8.2 Delay on the network

In 2007, the East Midlands Development Agency (emda) commissioned a study to identify the economic costs of congestion to the East Midlands region's economy. The study quantified both the 'direct' and 'indirect' costs of congestion. The report recognised that high levels of congestion result in a major cost to the regional economy with direct and indirect costs amounting to approximately £935m per year. The study looked at the distribution of economic costs by sub-region within the East Midlands. The 'Three cities' sub-region was found to incur the highest cost of congestion – £500m per year, including direct and indirect impacts. It should be noted that this 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.

Table 29 below shows the estimated direct costs of congestion on non-trunk routes for the relevant housing market areas in Nottinghamshire.

Table 29: 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

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 the Greater Nottingham part of Nottinghamshire. The results of the congestion survey showed significant morning peak congestion inbound on many of the radial routes into the 'Three cities' as well as Melton Mowbray, Loughborough and Coalville.

To monitor delay on the network, journey time surveys are undertaken annually on each of the routes into Nottingham City and within the four largest market towns in the north of the county – Mansfield, Newark, Retford and Worksop. The results of these surveys are detailed in the sections below.

8.2.1 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 30 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. Between 2008 and 2010 journey times have reduced significantly in Retford (by 23 seconds per mile) and Mansfield (by 12 seconds per mile). Also detailed below are maps (figures 68-75) showing the 2010 average speeds along inbound and outbound routes into each of the market towns during the morning peak.

Table 30: Average journey times during the morning peak in the market towns

		Morning peak (0730-0930) inbound					
		Average speed (mph)			Average journey time per mile (minutes)		
Location	Route length (miles)	2008	2009	2010	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

Mansfield

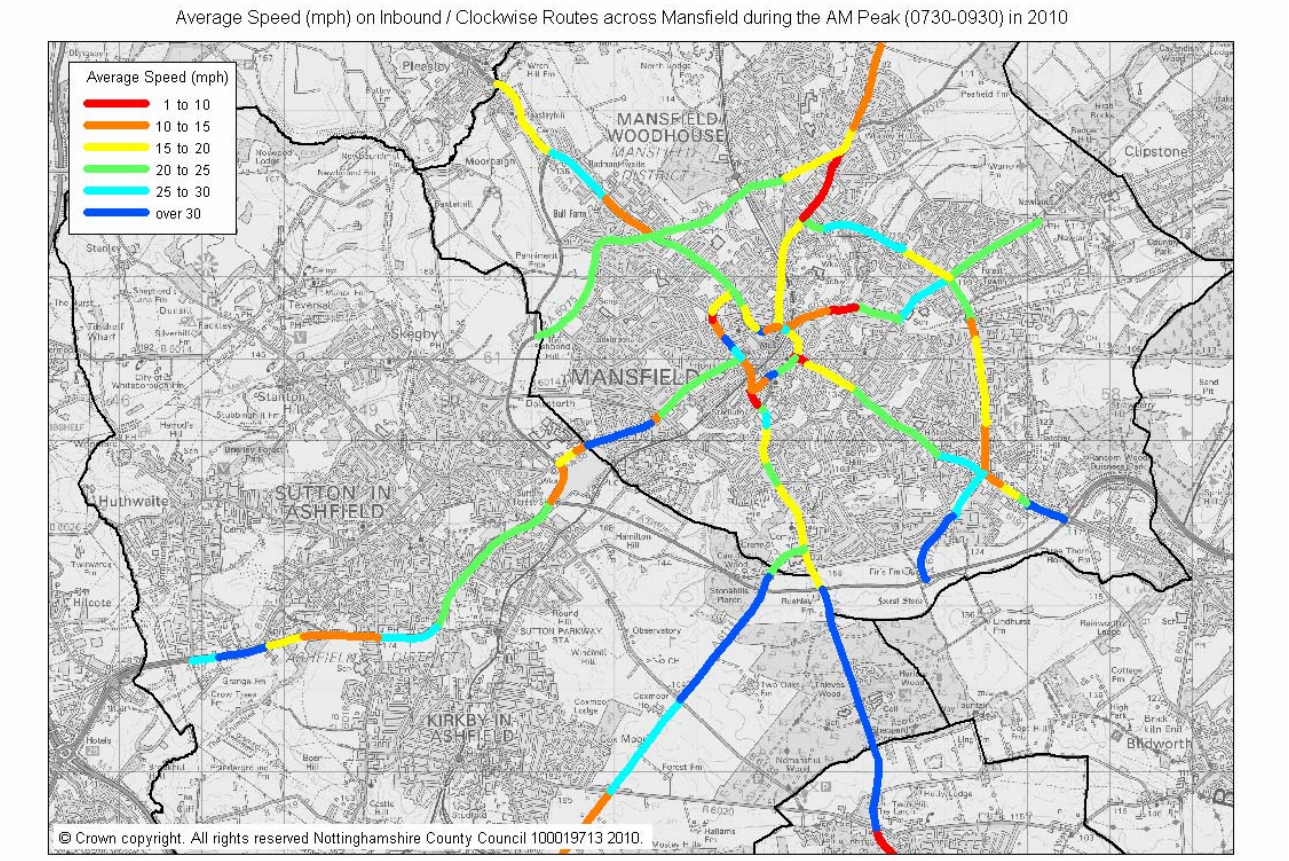


Figure 68: Average inbound journey time speeds in Mansfield during the morning peak
Source: Nottinghamshire County Council

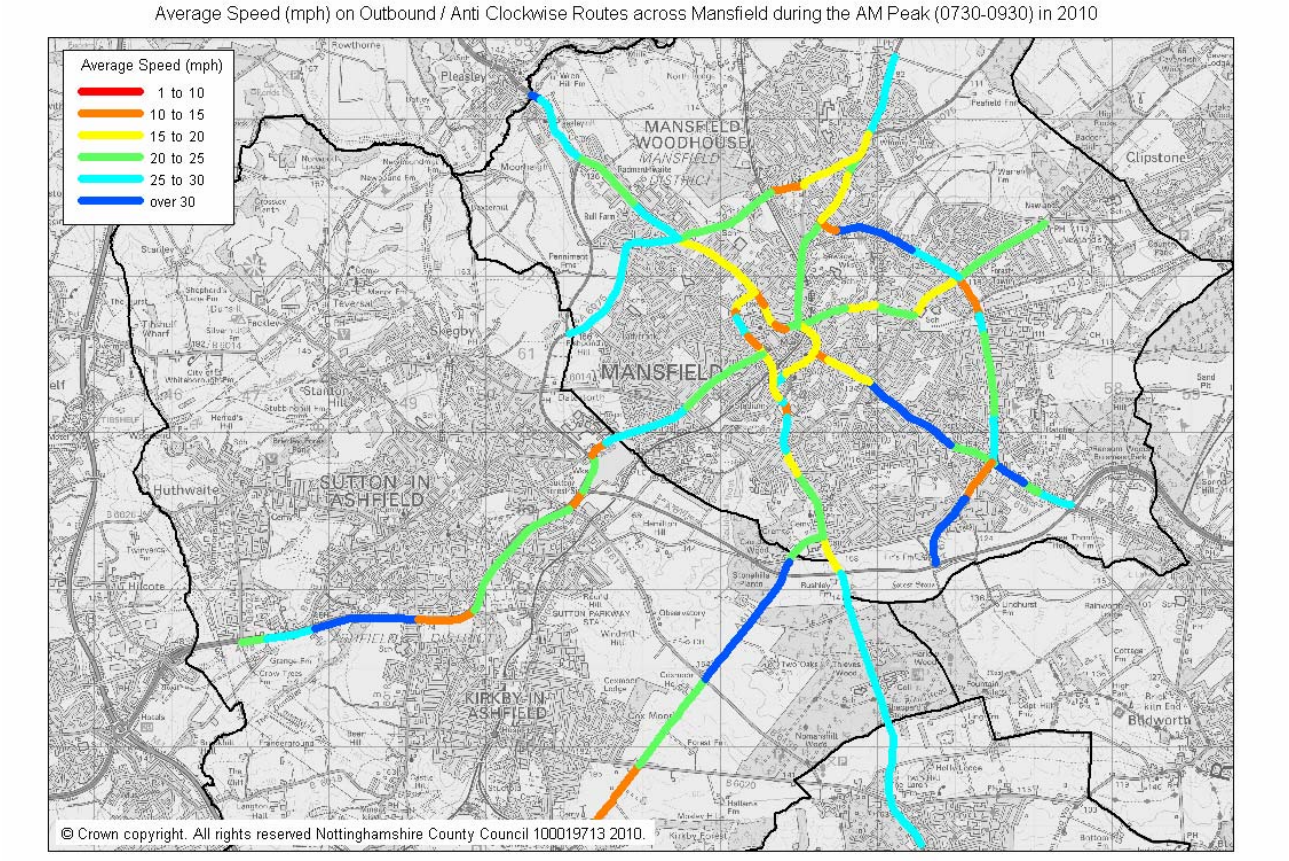


Figure 69: Average outbound journey time speeds in Mansfield during the morning peak
Source: Nottinghamshire County Council

Newark

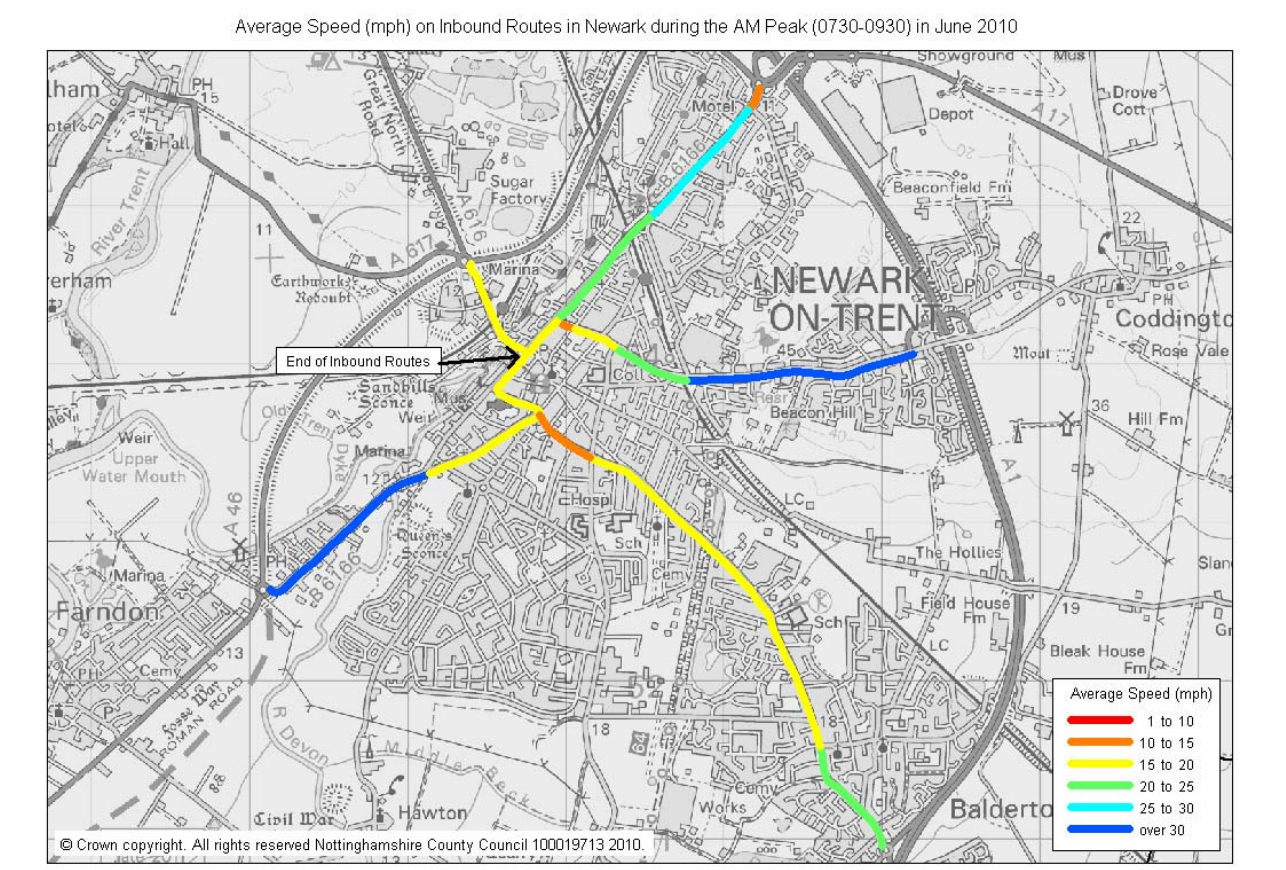


Figure 70:: Average inbound journey time speeds in Newark during the morning peak
Source: Nottinghamshire County Council

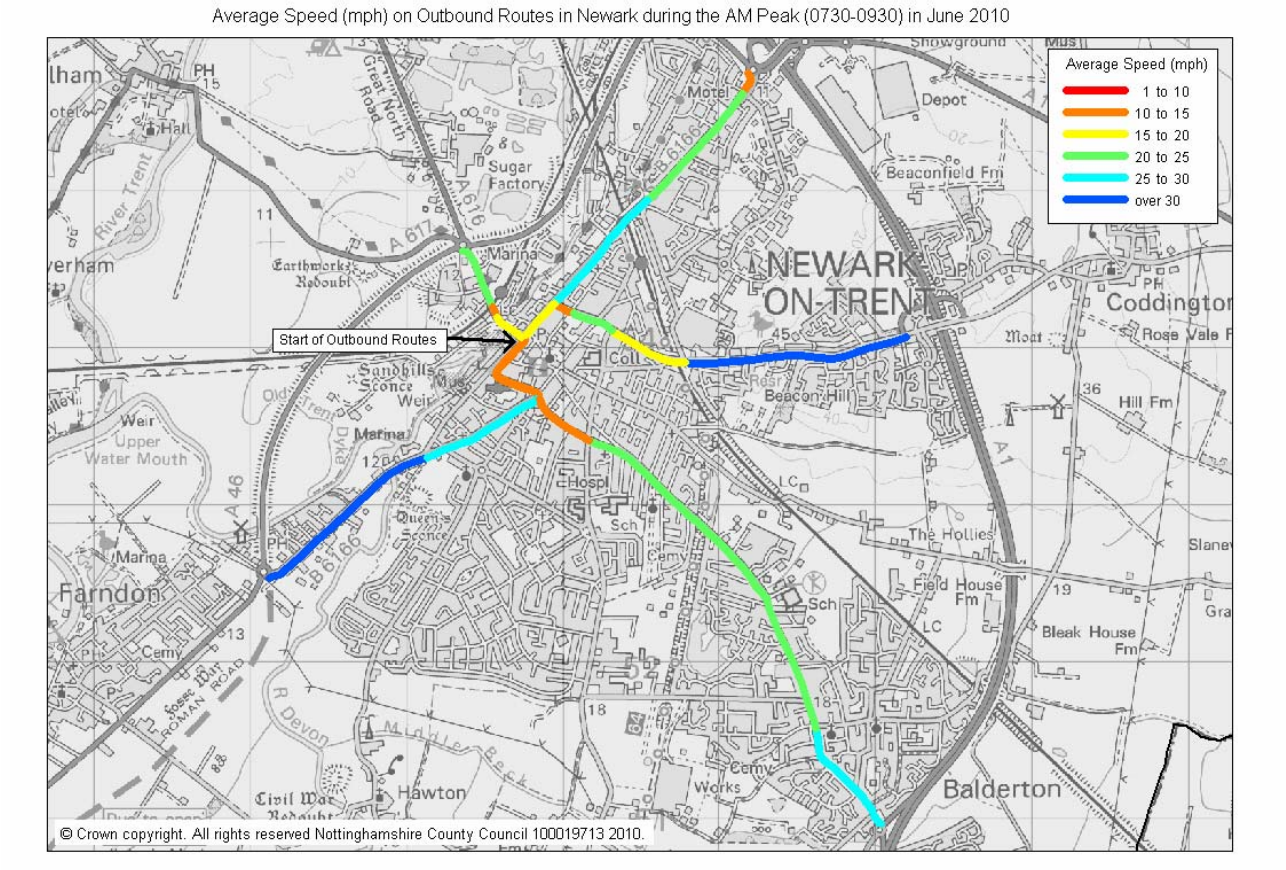


Figure 71: Average outbound journey time speeds in Newark during the morning peak
Source: Nottinghamshire County Council

Retford

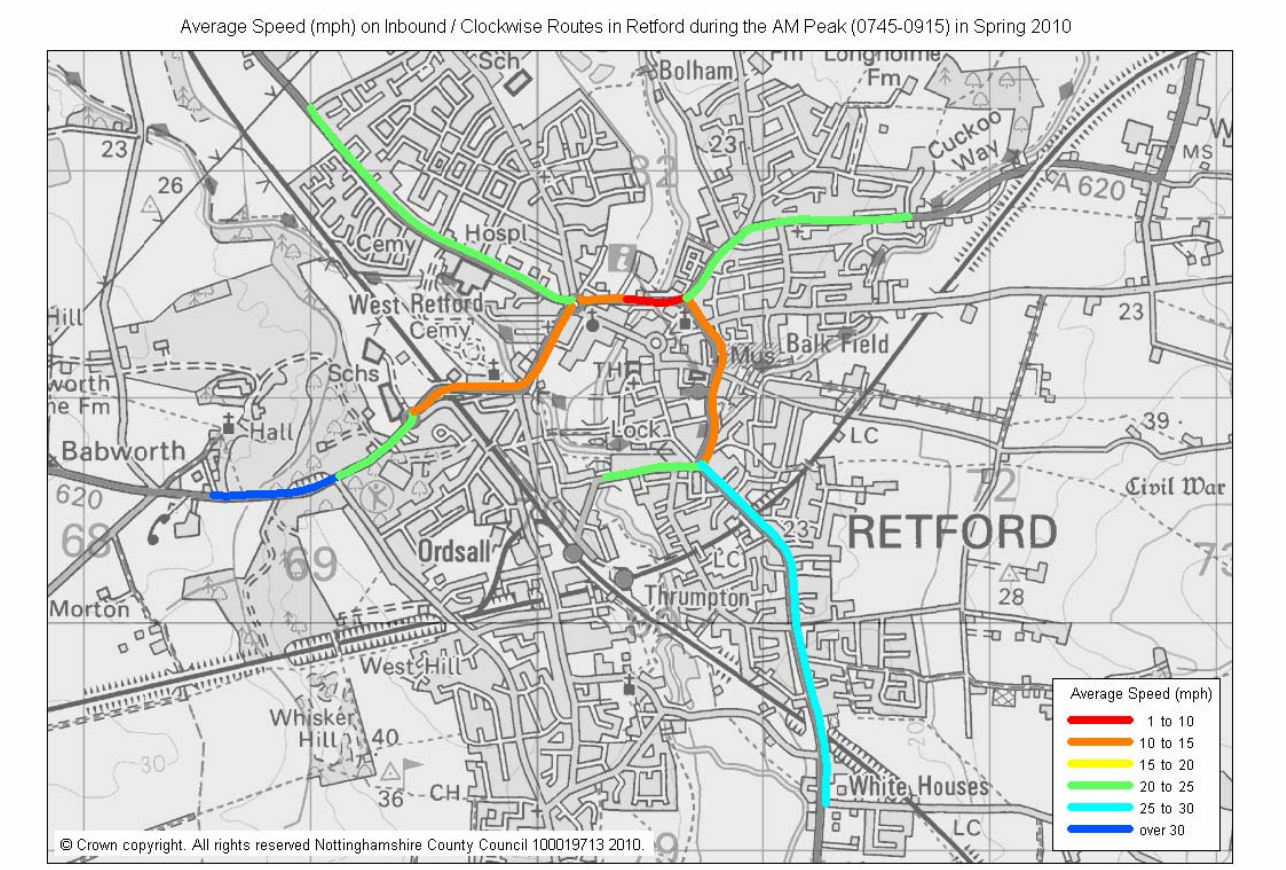


Figure 72: Average inbound journey time speeds in Retford during the morning peak
Source: Nottinghamshire County Council

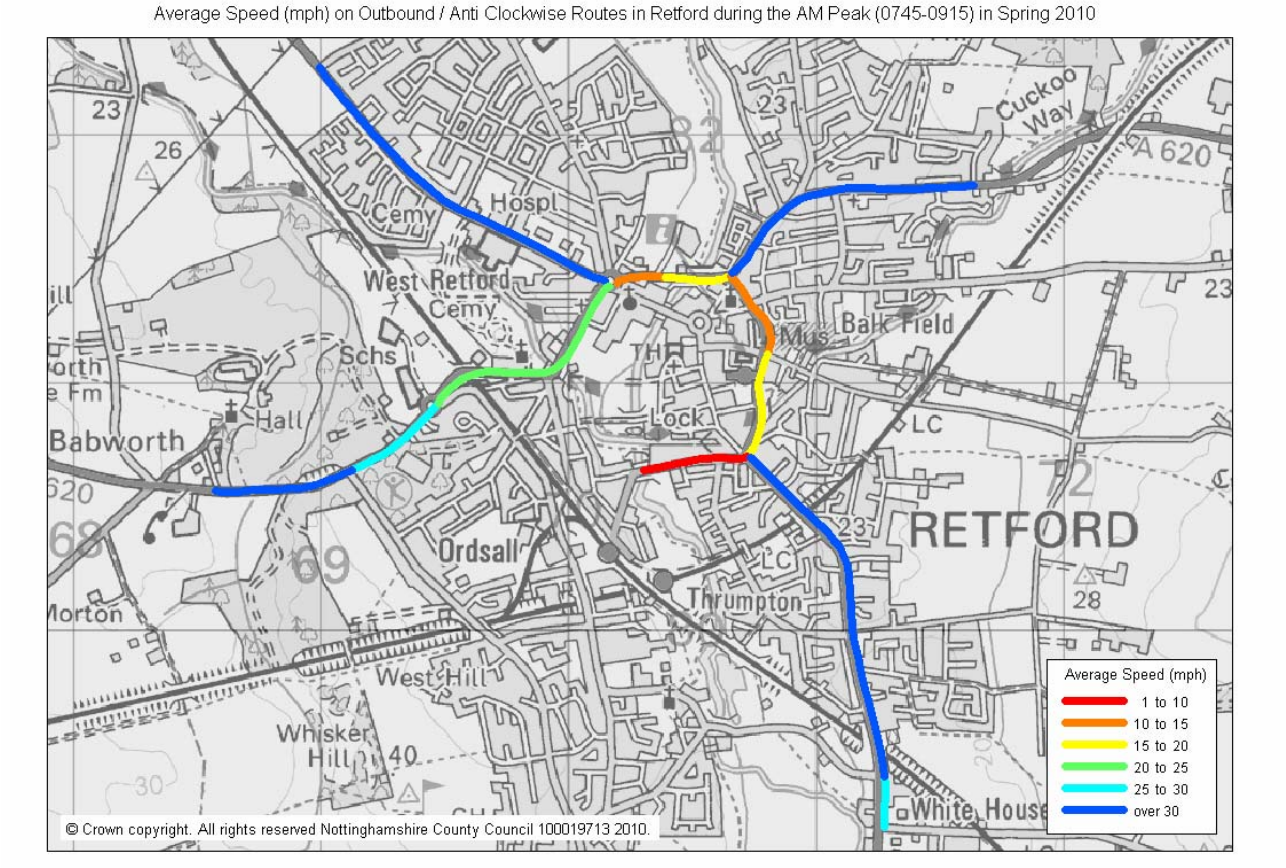


Figure 73: Average outbound journey time speeds in Retford during the morning peak
Source: Nottinghamshire County Council

Worksop

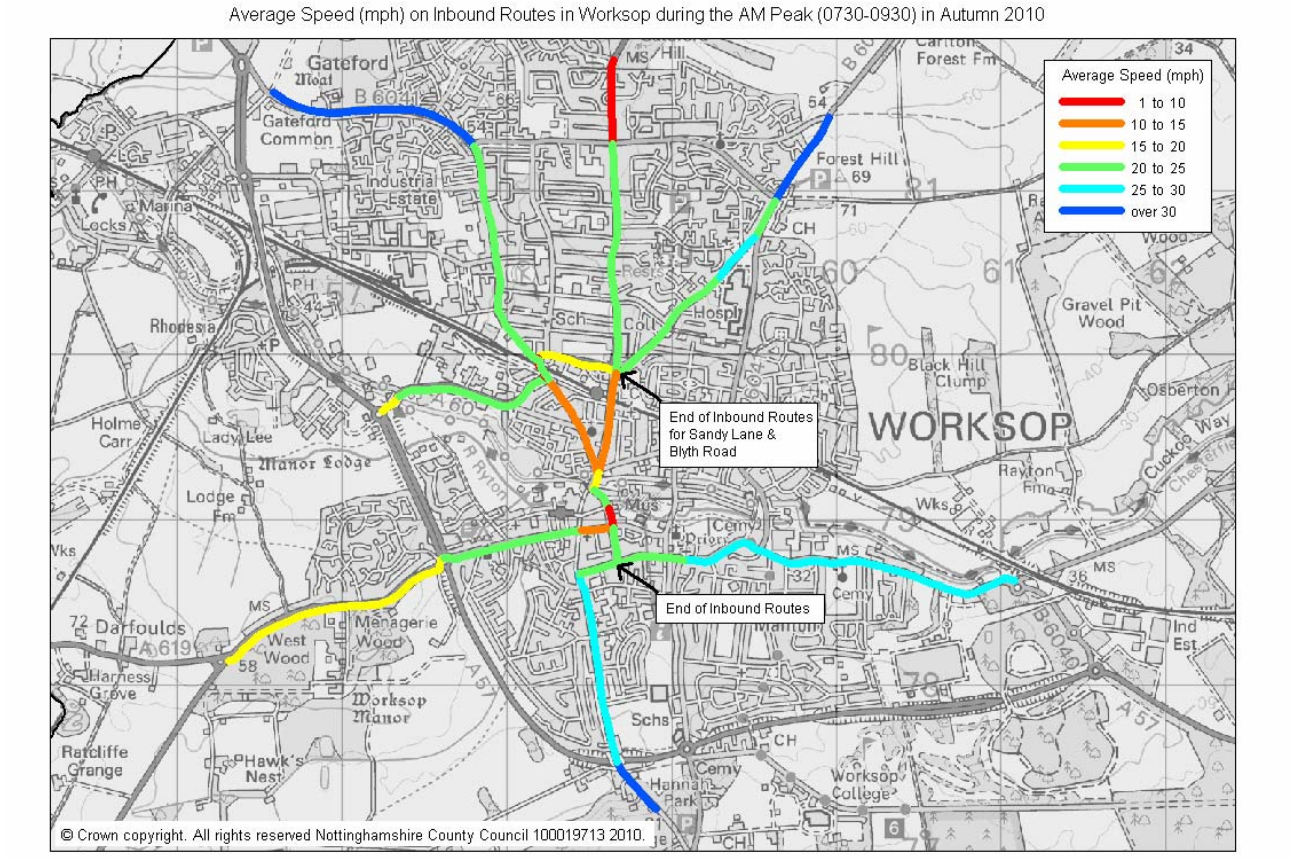


Figure 74: Average inbound journey time speeds in Worksop during the morning peak
Source: Nottinghamshire County Council

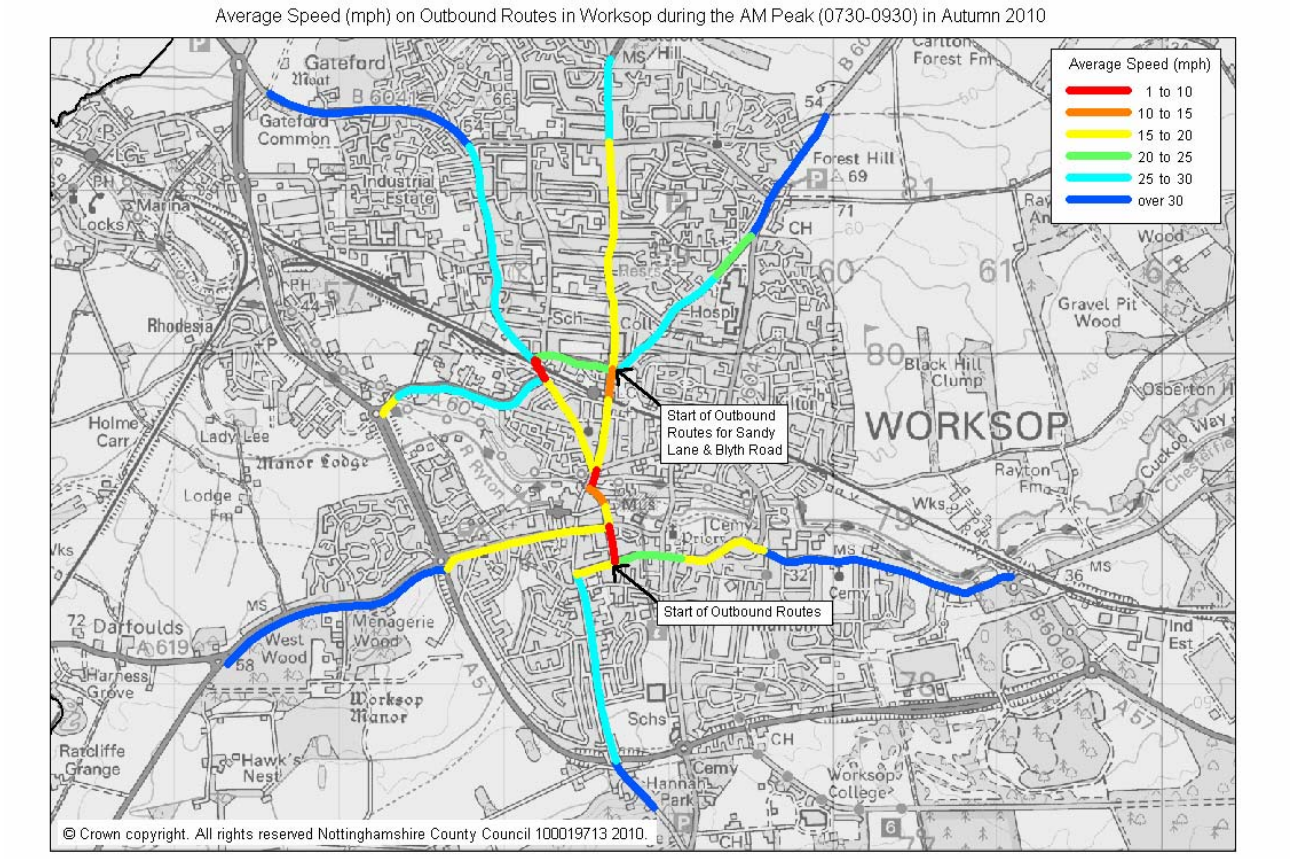


Figure 75: Average outbound journey time speeds in Worksop during the morning peak
Source: Nottinghamshire County Council

8.2.2 Journey time surveys into Nottingham city centre

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 routes monitored are:

- Key routes (first monitored Autumn 2005 and repeated annually)
    - A60(N): Leapool Roundabout to Huntingdon Street
    - A60(S):Ruddington to Trent Bridge
    - A453: Ring Road to Castle Boulevard
    - A610: A6096 junction Awsworth to Canning Circus
    - A611: south end of Hucknall Bypass to Mansfield Road
    - A612: Burton Joyce to Pennyfoot Street
    - A6005: County Boundary to Wilford Street
    - A6011 (LB): Radcliffe Road to London Road via Lady Bay Bridge
    - A6011/A6520/A60(S) (TB): Gamston Roundabout to Canal Street via Trent Bridge
    - A6514 Ring Road (N): Derby Road to Mansfield Road
    - A6514 Ring Road (S): Mansfield Road to Derby Road
- Other radial routes (first monitored Spring 2006 and repeated annually)
    - A606: Tollerton to Loughborough Road
    - A609: Trowell to Canning Circus
    - A6200: Ring Road to Canning Circus
    - B682: Moor Bridge to Mansfield Road
    - B684: Woodborough turn to Huntingdon Street
    - B686: Colwick Loop Road to Manvers Street
    - Radford Road – Ring Road to Alfreton Road.

The overall results of the surveys along the 13 routes through the county in the morning peak are included in table 31 below, whilst the morning peak results along individual routes are shown below in figure 76. 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 31: Average journey times during the morning peak in Greater Nottingham

		Morning peak (0730-0930) inbound					
		Average speed (mph)			Average journey time per mile (minutes)		
Location	Route length (miles)	2007	2008	2009	2007	2008	2009
Greater Nottingham	30.8	19	19	19	3:11	3:30	3:13

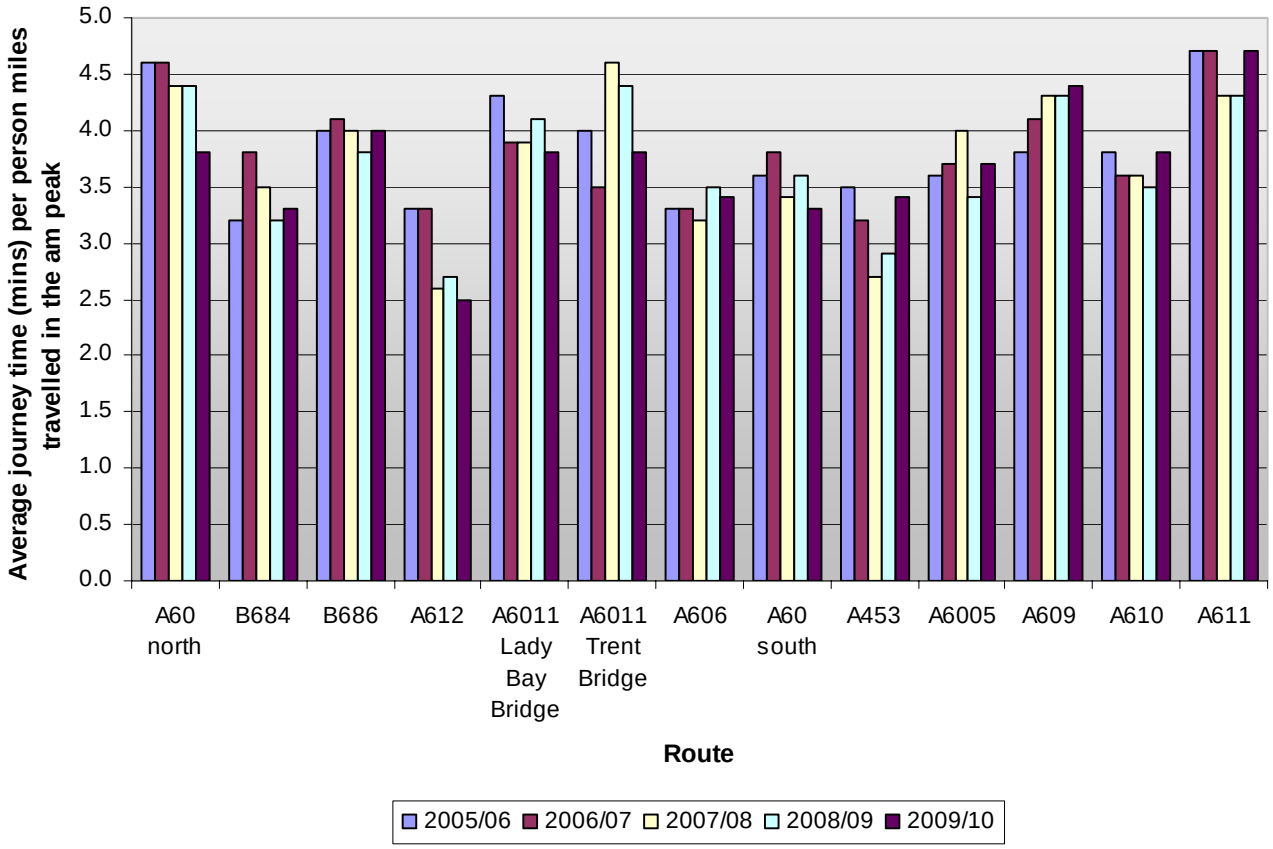
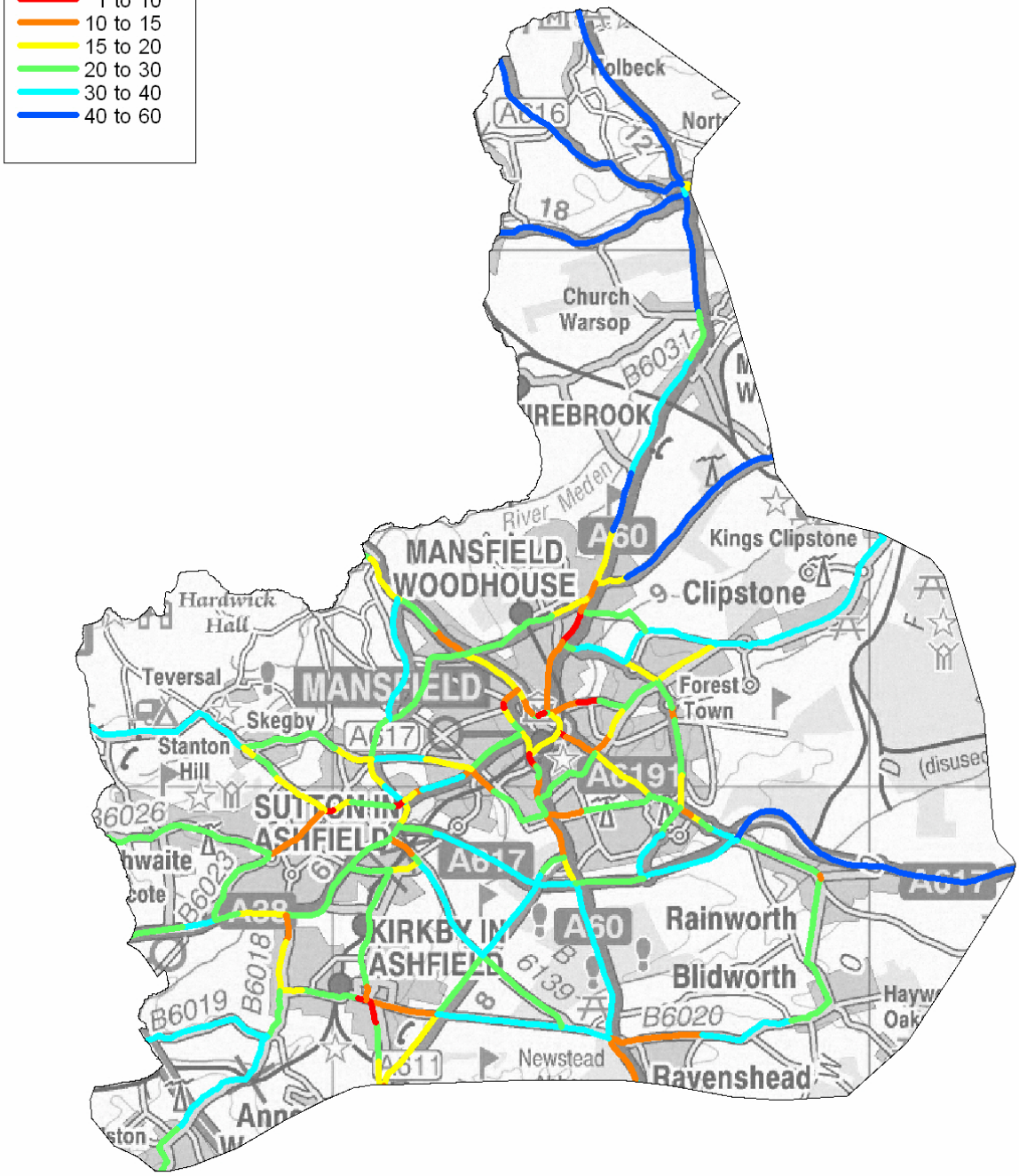


Figure 76: Person journey times in Greater Nottingham

8.2.3 Inter-urban delay

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. The journey speeds are shown in figures 77-80 below.



 Source: Trafficmaster GPS Data

Figure 77: Average inbound and clockwise journey time speeds in Ashfield and Mansfield districts during the morning peak

Source: Trafficmaster GPS data

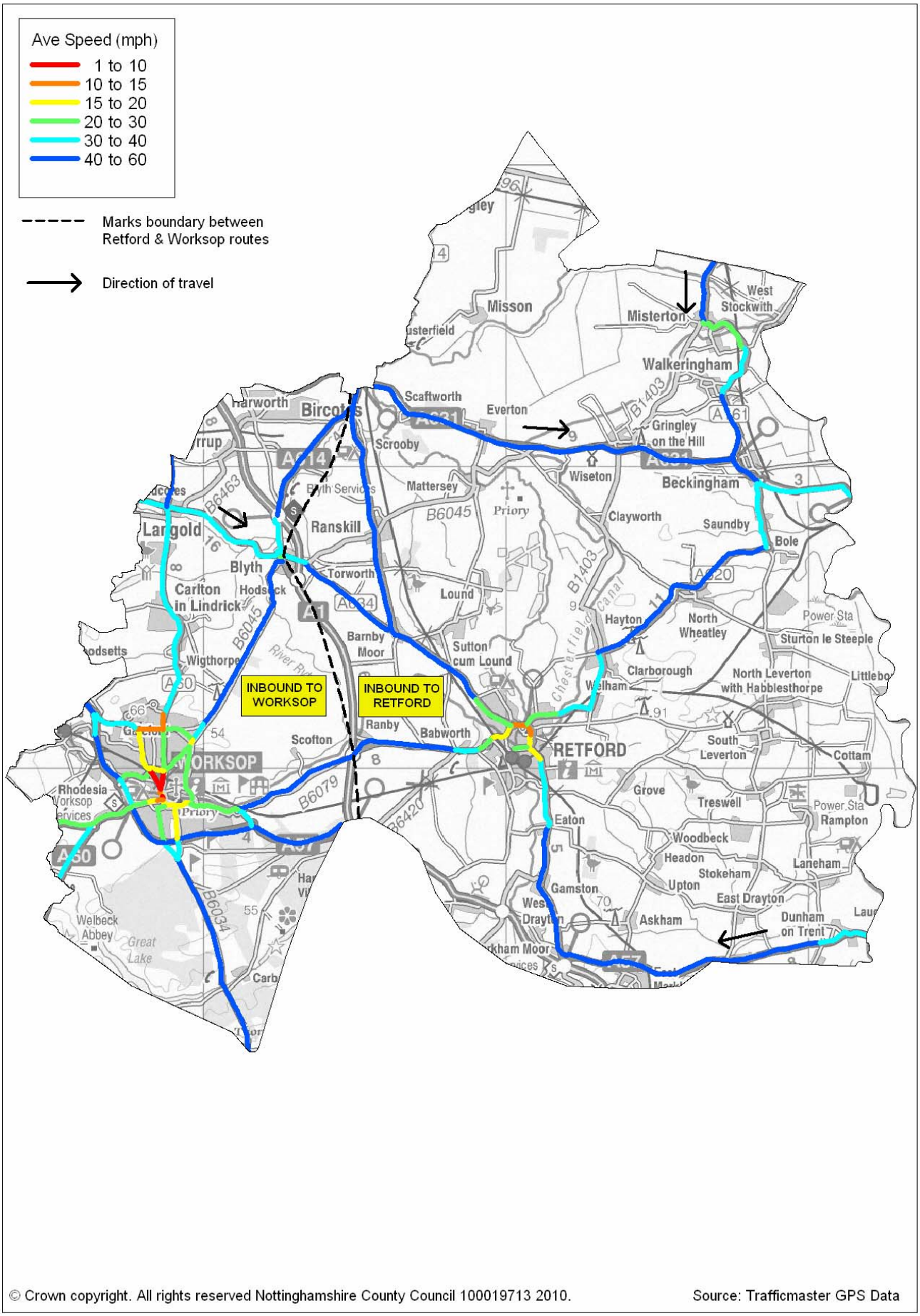


Figure 78: Average inbound journey time speeds in Bassetlaw district during the morning peak
Source: Trafficmaster GPS data

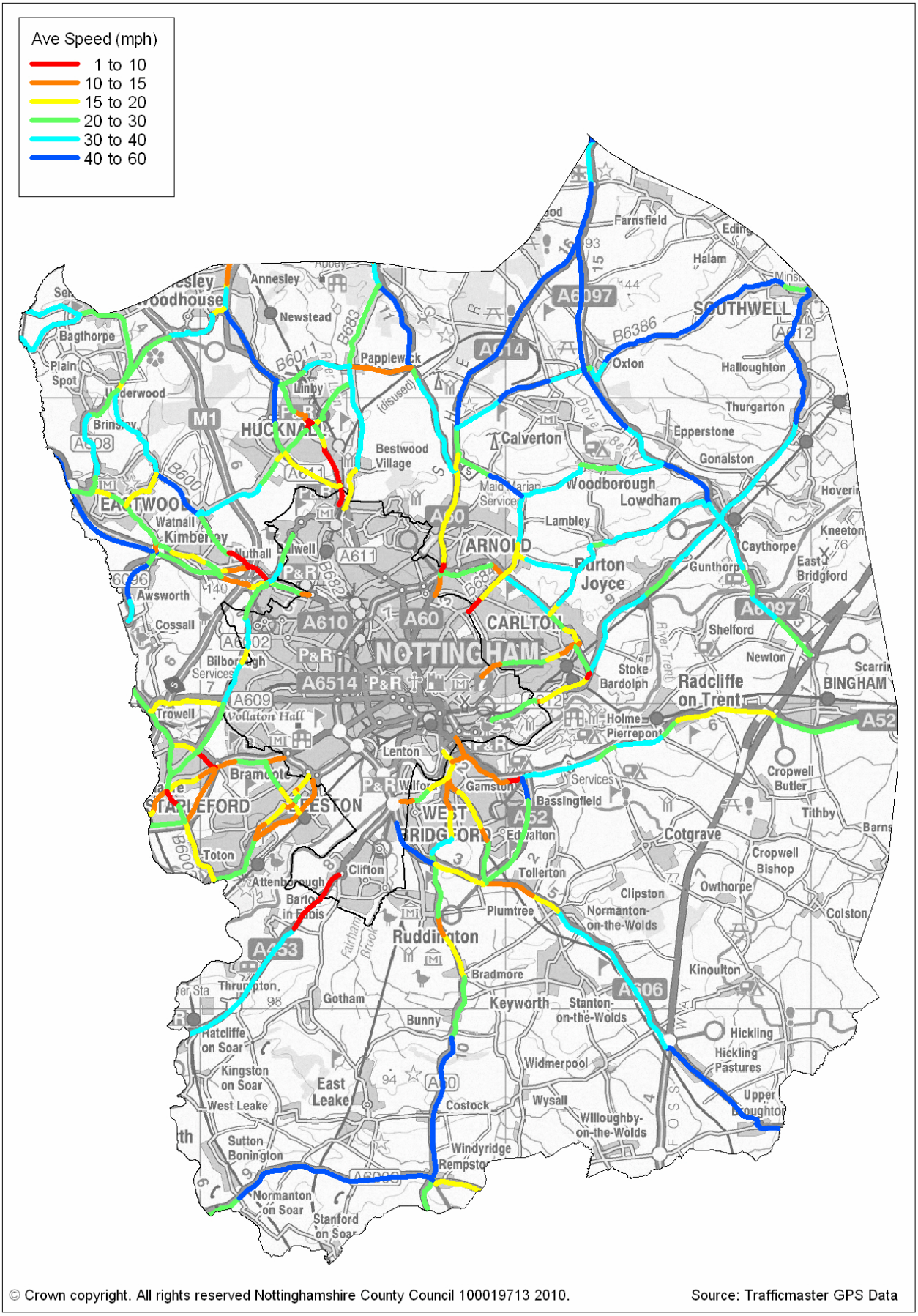


Figure 79: Average inbound and clockwise journey time speeds in Greater Nottingham during the morning peak

Source: Trafficmaster GPS data

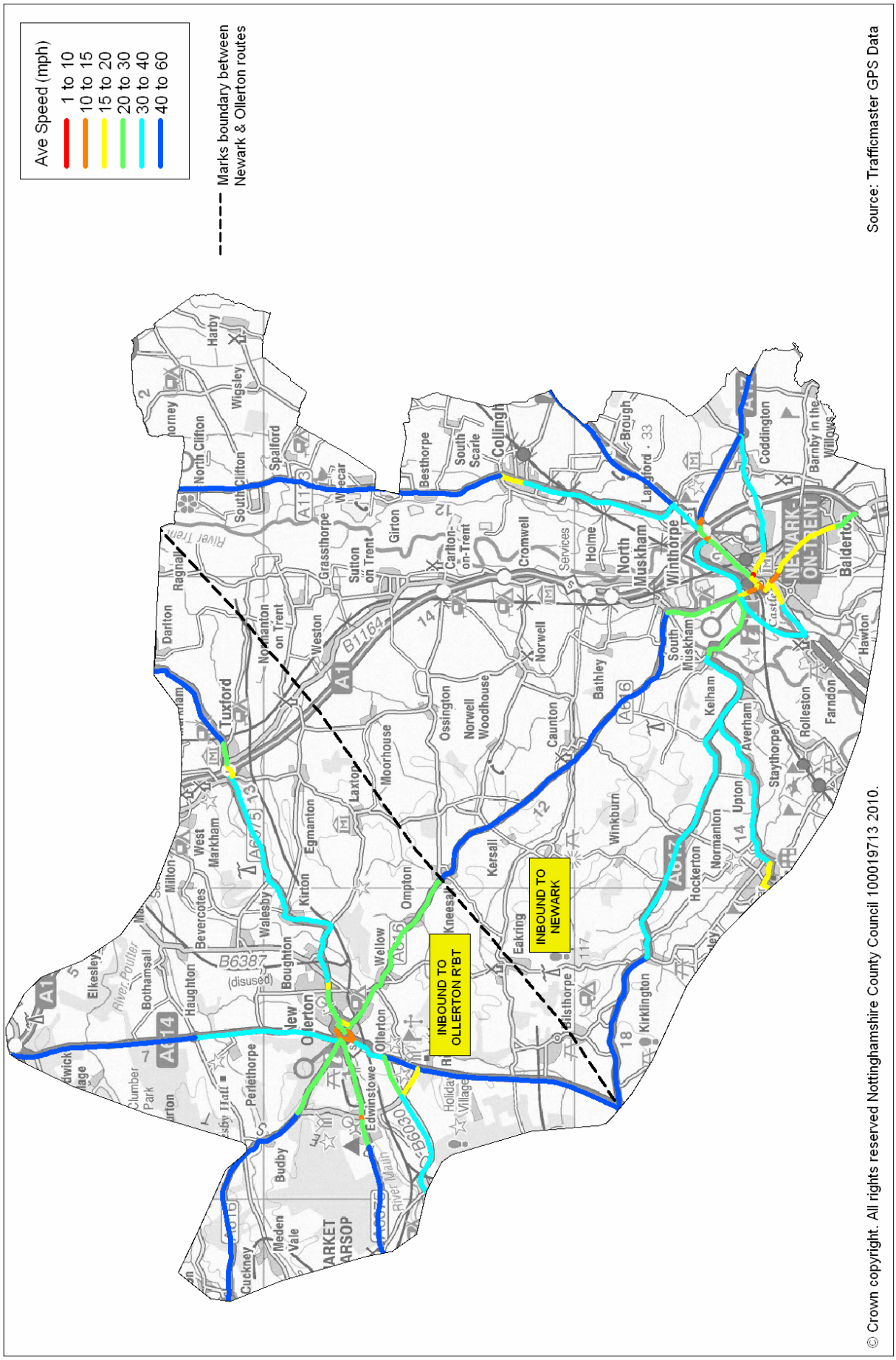


Figure 80: Average inbound journey time speeds in Newark & Sherwood district during the morning peak

Source: Trafficmaster GPS data

8.2.4 Vehicle delay on the Highways Agency Strategic Route Network

The 'Regional Network Report for the East Midlands 2008' produced by the Highways Agency (HA) analysed observed delays in 2006 on the Strategic Road Network (SRN). The delay on the HA roads in the region is shown in figure 81 below. 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, and
- 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.

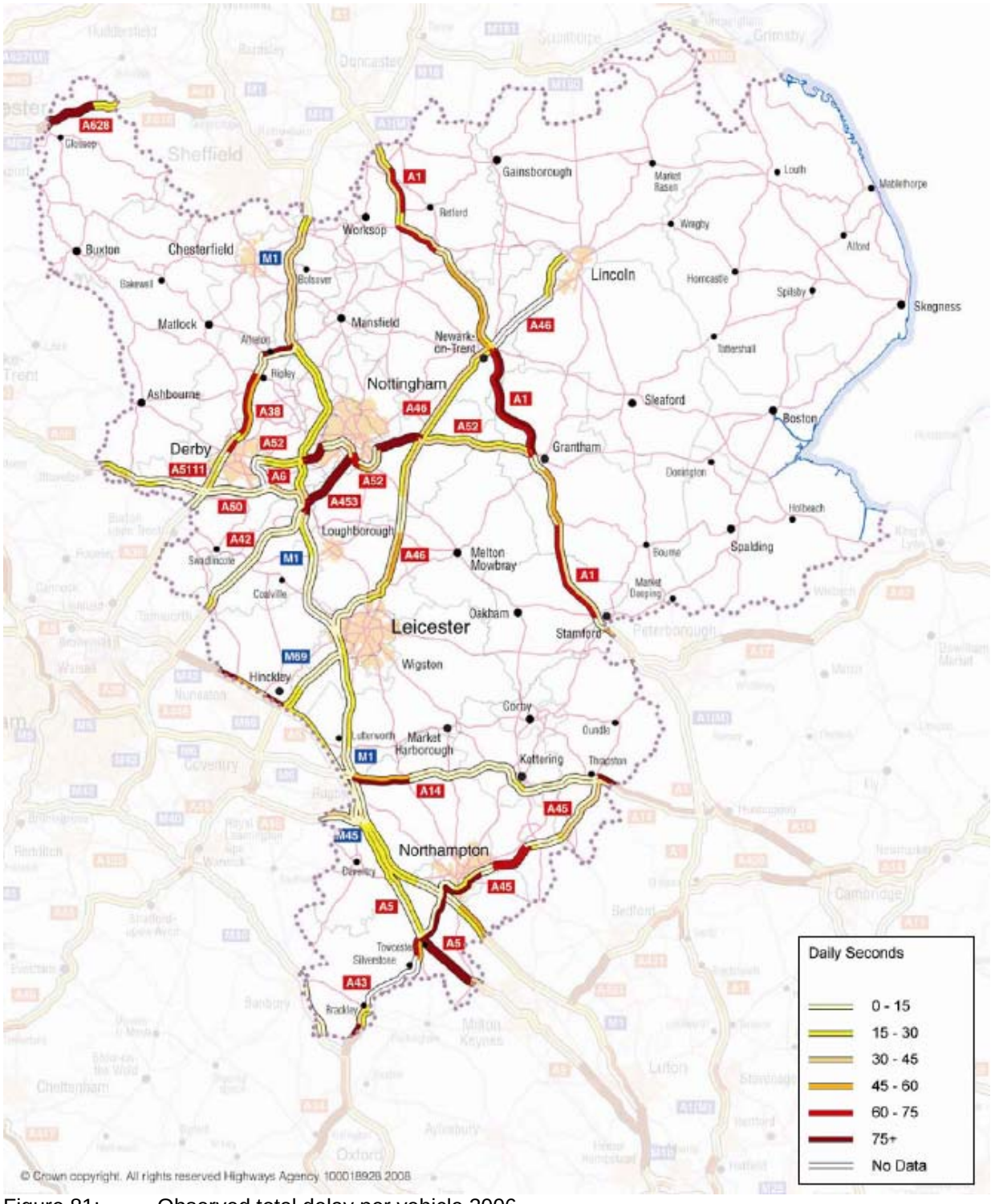


Figure 81: Observed total delay per vehicle 2006
Source: Highways Agency Regional Network Review for the East Midlands 2008