP period the County Council has been successful in:

- reducing journey time delay on the road network
- significantly reducing the numbers of people killed and seriously injured in road accidents (25% reduction in all age groups and 50% reduction in children injured)
- reducing prohibited parking in town centres following the introduction of Civil Parking Enforcement, and
- maintaining the condition of A, B and C roads in the county at a high level; and the condition of other transport assets, such as lighting columns and bridges has improved.

Challenges

The challenges that we face over the LTP3 period include:

- although journey times have improved there remain congestion hotspots along routes into the urban centres
- managing the impacts of employment and housing growth to ensure that they do not negatively impact on the highway network
- ensuring that increased numbers of private car journeys do not cause journey time delays as the economy recovers
- influencing travel behaviour, particularly for shorter journeys by active travel and other journeys by public transport
- addressing specific road safety issues (whether specific road users or geographic locations), and
- maintaining the highway network and ensuring that it is resilient to predicted pressures.

There are over 4,000km of road network in Nottinghamshire; as show in table 11 below.

Table 11: Nottinghamshire's road network

	Road type							Total
	Motorway	A(M)	A(Trunk)	A	B	C	Unclassified	
Length of roads in Nottinghamshire	12	5	129	559	272	765	2554	4296

Source: Nottinghamshire County Council

The County Council monitors traffic flows at 200-300 sites across the county each year to help identify existing, and predict future, traffic conditions. The County Council uses this information to identify its strategic road network based on trip generators across the county (eg, market towns and local centres) and the numbers of vehicles travelling along routes. Figure 10 below details the strategic routes in Nottinghamshire – the identified routes have, on average, traffic flows of over 15,000 vehicles per day, and/or over 500 heavy goods vehicles (HGVs) per day.

3.2.1 Condition of the road network

The road condition in Nottinghamshire is monitored annually and is detailed below in table 12. In 2009/10:

- the percentage of the County's A road network where maintenance should be considered has remained at 1.5% of the network, although the condition is slightly worse in Broxtowe, Gedling and Mansfield districts
- the percentage of the County's B & C road network where maintenance should be considered has remained at 8.4% (although deterioration has been seen in Newark & Sherwood and Rushcliffe; and the condition has improved in Ashfield district), and
- the County's unclassified road network has worsened, particularly in the more rural districts.

The condition of the A road network in Nottinghamshire is better than the average shire authority, the East Midlands region's average and the average in England. The condition of the B&C road network in Nottinghamshire is the same as the average shire authority, the East Midlands region average and slightly better than the average in England. The condition of the unclassified road network in Nottinghamshire is slightly worse than the average shire authority and the average in England.

Table 12: Percentage of the road network where maintenance should be considered

Road type	Percentage of the road network where maintenance should be considered			
	2006/07	2007/08	2008/09	2009/10
A	2%	1.5%	1.6%	1.5%
B and C	6%	7.3%	8.4%	8.4%
Unclassified	15%	15.7%	17.0%	19.5%

Source: Nottinghamshire County Council

3.2.2 Capacity on the network

The level of congestion, commonly called the level of link 'stress', is measured by comparing the level of observed traffic against the maximum amount of traffic that could travel along the road in an hour, i.e. the capacity of the road. Some roads are more congested than others and for longer than just the busy morning and evening rush hours. When the ratio of flow to capacity is less than 90% the link operates within capacity. Between 90% and 100% stress, the link is approaching capacity and the traffic flows are susceptible to flow breakdown. At greater than 100% stress the link operates over capacity and experiences stop-start traffic flows, queuing traffic and delays.

Capacity along the County Council's network

Stress maps have been produced by organisations on behalf of Ashfield, Bassetlaw and Newark & Sherwood district councils during the development of their local development frameworks. This work has only identified two locations on the County Council's road network that currently operates over capacity – the B6026 Huthwaite Road, and a section of the A38 in Ashfield district.

A transport model has been produced to help predict traffic flows within the Nottingham Core Housing Market Area (HMA), which includes the Broxtowe, Gedling and Rushcliffe districts as well as Hucknall. The model has been used to produce stress maps for the Nottingham Core HMA which has identified a small number of short sections of road that currently operate over capacity in each of these districts (generally on routes into the city and district centres).

The stress map assessments and modelling shows that the number of roads in the county at or above capacity would increase considerably if the proposed housing and employment growth goes ahead without any mitigation, with each of the districts being affected. The stress map assessments are included within the LTP3 Evidence Base Report.

Capacity along the Highways Agency's network

An analysis of the observed conditions and delays in 2006 was reported in the Highways Agency's (HA's) 'Regional Network Report for the East Midlands 2008'. This report identified the following locations as having high daily stress (over 90%) levels in 2006:

- M1 between junctions 26 and 27
- A453 between the M1 and Nottingham
- A46 between Saxondale (A52) and Newark
- A52 between Wheatcroft roundabout (A606) and Saxondale (A46).

Since the report was published the HA has undertaken widening along the M1 between junction 26 and 27; and is undertaking improvement works along the A46 between Saxondale and Newark. Future observations may therefore show significant improvements along these routes.

3.2.3 Delay on the network

In 2007, the East Midlands Development Agency commissioned a study to identify the economic costs of congestion to the East Midlands region's economy. The report identified that the 'direct' and 'indirect' costs of congestion to the regional economy amounted to approximately £935m per year. This figure excludes congestion costs incurred on the East Midlands region's national strategic road network (including some motorways and trunk roads within the study area) which amounted to a further £185m per year. The direct costs of congestion were identified for each of the housing market areas in the region and table 13 below shows the estimated direct costs of congestion on non-trunk routes for the relevant housing market areas in Nottinghamshire.

Table 13: The economic costs of congestion in the Nottinghamshire housing market areas

Housing market area	Total (£m)	Per capita (£)
Nottingham core (Broxtowe, Gedling and Rushcliffe districts; Hucknall; Nottingham City; and the Derbyshire district of Erewash)	152	209
Nottingham outer (Mansfield and Newark & Sherwood districts; and the Ashfield district except Hucknall)	3	12
Northern (Bassetlaw district)	10	26

Source: The economic costs of congestion in the East Midlands Region, emda June 2007

To monitor delay on the network, journey time surveys have been undertaken. The results of these surveys are detailed in the sections below but where there is delay, it is generally located at hotspots linked to traffic control such as traffic signals.

Journey time surveys in market towns

Journey time surveys utilising GPS technology were undertaken during 2008, 2009 and 2010 in each of the four largest market towns in the north of the county – Mansfield, Newark, Retford and Worksop. Surveys were undertaken in the morning peak; the evening peak; and during the inter-peak period. Table 14 below details the results of the inbound journey time surveys during the morning peak (0730-0930) in each of the market towns between 2008 and 2010. The figures show that the average speeds have not got worse in any of the market towns, with increases in speeds in Mansfield, Retford and Worksop when compared to 2008.

Journey time surveys into Nottingham city centre

In 2008, a congestion management study looked at the patterns of congestion in the 'Three cities' sub-region and their surrounding areas – Derby, parts of Derbyshire, Leicester, Leicestershire, Nottingham and part of Nottinghamshire (Broxtowe, Gedling and Rushcliffe districts as well as Hucknall). The results of the congestion survey showed significant morning peak congestion inbound on many of the radial routes into the 'Three cities'.

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During the second Local Transport Plan period the County Council, jointly with Nottingham City Council, were required to monitor congestion within the Greater Nottingham conurbation. A total of 18 routes (13 of which travelled through the county) were monitored through journey time surveys utilising GPS technology. The overall results of the surveys along these 13 routes in the morning peak are included in table 14 above, whilst the morning peak results along individual routes are shown below in figure 11. Between 2007 and 2009 (2010 data was not available at the time of writing) the overall journey speeds have not got any worse in Greater Nottingham. There is, however, significant variance in the journey time between the routes, ranging from 2.5 minutes per mile on the A612 to around 4.7 minutes per mile on the A611. There have been reductions in the journey times along most of the routes but journey times have increased on several sections in the county including B684, A606, A6005, and A609.

Table 14: Average journey times during the morning peak

Location	Route length (miles)	Morning peak (0730-0930) inbound							
		Average speed (mph)				Average journey time per mile (minutes)			
		2007	2008	2009	2010	2007	2008	2009	2010
Mansfield	26.1		18	18	19		3:23	3:26	3:11
Newark	7.2		20	20	20		3:08	3:00	3:07
Retford	6.0		15	17	17		4:01	3:41	3:38
Worksop	10.7		19	20	20		3:02	2:55	3:05
Greater Nottingham	30.8	19	19	19	N/A	3:11	3:30	3:13	N/A

Source: Nottinghamshire County Council

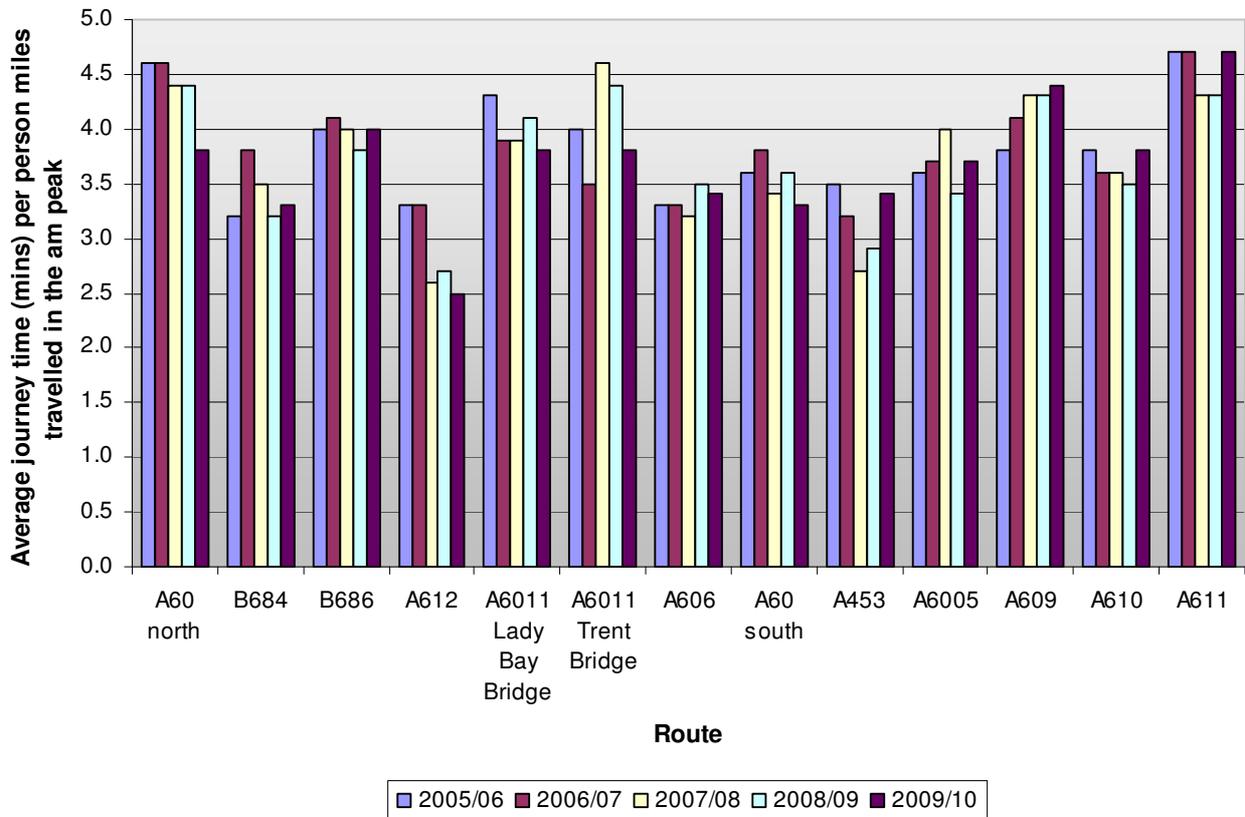


Figure 11: Average journey times in Greater Nottingham

Source: Nottinghamshire County Council

Inter-urban journey times

The Department for Transport has provided the County Council with 2009/10 Trafficmaster GPS data for the county. The Trafficmaster data has been mapped to show the journey time speeds on the network in the county (including inter-urban routes) during the morning peak and this shows that there is currently no inter-urban delay. Unfortunately, the County Council do not hold earlier year's data so no trends can be analysed but this data will be useful in future years to determine whether or not journey times between the local centres, market towns and the City are improving or worsening.

Vehicle delay on the Highways Agency's network

The 'Regional Network Report for the East Midlands 2008' produced by the Highways Agency (HA) analysed observed delays in 2006 on the HA's national strategic road network. The roads in Nottinghamshire identified as having the greatest delay per vehicle and peak hour vehicle delay were:

- A453 between Nottingham and the M1
- A52 east and west of Nottingham
- A1 particularly Newark to Grantham.

Improvement works have been undertaken along the A1 since 2006 and therefore vehicle delay is likely to have reduced along the A1.

3.2.4 Casualties on the highway network

There have been significant reductions in the numbers of all types of road casualties in Nottinghamshire when compared to both the 1994-98 average and the numbers injured in 2005.

Killed and seriously injured casualties

The numbers of killed and seriously injured (KSI) casualties has decreased year on year and in 2009 the number of casualties had fallen by over 46% when compared to the 1994-98 average (from 826 to 446); and by 25% when compared to 2005 (from 593 to 446). When comparing 2009 with the 1994-98 average, Nottinghamshire has seen more significant decreases in the number of KSI casualties than the regional and national averages.

Due to increased casualties in 2009, when comparing 2009 with 2005, the numbers of KSI casualties increased in Broxtowe (8% increase – although almost a fifth of these are on motorway and trunk roads) and Mansfield (6% increase) districts. It should be noted, however, that these districts had the lowest numbers of casualties in the base year.

Child killed and seriously injured casualties

The numbers of child KSI casualties has decreased year on year and in 2009 the number of casualties had fallen by just over 68% when compared to the 1994-98 average (from 129 to 40); and by 50% when compared to 2005 (from 80 to 40). Despite starting from a low base, the numbers of child KSI casualties decreased in each of the districts between 2005 and 2009. When comparing 2009 with the 1994-98 average, Nottinghamshire has seen more significant decreases in the number of child KSI casualties than the regional and national averages. But the actual number of casualties is higher than all the other authorities in the East Midlands region, although it should be noted that the number of child casualties in Nottinghamshire also started from a higher base figure.

Slightly injured casualties

The numbers of slight injuries has seen significant reductions and in 2009 the number of casualties had decreased by just over 21% when compared to the 1994-98 average (from 3,387 to 2,668); and by 15% when compared to 2005 (from 3,157 to 2,668). When comparing 2009 with the 1994-98 average, the reduction in slight casualties in Nottinghamshire is the same as the regional average but less than the national average. The actual number of casualties remains higher than most other

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authorities in the region, again it should be noted that the number of slight casualties in Nottinghamshire also started from a higher base figure.

Between 2005 and 2009 the numbers of slight casualties decreased in each of the districts except Rushcliffe. The numbers of casualties in Rushcliffe has, however, decreased year on year since 2006.

Casualty details on specific road user groups are detailed in the relevant sections below.

3.2.5 Challenges

Virtually the whole of the County Council highway network operates within capacity but the Council cannot be complacent. Whilst there have been improvements in journey times on the roads during the last LTP period, there are still hotspots across the county where delays occur, primarily due to traffic management such as traffic signals. Other challenges relating to the bus network (detailed below in Section 3.4 – Public transport) and future growth (detailed below) will almost certainly have an impact on the highway network if they are not managed effectively. The County Council will therefore need to continue its work to limit the vehicle kilometres travelled and increase its work to influence the transport choices people make to prevent the worsening of congestion and delay on the highway network. Such measures are, however, predominantly funded through revenue funding which historically has been difficult for the County Council to fund.

Significant improvements have been made to address capacity issues on the Highways Agency managed roads but there are still major issues on parts of its network, particularly the A453. The Guardian newspaper reported on 28 April 2010 that the A453 has the worst delay on all of the Highways Agency network except for a single section of the M25 (J23-16) which is currently being improved by a widening scheme.

Future housing and employment development could have a significant negative impact on the operation of the highway network, both in terms of delay and capacity. It is therefore vital that the district councils only allow development in suitable locations (i.e. in locations that are already served by good bus, cycle and walking networks). Similarly, any new development should have nil detriment to the existing highway network. The district councils will therefore also need to ensure that any development that takes place does not have any impact on the existing network through ensuring that developers make sufficient contributions to negate the transport impacts of the development; releasing such contributions so that the necessary improvements can be delivered by the County Council; as well as effective monitoring and enforcement of travel plans.

The current recession may also have an impact on people's travel habits as unemployment will reduce the numbers of journeys particularly at peak times. As the economy starts to recover there may be increases in the numbers of private car journeys as people return to work.

Whilst the numbers of killed and seriously injured road casualties has decreased significantly, there are still variances across the county and the County Council will need to continue to monitor casualty trends and causes to continue to effectively prioritise the remedial measures in the areas that need them most.

Maintaining the highway network at its current levels will remain a challenge over the LTP3 period. In addition to funding pressures, the County Council must also contend with the increased cost of materials. Recent years have seen increased rainfall; flooding; and more severe winters across Great Britain. If the predicted impacts of climate change occur the County Council will need to ensure that its transport networks are more resilient to potentially harsher winters; longer hotter drier summers; more intense rainfall; and greater levels of flooding.

3.3 Motor vehicles

Successes

During the last LTP period the County Council has been successful in:

- limiting the number of newly licensed vehicles to less than the regional and national averages
- meeting targets to limit CO₂ emissions from road vehicles, and
- maintaining the levels of air quality so that no further air quality management areas have been declared.

Challenges

The challenges that we face over the LTP3 period include:

- a lack of alternatives to the private car to make some journeys from rural areas, particularly for those without access to a car
- poor air quality due to transport conditions at specific locations
- addressing specific road safety issues (whether specific road users or geographic locations)
- changing travel behaviour, particularly for shorter journeys by active travel and other journeys by public transport, and
- noise at specific locations could also potentially be a challenge.

3.3.1 Vehicle ownership

Between 2005 and 2009 the number of licensed vehicles in the county increased by 3%. The numbers of vehicles continued to increase year on year until 2009 when there was a slight decrease in the numbers of licensed vehicles. The East Midlands and Great Britain both saw increases in licensed vehicles each year and the increases were higher than seen in Nottinghamshire (4.6% and 4.1% respectively). Table 15 below details the numbers of each type of motor vehicle in Nottinghamshire

Table 15: Number of licensed vehicles

No. of licensed vehicles (thousands)									
Nottinghamshire								East Midlands	Great Britain
Year	Cars	Motor cycles	Light goods	Heavy goods	Buses and coaches	Other vehicles	Total	Total	Total
2005	360	17	38	7	1	8	431	2,534	32,897
2006	363	19	37	7	1	8	435	2,566	33,369
2007	368	19	38	8	1	7	441	2,617	33,957
2008	372	19	38	8	1	8	445	2,654	34,206
2009	371	19	37	7	1	8	444	2,655	34,258

Source: 2010 vehicle licensing statistics

The percentage of households in the whole of Nottinghamshire without a car is lower than the national average. The number of household in Ashfield (28%) and Mansfield (29%) districts, however, have higher than the county and national average, meaning that they are more reliant on public transport, walking and cycling. The percentage of households in each of the districts with no car and with two or more cars is shown in table 16 below.

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Table 16: Car ownership levels

District	No. of households	Percentage of households with no car	Percentage of households with two or more cars
Ashfield	46,600	28%	26%
Bassetlaw	44,690	24%	31%
Broxtowe	45,445	23%	30%
Gedling	47,556	23%	30%
Mansfield	41,601	29%	26%
Newark & Sherwood	44,465	22%	33%
Rushcliffe	43,670	17%	40%
Nottinghamshire	314,027	24%	31%
England	20,451,427	27%	29%

Source: 2001 Census data

These figures disguise some wide variations between some inner urban areas (up to 50% of households without a car) and some of the more rural areas (up to 94% of households with a car). Generally, car ownership in the urban areas is lower than that in the district as a whole, reflecting the lack of a real alternative to the car outside some of the urban areas.

3.3.2 Environmental factors

Carbon emissions

Transport accounts for a high proportion of CO₂ emissions in the county, 31% of the total CO₂ emissions in Nottinghamshire, ranging from 37% of emissions in Broxtowe borough to 19% of emissions in Gedling borough. The proportion of CO₂ emissions from transport in Broxtowe borough is higher than those from domestic and industry/commercial purposes. Similarly, in Bassetlaw and Newark & Sherwood districts, the proportion of CO₂ emissions from transport is higher than those from domestic purposes and almost as high as those from industry/commercial purposes. It should be noted, however, that the districts with the highest CO₂ emissions from transport in the county all have major nationally strategic roads running through them (Bassetlaw - A1; Broxtowe - M1 and A52; and Newark & Sherwood - A1 and A46).

Air quality

There are currently six transport related air quality management areas (AQMA) in the county, all of which are due to exceedences of levels of nitrogen dioxide (NO₂). Five of the AQMA relate to the Highways Agency's managed motorway and trunk road network and are located at:

- M1/A6007 closest houses to east of M1 in Iona Drive and Tiree Close, Trowell
- M1/A609 closest houses to west of M1 on Derbyshire Avenue, Trowell
- M1/A609 closest house to west of M1 on Nottingham Road, Trowell
- M1/B600 houses on the Nottingham Road and Back Lane, Nuthall closest to the M1, and
- houses adjacent to the A52 (trunk road) from Nottingham Knight roundabout northwest to the borough/city boundary.

There is also one AQMA on the County Council's managed highway network which is located at:

- properties adjacent to the approaches to Trent Bridge and Lady Bay Bridge.

Monitoring has, however, shown that air quality is improving at each of the locations with NO₂ levels decreasing.

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Monitoring of air quality across the county has also identified two further locations where the borough councils may have to declare an AQMA. These sites are located at:

- A52, Stragglethorpe (a Highways Agency managed road)
- A60 Mansfield Road, Daybrook (a County Council managed road).

The LTP3 Evidence Base Report gives further details of locations that are close to annual mean objectives but do not require an AQMA to be declared.

Noise

Noise from transport networks can affect large numbers of people. The DEFRA 'Noise Action Plan for major roads outside agglomerations' identifies 'Important Areas' with respect to major road and rail noise where 1% of the population is affected by the highest noise levels. Locations where noise mapping indicates levels of at least 76 dB $L_{A10,18h}$ are to be investigated as a priority. There are an estimated 7,300 dwellings to be investigated due to noise from major roads across the East Midlands with 2,100 to be investigated as 'First Priority Locations' outside the first round agglomerations. The Noise Action Plan requires the County Council to investigate 'Important Areas' (giving priority to those containing 'First Priority Locations'). The following locations are identified as part of the 'First Priority Locations' identified in the First Round Agglomerations:

- sections of the M1 (Highways Agency managed road)
- sections of the A52 (Highways Agency managed road)
- sections of the A46 (Highways Agency managed road)
- rail line at Attenborough (managed by Network Rail), and
- A60 Trent Bridge and Loughborough Road, West Bridgford.

The following locations are identified as 'First Priority Locations' outside agglomerations in Nottinghamshire (excluding the M1, A52 and A46):

- Awsworth Lane, Awsworth
- A6002 Nuthall
- A606 Tollerton
- A6097 Gunthorpe/Lowdham
- A608 Annesley Hall
- A611 Annesley
- A38 Sutton in Ashfield (3 sections)
- A6075 Mansfield (3 sections)
- A60 (5 sections between Leapool and Ravenshead)
- A614 Rufford Country Park
- A6075 New Ollerton
- A617 Kelham
- A57 Worksop, and
- A619 Worksop.

3.3.3 Driver and rider casualties

Car drivers and passengers killed and seriously injured casualties

The numbers of car driver and passengers killed or seriously injured (KSI) casualties has decreased significantly and in 2009 the number of casualties had fallen by 47% when compared to the 1994-98 average (from 405 to 203 casualties); and by 27% when compared to 2005 (from 292 to 203 casualties). The reductions in casualties in Nottinghamshire between 2005 and 2009 far exceeds the 1% reduction in annual traffic mileage and the increase of 3% in the number of licensed cars in Nottinghamshire during the same period.

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When comparing 2009 with 2005, the numbers of car driver and passenger KSI casualties has decreased in each of the districts except Mansfield, where the number of casualties has increased in each of the last two years. The numbers of car driver and passenger KSI casualties in Mansfield (21 in 2009), however, remains low when compared to other districts.

Killed and seriously injured casualties involving young drivers

When comparing 2009 with 2005, the numbers of young driver KSI casualties has fluctuated but has ultimately increased by 12% (from 49 to 54 casualties). The proportion of young driver KSI casualties has also increased – in 2009, young driver KSI casualties accounted for over a third (37%) of all of the car driver KSI casualties in Nottinghamshire, compared to 29% in 2005.

Motorcyclist killed or seriously injured casualties

The numbers of motorcycle KSI casualties has decreased by 15% when compared to the 1994-98 average (from 133 to 113 casualties); and by 10% since 2005 (from 126 to 113 casualties). This decrease is significantly lower than all other road users but in line with the national picture on motorcycle casualties.

Motorcycles continue to represent significant numbers of road casualties, despite their low proportion of overall traffic. In 2009 motorcyclists accounted for 1% of traffic on Nottinghamshire's roads but 25% of all of the KSI casualties.

The greatest numbers of KSI motorcycle casualties involve riders of larger bikes over 500cc; whilst the largest numbers of slight casualties involve riders of smaller bikes up to 125cc. Historically, the majority of accidents have involved older riders on higher powered bikes but accidents involving teenagers riding mopeds and bikes up to 125cc now feature more significantly. This is reflected in the fact that between 2005 and 2009 the more urban areas of Broxtowe and Gedling have seen increases in the numbers of KSI motorcycle casualties.

Killed or seriously injured casualties where speed was a contributory factor

The numbers of KSI casualties where speed (either excessive speed or driving too fast for the conditions) was a contributory factor to the accident has decreased by 24% when comparing 2009 with 2005 (from 87 to 66 casualties). The number of killed and seriously injured casualties where speed was a contributory factor has significantly decreased in rural areas but has slightly increased in urban areas.

The number of fatal casualties where speed was a contributory factor to the accident, however, has doubled between 2005 and 2009 (from 9 to 18 fatalities); and in 2009 speed was a contributory factor in 43% of all of the fatal casualties in Nottinghamshire.

3.3.4 Vehicle crime

All of the districts have seen year on year decreases in the rate of theft of vehicles between 2007 and 2009. Bassetlaw has the highest rate of thefts of vehicles (4.1 per 1,000 population) although this has dropped from 6.5 per 1,000 in 2007.

All districts have shown year on year decreases in thefts from vehicles between 2007 and 2009 except for Rushcliffe which dropped from 11.0 per 1,000 in 2007 to 6.9 in 2008 but then increased to 7.7 per 1,000 in 2009. The rates of theft from vehicles in Rushcliffe have, however, seen decreases when comparing 2009 with 2007. Mansfield experienced the highest rates of thefts from vehicles both in 2007 (16.8 per 1,000) and in 2009 (9.3 per 1,000) although there has been a steady decrease in the rates of this crime.

The rate of vehicle interference and tampering has reduced in each district with the 2009 rate ranging from 0.8 per 1,000 in Mansfield to 1.3 per 1,000 in Bassetlaw.

3.3.5 Challenges

The percentage of households without a car varies significantly between districts, as well as by wards within those districts. The households without a car are much more reliant on public transport as well as walking and cycling for their everyday journeys and therefore it will be important to make sure that these people continue to be able to access essential services.

Whilst air quality in the county is generally good there remain problem areas due to transport. On the County Council managed roads these are due to queuing traffic at 'bottle necks', namely Trent Bridge and Lady Bay Bridge (as well as potentially on the A60 in Daybrook). The 'First Priority' location on the County Council managed highway that needs to be investigated due to noise levels from transport is also located on the approach to Trent Bridge. The nature of these locations makes it difficult to remedy the problems with infrastructure and therefore smarter choices measures are more likely to provide the solution. Smarter choices are, however, predominantly funded through revenue funding which historically has been difficult for the County Council to fund.

Further investigation of noise issues on a number of routes in the county also needs to be undertaken. The scale of the issues at these locations is yet to be determined but it is worth noting that this may become a higher priority during the lifetime of the LTP3.

Casualties amongst car drivers, riders and passengers have decreased significantly across the county but some issues remain. Young drivers and passengers accounted for over a third (37%) of all the car driver and passengers killed and seriously injured (KSI) casualties in Nottinghamshire and this number has increased during the period of the last LTP. Speed continues to be an issue in that it is a contributory factor in over 40% of fatal accidents and this percentage doubled during the last LTP period. Whilst motorcycle KSI casualties have decreased the KSI casualties are still disproportionate to their numbers in that they represent only 1% of the road users but account for 25% of all of the KSI casualties in the county.

3.4 Passenger transport

Successes

During the last LTP period the County Council has been successful in:

- increasing the numbers of people using buses (by 8%) as well as trains over the Plan period
- maintained our high levels of access to services by public transport, with the County Council awarded Beacon Status for 'improving accessibility' in 2008
- worked in partnership with operators to provide quality services that people are satisfied with through improved bus and 'at stop' infrastructure
- securing investment to improve journey times and frequency of services on rail routes, and
- working with operators to improve surface access to airports.

Challenges

The challenges that we face over the LTP3 period include:

- maintaining the existing levels of the bus network
- addressing the lack of alternatives to the private car for some journeys from rural areas
- working with operators to monitor and improve bus punctuality
- the development and introduction of multi-operator and multi-mode smart card ticketing, and
- addressing the historic under investment in the rail network that serves Nottinghamshire.

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3.4.1 Passenger transport network

Nottinghamshire has an extensive passenger transport network made up of commercial and County Council supported services.

Bus

Buses are the major provider of passenger transport across the county. The most recent survey of public satisfaction with local bus services (2010) found that over 70% of people in Nottinghamshire are satisfied with their local bus services, the highest rate of all the shire counties.

Access to bus services is good across most of the county, although there are fewer services in some of the more rural parts of the county, especially in the evenings and on Sundays. To supplement the commercial bus network, the County Council currently spends approximately £7m per year to provide additional services. Without the County Council providing support through subsidising services, many households would find it difficult to access services. Table 17 below shows the percentage of people in Nottinghamshire in 2010 with access to an hourly or better bus service, with and without the County Councils' support.

Table 17: Accessibility of public transport networks in 2010

Percentage of households within 800m of a bus stop with an hourly or better bus service Monday to Saturday (0600-1800)		Percentage of households within 800m of a bus stop with an hourly or better bus service Monday to Saturday (1800-2400)		Percentage of households within 800m of a bus stop with an hourly or better bus service Sunday (1000-1800)	
All services	Without County Council supported services	All services	Without County Council supported services	All services	Without County Council supported services
96%	91%	83%	71%	85%	76%

Source: Nottinghamshire County Council

Locations where buses have frequent delays because of highway conditions (such as queuing traffic or parked cars) are identified in partnership with operators. Work has been undertaken to improve conditions at many locations but there are still a number of sites across the county that have not yet been investigated to determine the reality of the problem, the length of delay or the feasibility of a solution.

Community transport

Community minibus and social car schemes play a key role in providing transport to help older people, people with mobility difficulties, or those without access to conventional public transport to access key services and destinations. A number of services are provided across the county, some of which are subsidised by the County Council. There are, however, shortfalls in the services available, particularly in parts of Broxtowe, Gedling and Rushcliffe districts.

Light rail

The light rail system, Nottingham Express Transit Line 1, provides services between the city centre and the northern local centre of Hucknall. Line 1 is extensively within the city but serves two stops in the county, and provides opportunities to access employment areas along its route. Two further lines are proposed which would serve the areas south (to Clifton) and west (to Beeston) of the city.

Rail

Rail services provide important connections both within the county and between Nottinghamshire and elsewhere. The coverage of the rail network (as shown in figure 12 below) is relatively good.

Several improvements to the rail network and services are already planned, including:

- renewal of the track at Nottingham rail station to allow trains travelling through it to run more quickly and reliably. The station itself will also be upgraded to provide improved facilities, and
- improvements to the Midland Mainline to improve journey times between London and Leeds.

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Relatively slow journey times and frequency of services along several routes are issues that make services less attractive than they could be and include:

- services from Nottingham to London, Sheffield and Leeds due to historical under investment in the Midland Mainline (it has received only 2% of the total spent on the inter-city routes in the last decade)
- services from Nottingham to Newark and Lincoln
- services from Newark and Retford to London
- services from Nottingham to Grantham and Skegness, and
- services between Lincoln, Retford, Worksop and Sheffield.

Time savings from higher journey speeds could also allow for selected stations to get improved frequency of services along some of the above routes.

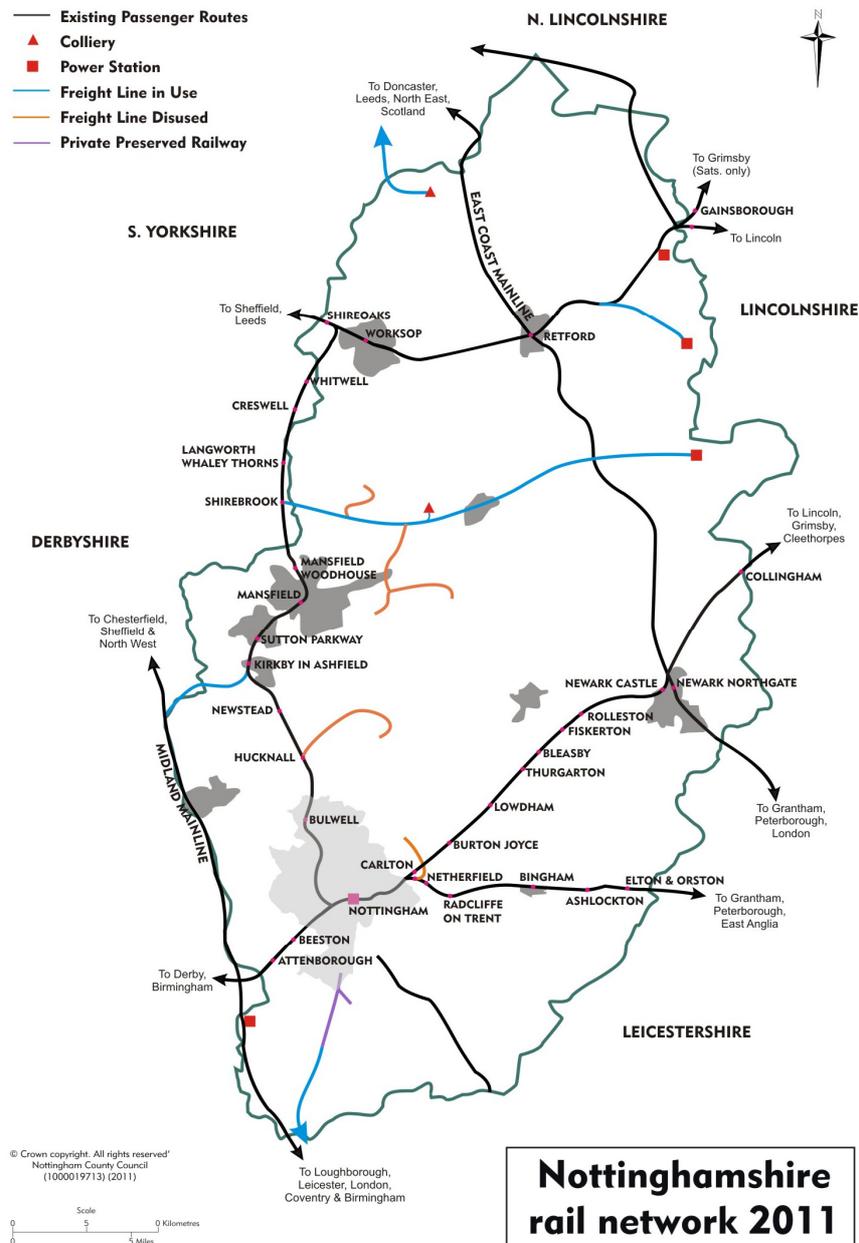


Figure 12: Nottinghamshire rail network
Source: Nottinghamshire County Council

3.4.2 Passenger transport infrastructure

Nottinghamshire County Council's Transport & Travel Services has its own fleet of over 180 vehicles. The average age of these vehicles is 4.5 years and 81.7% of the vehicles have Euro 3 engine type or better. A survey of commercial operators undertaken in 2009/10 found that:

- 76.4% of respondents' vehicles are aged under 10 years
- 60.3% of respondents' vehicles have Euro 3 engine type or better (Euro 3 - 37.1%; Euro 4 - 15.2%; Euro 5 - 7.8%)
- 66.9% of respondents' vehicles are fully accessible (compared to 28.95% in 2006).

There are approximately 6km of bus lanes; and 61 traffic signals with bus priority along well used bus routes in the county. Such measures help to ensure the punctuality of buses and consistency of their journey times to make the services more attractive to the public. 'Real time' information at bus stops (telling you the actual length of time until the next bus arrives rather than timetable information) is being introduced across the county. Further information on bus infrastructure is included in Section 6.2 – Provision of an affordable, reliable and convenient passenger transport network, of this Plan.

Each of the train operators has refurbished or upgraded its rolling stock during the lifetime of the second LTP.

Despite the very strong business case for the electrification of the Midland Mainline this has not been prioritised in the recent Government announcements on electrification of rail services.

3.4.3 Patronage

In 2009/10 over 35 million passenger bus journeys originated in the county, an increase of almost 8% since 2005/06 and an increase of 43% since 2000/01. Rail patronage has also significantly increased in Nottinghamshire; between 2005/06 and 2008/09 the numbers of rail journeys increased by 37%, and by 64% since 2001/02. The rate of patronage growth on both buses and rail in Nottinghamshire exceeds levels of national patronage growth.

There are currently 26 rail stations in Nottinghamshire. Whilst most stations have seen increased usage, substantial patronage growth has been seen at stations in Beeston, Newark, Retford and Worksop. Large reductions in rail patronage occurred at Newstead, and Sutton Parkway stations. Newark to London is the 6th largest flow of passengers on the East Coast Mainline and has seen higher rates of growth than much larger catchment areas such as Leeds, Newcastle or Edinburgh. Similarly, considerable increases in patronage have been seen at Mansfield, (10%), Retford (45%) and Sutton in Ashfield (27%).

Whilst there is currently limited information on passenger load factors, the information available identifies overcrowding:

- on peak services between London, Nottingham and Leicester
- on peak services between Nottingham and Birmingham via Derby, and
- all day on the Norwich-Liverpool service on the section between Nottingham and Liverpool.

3.4.4 Punctuality of services

Recorded punctuality of bus services during the last four years has fluctuated significantly, although an audit of the monitoring of punctuality measurements highlighted several errors in the data and therefore this data should be viewed with caution. At the end of 2010, 85% of buses were recorded as being on time; and waiting times for buses along frequent service routes are, on average, within $\frac{3}{4}$ of a minute of their scheduled arrival time.

Over 90% of all trains arrive within 10 minutes of their scheduled arrival time, with the exception of East Coast Mainline services (87%). East Midlands Trains (EMT) has significantly improved

punctuality since taking over the franchise in November 2007. EMT has improved the local services from being the worst performing regional operator to being the third best (out of 10). Punctuality on the East Coast Main Line has also improved, albeit from a much lower starting point.

3.4.5 Ticketing and concessionary fares

A range of ticket types are available in the county, including daily, weekly, monthly, three and six monthly, as well as annual tickets. Three of the 25 operators in the county currently offer smartcards (NCT, NET and Trent Barton) although these are not wholly transferable across operators or on trains.

Approximately 82% of those eligible to a concessionary pass due to age have taken up the pass, equating to over 165,000 passes. The age criteria for entitlement to a concessionary pass is now in line with the increase in state pension age for women and therefore there will be a growing proportion of the 60-64 age group who are not entitled to a pass. In addition to this there are approximately 10,000 passes issued to people on the grounds of disability.

3.4.6 Surface access to airports

Whilst there are no airports within Nottinghamshire there are two airports close to the county – East Midlands Airport located close to the south of the county; and Robin Hood Airport located close to the north of the county. Both of the airports have frequent bus services to them from the county; and patronage of the services to both East Midlands and Robin Hood airports has grown massively since they commenced.

3.4.7 Challenges

Maintaining the existing levels of bus services in the county will be a major challenge. The reduced levels of Central Government funding available to the County Council will undoubtedly impact on the amounts of funding the Council has available to subsidise bus services. Reductions in funding may result in some communities facing a reduced level of service or potentially no services at all. In some areas there may also be an increase in the distance walked to the nearest bus stop with a suitable frequency.

There are several challenges regarding public transport infrastructure to ensure that bus and rail remain easy to use and attractive to users. Punctuality of services is essential yet the monitoring of bus services shows that 16% in 2010 were late. Closer working with operators is therefore required to firstly monitor the services more accurately and also to identify the locations where services are delayed. Seamless smartcard ticketing across different operators and modes (bus and rail) is critical to delivering a first class public transport system and therefore the Council will work closely with passenger transport operators to develop such a system. Several of Nottinghamshire's neighbours have different 'real time' systems, which are not necessarily compatible with each other. The County Council will therefore need to ensure that any 'real time' infrastructure introduced in the county is compatible with all of the relevant cross-boundary bus services.

On the rail network, the historical under investment in the Midland Mainline routes has caused significant challenges to the delivery of improved journey times and frequency. If rail patronage continues to grow at its current rate over-crowding (as seen in South East) may also occur if rolling stock is not increased in line with patronage growth.

3.5 Pedestrians and cyclists

Successes

During the last LTP period the County Council has been successful in:

- improving the condition of footways in district and local centres
- maintaining the Rights of Way network to a higher standard than both regional and national levels, and
- reducing the numbers of pedestrian casualties by 37%; and pedal cycle casualties by 22%.

Challenges

The challenges that we face over the LTP3 period include:

- increasing the levels of active travel by promoting walking and cycling (and the associated funding issues surrounding this)
- addressing the gaps in the cycle network
- ensuring value for money on new footway and cycleways (particularly in rural areas)
- effectively monitoring and maintaining the Rights of Way network, and
- addressing the standards of all of the footways in the county could potentially be a challenge.

3.5.1 Footways

The County Council is currently undertaking an audit to determine the full extent and condition of its footways. This work will be completed during 2010/11 and will be used for prioritisation of footway repairs and maintenance. The condition of the category 1, 1a and 2 footways (which are footways with medium to high usage – generally in local shopping areas) is currently monitored and shows improvements as detailed below in table 18.

Table 18: Condition of the category 1, 1a and 2 footways in Nottinghamshire

	2005/06	2006/07	2007/08	2008/9	2009/10
Percentage of category 1, 1a and 2 footways where maintenance should be considered	26%	26%	22%	27%	24%

Source: Nottinghamshire County Council

3.5.2 Rights of Way network

There are over 4,000 designated Rights of Way in the county totalling over 2,500km in length. The number of footpaths far outweighs each of the other categories, which highlights that the network is much more accessible on foot than by any other means, although 31% of the network length is available to equestrians and cyclists, which is higher than both the national (22%) and regional (20%) averages. These figures, however, assume that all of the routes are usable but the fragmentation and maintenance issues of the bridleway network means that routes are frequently not available to all users. There is no formal mechanism for recording and measuring the condition of the Rights of Way network. Until recently English and Welsh highway authorities used the national indicator (BVPI 178) to record and monitor performance. The national performance indicator, however, was found to be inadequate and inconsistent due to the methodology used to record data, particularly the random nature of the surveys which did not take into account strategic and targeted improvements.

3.5.3 Local cycle network

There are over 350km of cycle routes in Nottinghamshire, as detailed in table 19 below, of which 17% is lit. In addition to the formal cycle network detailed above there is also a suggested network of signed and unsigned advisory quieter roads to cycle on which avoid roads with large volumes of traffic. These are often used as an alternative where formal facilities cannot be provided because it is not feasible to do so.

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Table 19: Length of cycle network in Nottinghamshire

Length of cycle network (km) in Nottinghamshire			
On-road cycle lane	Off-road shared use	Off-road cycle track	Total
21	158	175	354

Source: Nottinghamshire County Council

Despite sustained expenditure on the cycle network in Nottinghamshire, mapping has identified that there are gaps in the network that could have the impact of discouraging (or in the worst case scenario – preventing) people from cycling to their required destination.

3.5.4 Cycling levels

Table 20 below shows the changes in cycling levels in Nottinghamshire when compared to 2005 levels. Poor summer weather in 2008 and 2009 has impacted on cycling levels, and in 2009, levels of cycling in the county have decreased slightly when compared to 2005 levels. Some districts have seen significant fluctuations in the levels of cycling during the period 2005 to 2009 but cycling levels have increased in the districts in the south of the county and Ashfield, whilst cycling levels have decreased in the districts in the north of the county.

Table 20: Changes in cycling levels in Nottinghamshire when compared to 2005

Changes in levels of cycling in Nottinghamshire when compared to 2005 levels			
2006	2007	2008	2009
0%	+2%	-3%	-2%

Source: Nottinghamshire County Council

When comparing 2009 with 2005, cycling levels in rural areas of Nottinghamshire (including leisure routes) have increased by 11%, whereas cycling levels in urban areas has decreased by 5%.

3.5.5 Killed and seriously injured casualties

Pedestrian killed or seriously injured casualties

The numbers of pedestrian killed or seriously injured (KSI) casualties has seen steady decreases and in 2009 the number of casualties had reduced by 58% when compared to the 1994-98 average (from 143 to 60 casualties); and by 37% when compared to 2005 (from 95 to 60 casualties). Despite starting from a low base, the numbers of pedestrian KSI casualties have decreased in each of the districts when comparing 2009 with 2005, except Ashfield where there has been no change.

When comparing 2009 with the 1994-98 average, Nottinghamshire has seen more significant decreases in the number of pedestrian KSI casualties than the regional and national averages.

Pedal cyclist killed or seriously injured casualties

The numbers of pedal cyclist KSI casualties has decreased year on year and in 2009 the number of casualties had fallen by almost 56% when compared to the 1994-98 average (from 86 to 38 casualties); and by over 22% when compared to 2005 (from 49 to 38 casualties).

When comparing 2009 with 2005 the numbers of pedal cyclist KSI casualties has decreased in each of the districts except Broxtowe and Rushcliffe. Whilst there have been increases in the number of cyclist KSI casualties in Broxtowe and Rushcliffe, the actual numbers of casualties in 2009 are still small, 12 and 7 respectively. Both Broxtowe and Rushcliffe districts also started from a very low base (4 and 3 casualties respectively) and have seen significant increases in cycling levels (5% and 12% respectively) during the same period.

When comparing 2009 with the 1994-98 average, Nottinghamshire has seen more significant decreases in the number of pedal cyclist KSI casualties than the regional and national averages. But

the actual number of casualties is higher than all the other authorities in the region, although it should be noted that the number of casualties in Nottinghamshire also started from a higher base figure.

3.5.6 Cycle theft

The rate of thefts of pedal cycles is highest in Newark & Sherwood (3.2 per 1,000 population in 2009) despite decreases in the rates of theft. The rates of thefts of pedal cycles has, however, increased in Ashfield, from 1.5 per 1,000 in 2007 to 1.7 per 1,000 in 2009 and has shown no improvement in Broxtowe between 2007 and 2009.

3.5.7 Challenges

The historical lack of data on the length and condition of the majority of the footway network in the county means that we are currently unable to determine an acceptable condition level or the amount of investment required to bring the footway network up to this level. The County Council are, however, completing this work and will soon be able to determine the severity of any work required.

The current design standards for footways and cycleways make it difficult to justify the costs of provision in rural areas where usage may be low. Such footways can provide essential links to services and therefore still need to be considered. A review of the existing footway standards will need to be undertaken to ensure that accessibility improvements can be delivered in rural areas.

Although there is an extensive public Rights of Way network in the county it is assumed that all of the routes are usable whereas the fragmentation and maintenance issues of the network means that routes are frequently not available to all users. There is also no formal mechanism for recording and measuring the condition of the Rights of Way network. The County Council will therefore need to continue to review the mechanisms of monitoring the network effectively. It is also important that the existing Rights of Way network is better integrated into the wider highway network to maximise its usage.

Increasing walking and cycling levels will be a major challenge during the lifetime of the LTP3, as it is vital to deliver the objectives of the LTP3 (particularly those relating to journey times and health) and will require a reversal of current trends in some districts. A crucial element of this will be promotion of facilities and the benefits of undertaking active travel. The promotion of cycling and walking is funded primarily from limited County Council revenue funding. The reductions in funding from Central Government mean that this funding will be constricted even further and therefore it will be essential that other funding sources are secured to fund promotional measures in order to maximise the walking and cycling networks.

3.6 Other significant challenges

3.6.1 Peak oil production

It is predicted that oil production will plateau in the near future, possibly as early as 2013. It is anticipated that costs of transport (as well as highway maintenance and improvements) will become more expensive following this date and therefore it will be important to investigate alternative fuel sources, as well as promoting and providing for alternative forms of transport other than the private car.

3.6.2 Economic factors

Current economic climate

Commentators on the economy are cautious that the current economic situation is uncertain and that there is the possibility that the economy could worsen again and experience a double-dip recession leading to further job losses, putting further pressure on employment opportunities. The reductions in public sector funding announced on 20 October 2010 will almost certainly result in significant job

losses, possibly resulting in people having to travel further for employment opportunities. The reductions in public sector jobs could affect Nottinghamshire particularly harshly given that seven of the ten largest employers in the county are public sector organisations. It is therefore important that people are able to access alternative employment and training opportunities and have transport choices to enable them to access such opportunities.

Funding

On 20 October 2010 it was announced that as part of Government's Comprehensive Spending Review, the Department for Transport's funding for the period 2011-2015 would be reduced by 15% in real terms. The subsequent capital allocations for local transport measures were announced in December 2010. The integrated transport block for Nottinghamshire in 2011/12 represents a reduction in funding of £5.73m or 46% in comparison to the initial 2010/11 funding allocations (before the Government delivered a 25% in-year cut in June 2010). Nottinghamshire's highways capital maintenance resources, however, have increased by £0.65m or 6% in comparison to 2010/11 funding allocations (which included a separate revenue allocation for de-trunked roads). The reductions in integrated transport block funding will result in the County Council being unable to deliver the range of transport improvements seen in the last 10 years.

Deprivation

There are considerable variations in the deprivation levels across the county. Deprivation levels are highest in the urban parts of north west Nottinghamshire, particularly in Ashfield, Mansfield and Worksop. Mansfield is the most deprived district in Nottinghamshire and is within the 10% most deprived districts in England. Ashfield and Bassetlaw are in the most deprived third of English districts.

The spatial variation in employment rates and qualification levels correlates closely with other socio-economic indicators for the county, with higher levels of performance in the south of the county, and lower levels in the north and west. Qualification levels in the worst performing districts are significantly below the regional and national averages. In December 2009 the employment rates in the county ranged from 64% in Mansfield to 77% in Rushcliffe compared to the national average of 71% and regional average of 72%. Employment rates were also below the national average in Ashfield (67%).

The median gross weekly earnings of Nottinghamshire full-time workers is £446.00 per week, compared to £456.60 for the East Midlands and £488.70 for the UK. Full-time workers in Mansfield are the poorest paid in Nottinghamshire with median gross weekly earnings of £404.30, whereas workers in Rushcliffe are the highest paid, earning £470.80 per week.

3.6.3 Growth

Population changes

Between 2008 and 2026 the population of each district except Bassetlaw and Mansfield are expected to increase at a rate higher than the national average. Growing numbers of people are choosing to live in the rural or semi-rural areas of the county which has implications on how people choose to travel to access key services.

Nottinghamshire, like most areas of the country, has an ageing population. Increases in the number of people of pensionable age and over are projected in each district between 2008 and 2026 – the lowest being a 33.5% increase in Broxtowe with the highest in the rural districts of Bassetlaw (52.2%), Newark & Sherwood (49.6%) and Rushcliffe (46.0%). The proportion of older people compared to the whole county population is also projected to increase in each district. As people get older, independent travel often becomes more difficult and if public transport is not available or accessible this can present problems of isolation, particularly in rural areas where the largest increases of older people are expected in Nottinghamshire.

Housing

The recent dismantling of the regional bodies and abandonment of regional strategies has resulted in uncertainty on the numbers of new housing in the whole region. This has delayed the progress of the district council local development frameworks in most districts in Nottinghamshire, which impacts on the ability to effectively plan for growth. At the time of publication only Newark & Sherwood district have been to Examination in Public on their housing plans.

3.6.4 Health and disability

The 2001 Census shows that 20% of the population of Nottinghamshire has a limiting long-term illness, which is above both regional (18.4%) and national (17.9%) averages – only Rushcliffe district (15.6%) is lower than the national average.

Mansfield has the highest proportion of 'disabled' people with a rate of 26.7%. This is followed by Bassetlaw (23.9%), Broxtowe (22.7%) and Ashfield (21.9%). These four districts all have rates well above that of the East Midlands (19.2%) and the UK (18.6%). A similar pattern is evident when looking at the figures for 'Disability and Discrimination Act (DDA) and also work limiting disabled' but the pattern for 'DDA only disabled' is quite different with only Broxtowe (5.6%), Bassetlaw (5.4%) and Ashfield (4.4%) being marginally above the regional figure of 4.3%. The districts with the most numbers of people on the Visual Impairment Register in 2007 were Gedling, Bassetlaw and Ashfield, whilst those with the fewest were Rushcliffe and Mansfield. In Nottinghamshire in March 2008 there were 140 dual sensory impaired people over the age of 18 although the majority of these were over 65 years of age.

When comparing the 2006-08 figures with 2003-05 figures, the percentage of obese adults (aged 16 and over) has decreased in each of the districts in the county, compared to a slight increase in England. The percentages of obese adults in Ashfield and Mansfield, however, remain higher than the average in the East Midlands and England. Child obesity levels in Ashfield, Bassetlaw and Mansfield are higher than the average in England, Rushcliffe has the lowest child obesity levels in the county.

Sport England's Active People Survey results indicate that there has been a slight increase in adult participation in sport and active recreation each year at the national and regional level whilst in the county the rate fell in 2008/09 (the most recent results). At the district level participation in sport and active recreation increased in Bassetlaw and Newark & Sherwood each year. Conversely, Ashfield experienced decreases each year resulting in Ashfield's adult participation rate being the lowest in the county. When comparing 2008/09 and 2005/06 decreases were also seen in Broxtowe and Rushcliffe. Rushcliffe, however, maintains the highest activity rate in the county (despite significant fluctuations in each of the years), just ahead of Bassetlaw. It is currently unsure whether the information gathered through this survey will be available in the future.