

Nottinghamshire Local Transport Plan Evidence Base Report

8.3 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.

8.3.1 Highways Agency

The Highways Agency (HA) is responsible for monitoring the traffic levels, congestion and delays on the Strategic Road Network (SRN). An analysis of the observed conditions and delays in 2006 was reported in the HA's 'Regional Network Report for the East Midlands 2008'. The daily stress along the HA routes in the region are shown in figure 82 below. This report identifies particular locations on the SRN where the network is congested during both peak and off peak periods. The road lengths on the SRN in Nottinghamshire identified by the HA as having high daily stress (over 90%) levels in 2006 were:

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

8.3.2 District stress maps

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 (unfortunately at the time of publication no map has been produced yet for the Mansfield district). These maps have been reproduced with the permission of the district councils in a uniform format below in figures 83-85.

According to the work undertaken for the district councils – in Ashfield links on the B6026 Huthwaite Road, and A38 currently operate over capacity; whilst in Newark the A46 (a Highways Agency managed road) currently operates over capacity.

The districts councils' stress map assessments show 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.

8.3.3 The Nottingham Core Housing Market Area transport model

A transport model has been produced to help predict traffic flows within the Nottingham core Housing Market Area (HMA), which includes Broxtowe, Gedling and Rushcliffe districts; Hucknall; Nottingham City; and the Erewash district of Derbyshire. The model has been used to produce stress maps for the Nottingham Core HMA which has identified a number short sections of road that currently operate over capacity in each of the districts detailed above, generally on routes into the city and district centres. Figure 86 details link stress and figure 87 details junction capacity. The modelling undertaken show 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.

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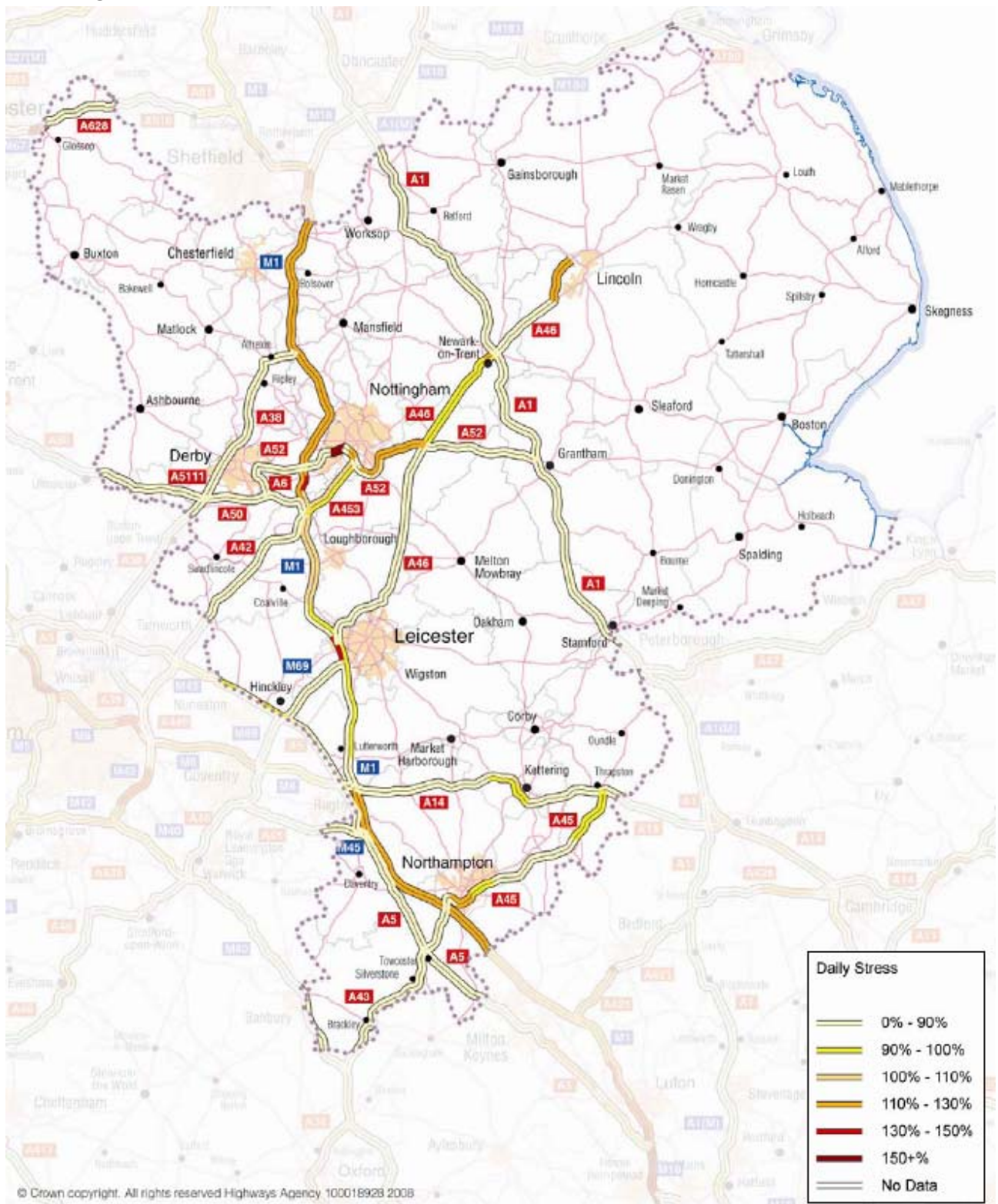


Figure 82: Observed link stress of the Highways Agency Strategic Route Network 2006
 Source: Regional Network Report for the East Midlands 2008

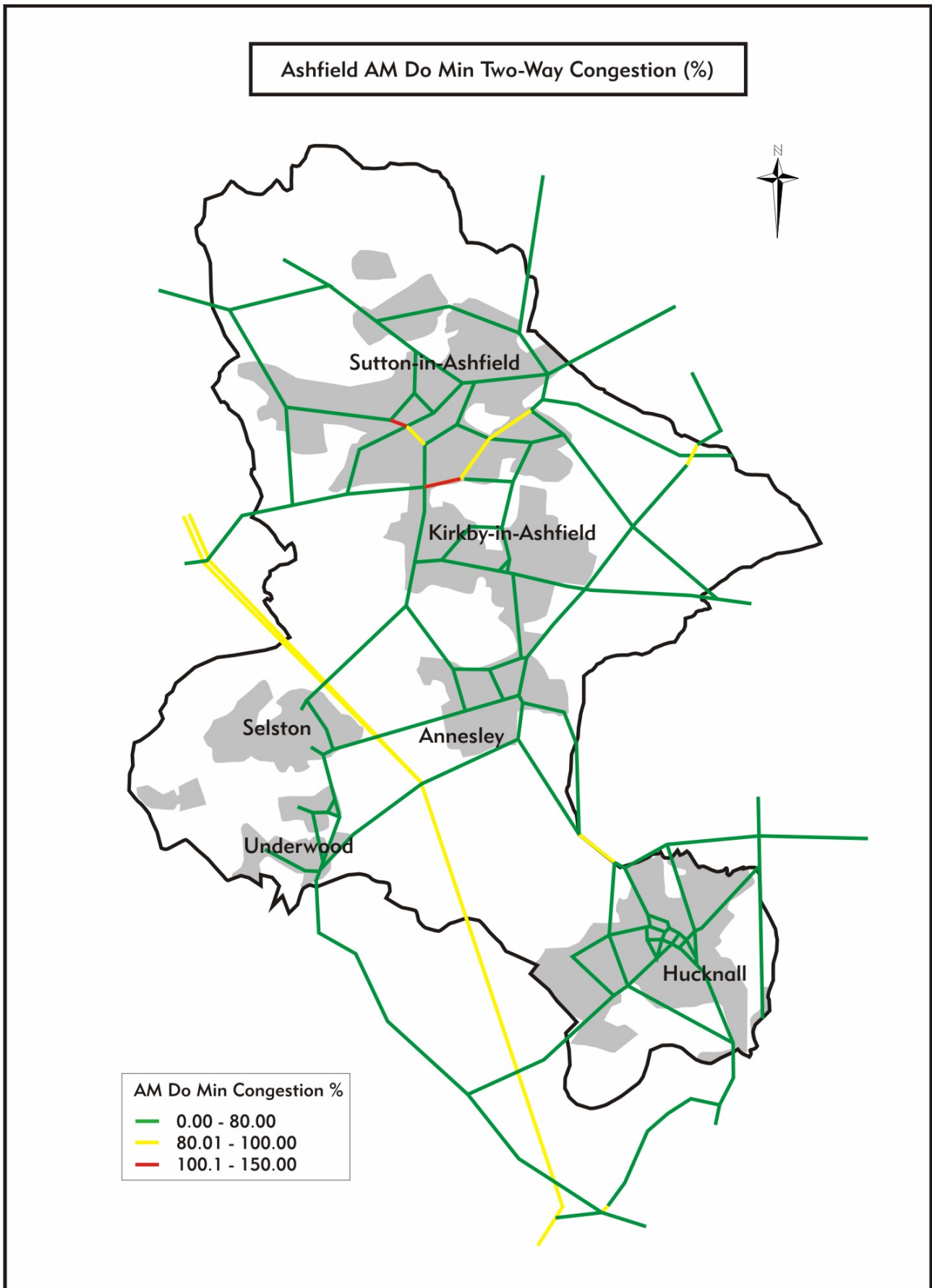


Figure 83: Observed link stress on the strategic road network in Ashfield district in 2010
 Source: Ashfield District Council Local Development Framework Transport Study

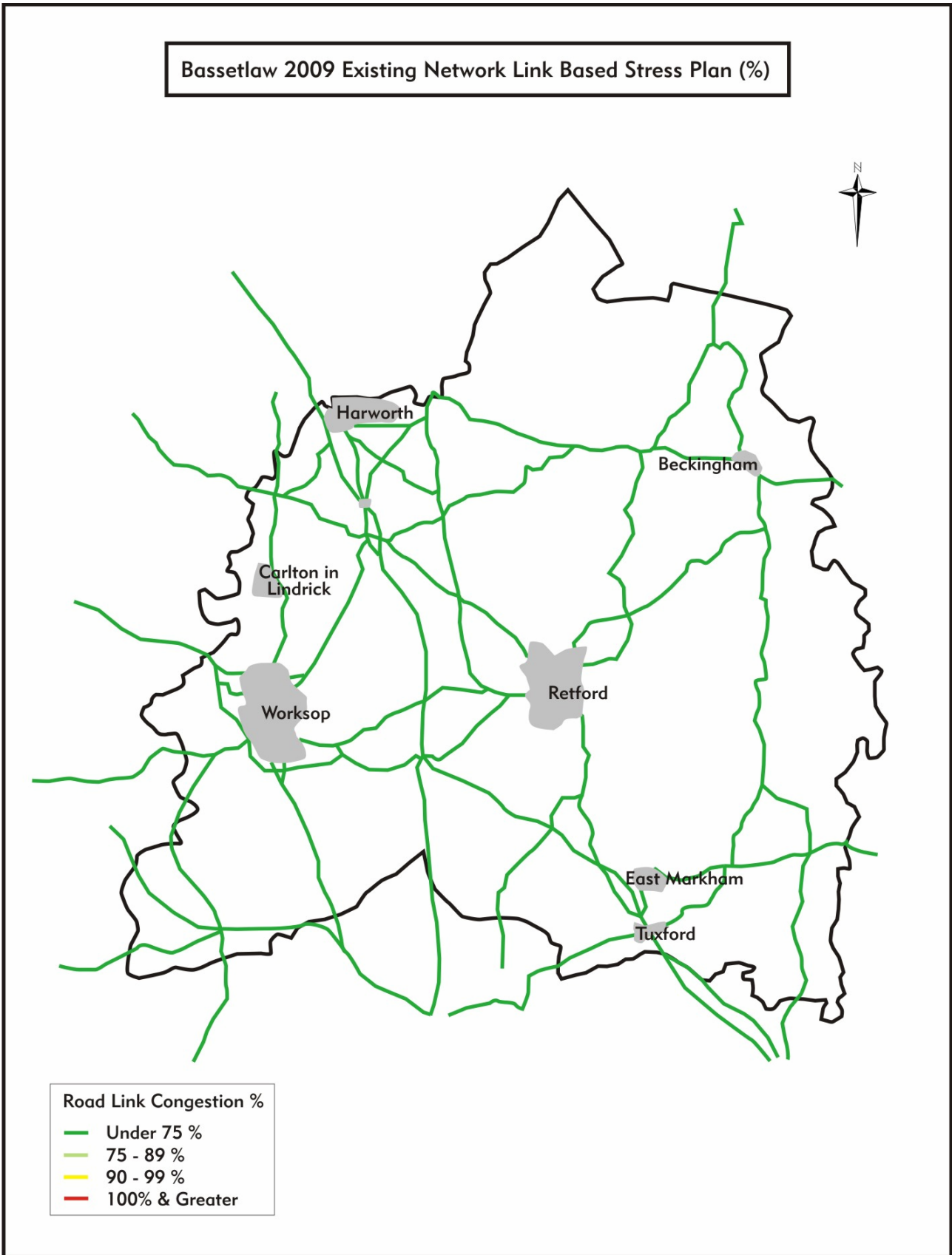


Figure 84: Observed link stress on the strategic road network in Bassetlaw district in 2009
Source: Bassetlaw District Council Local Development Framework Transport Study

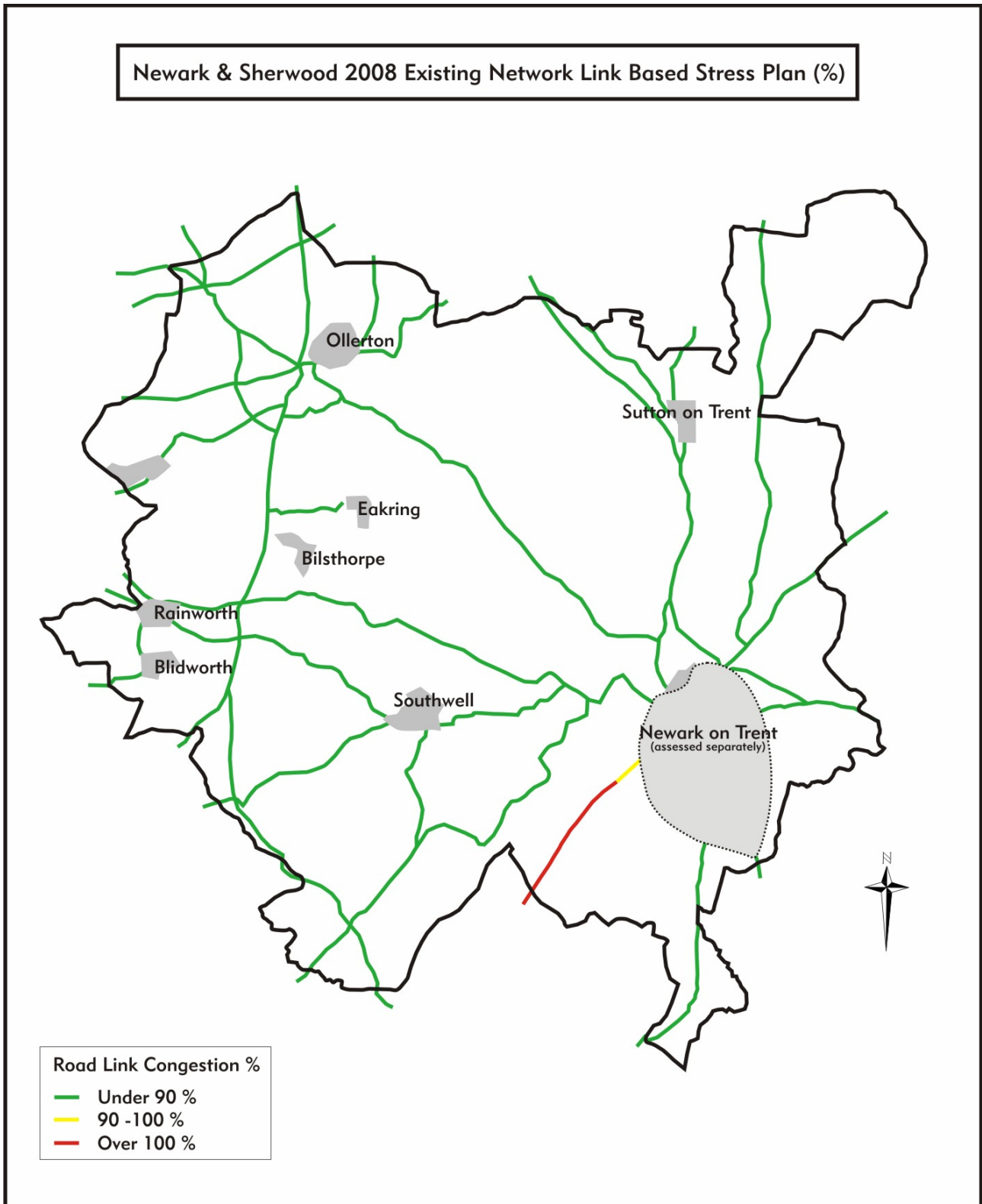


Figure 85: Observed link stress on the strategic road network in Newark & Sherwood district in 2007
Source: Newark & Sherwood District Council Local Development Framework Transport Study

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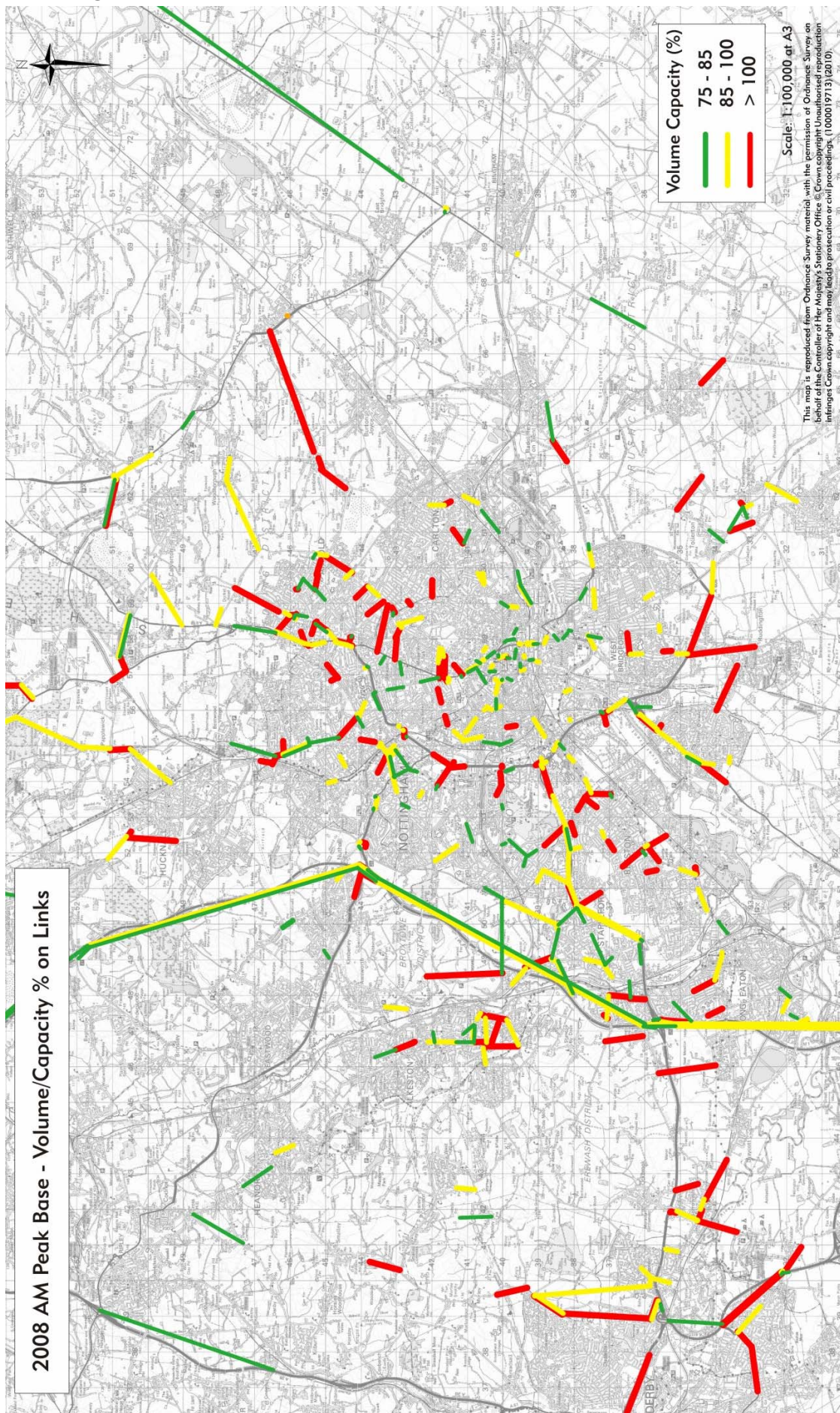


Figure 86: Observed link stress on the strategic road network in the Nottingham core Housing Market Area in 2008

Source: Greater Nottingham core Housing Market Area transport model

October 2010

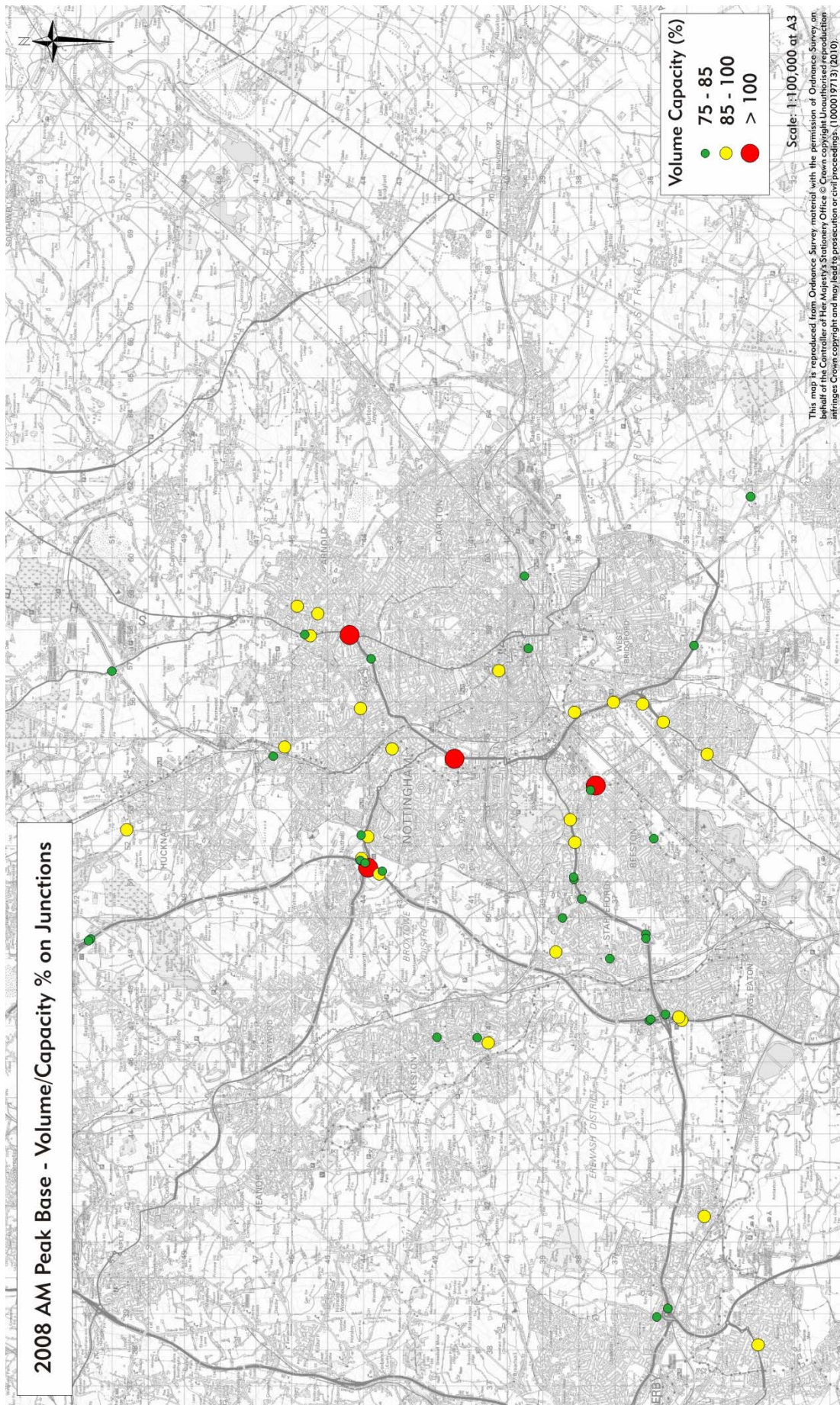


Figure 87: Observed junction capacity on the strategic road network in the Nottingham Core Housing Market Area in 2008

Source: Greater Nottingham core Housing Market Area transport model