

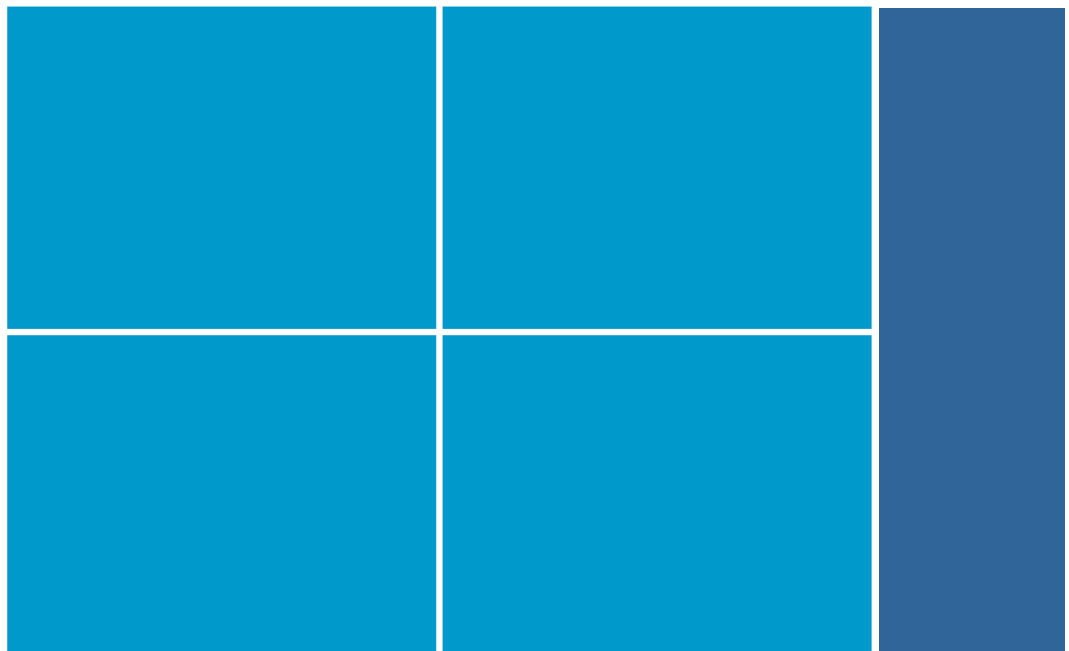
Derbyshire County Council

North Derbyshire Local Development Frameworks: North East, Chesterfield and Bolsover

Stage 1: Strategic Transport Issues Report

Final Draft

March 2010



Revision Schedule

Draft March 2010

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Executive Summary

Overview

In order to support the Local Development Frameworks (LDFs) being prepared in the north of the County, Derbyshire County Council has commissioned Scott Wilson Ltd. to collate the relevant transport information that currently exists, and to provide additional analysis and evidence compilation where it is required. This has been progressed in the form of a two-staged piece of analysis.

Following a meeting in late 2009, involving Officers of the Districts / Boroughs across north Derbyshire, it was determined that transport impact information is required in two broad stages;

Broad comments on each District / Borough's development options to inform a set of Preferred Options, } Stage 1

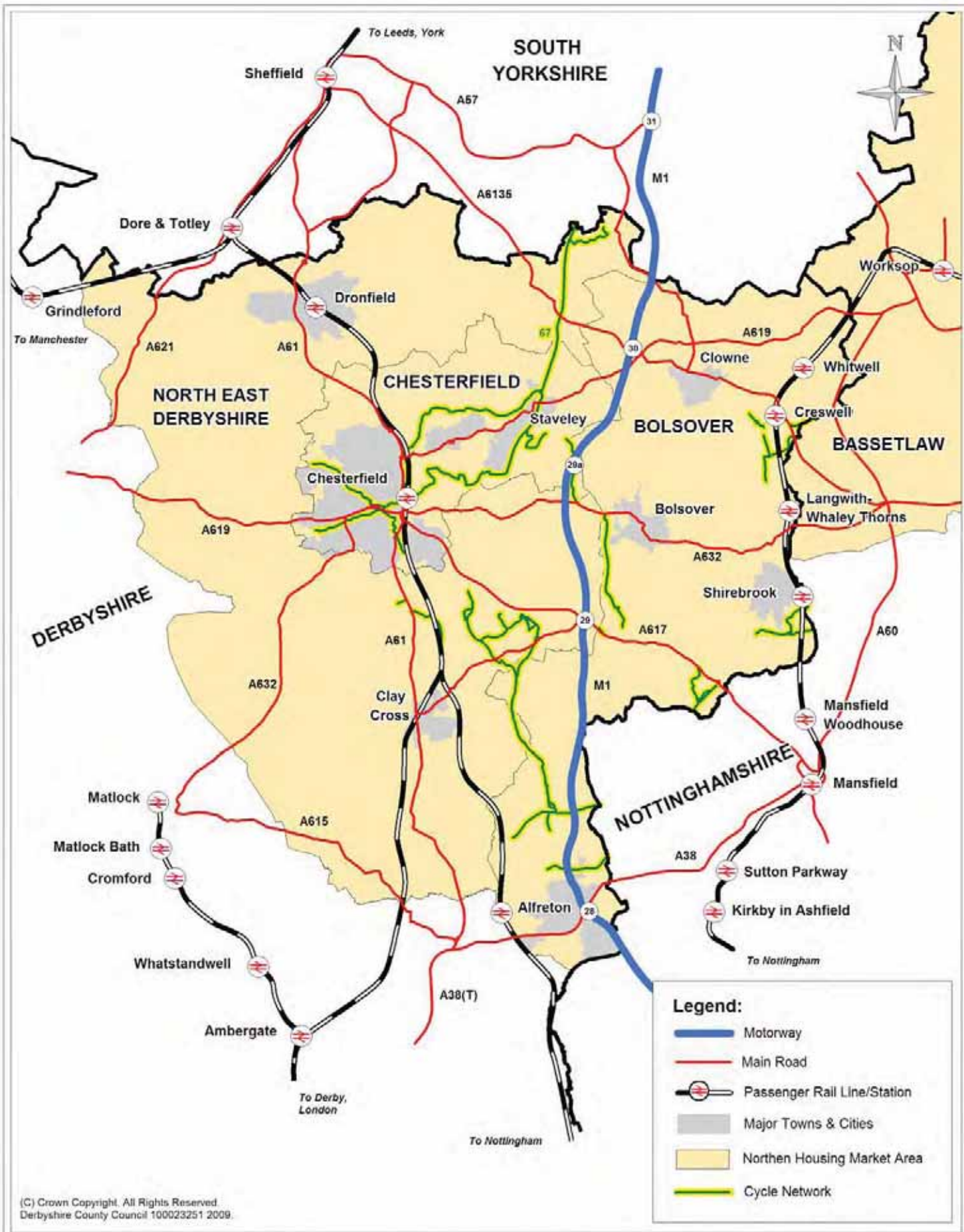
Tests of the Preferred Options for each District individually,
A test looking at the Preferred Options for each District in tandem and cumulatively,
Identification of a package of potential transport / highway related mitigation. } Stage 2

The focus of this report is to identify the strategic transport implications of those developments being considered in the North East Derbyshire, Bolsover and Chesterfield Core Strategy areas. As such, it addresses Stage 1 of the above work by showing;

- (1) which locations are more sustainable (in transport terms) than others, and,
- (2) the key congestion "hot-spots" on the County network. From this, it is shown where development should be sited to maximise transport-sustainability and minimise impact on the local highway network.

It is envisaged that a Stage 2 report would follow once each District / Borough has selected an option package for testing. The Stage 2 report would allow for more objective assessment of the impacts of development in any one particular location.

The study area is shown in Figure 1; overleaf.



 <p>DERBYSHIRE County Council <i>Improving life for local people</i></p>	Project Title:	Drawing Title:	Date:	Scale:
	<p>Northern HMA Transportation Issues</p>	<p>Strategic Transport Links</p>	<p>Nov 2009</p>	<p>N.T.S.</p>
			Drawing No.	Figure 1

Policy Summary

National, regional and local policy all seek to reduce car usage through the promotion of sustainable alternatives. The drivers for this policy are varied (including reducing congestion etc.) but are now principally articulated through the climate change agenda.

The interactions between transport and land-use from a policy perspective are becoming stronger; with LTP3 being developed in the context of the established Regional Plan and developing LDFs.

Within the above, accessibility to services and facilities remains key. As such, new development would need to build close to existing services and facilities, or incorporate new services and facilities within the development envelope.

In transport analysis terms, the above policy is articulated within the *Guidance on Transport Assessment*, which seeks to maximise transport sustainability prior to the identification of measures to accommodate residual trips. As such, this report initially identifies which locations are more inherently sustainable than others in transport terms before identifying how such sites could be made more sustainable. Only then are highway impacts considered (which leads towards the Stage 2 work, which will be more highway-centred).

Sustainable Transport

As noted above, an assessment of transport sustainability is now taken as the first step when considering potential transport impacts of development.

Ensuring that different land-uses (including key services and facilities) are contained within a geographic area (either the development itself or the proximate neighbourhood) is often taken as being a key enabler of sustainable-mode trips such that real mode choice is available to those wishing to travel. This is illustrated within Figure 2, below.

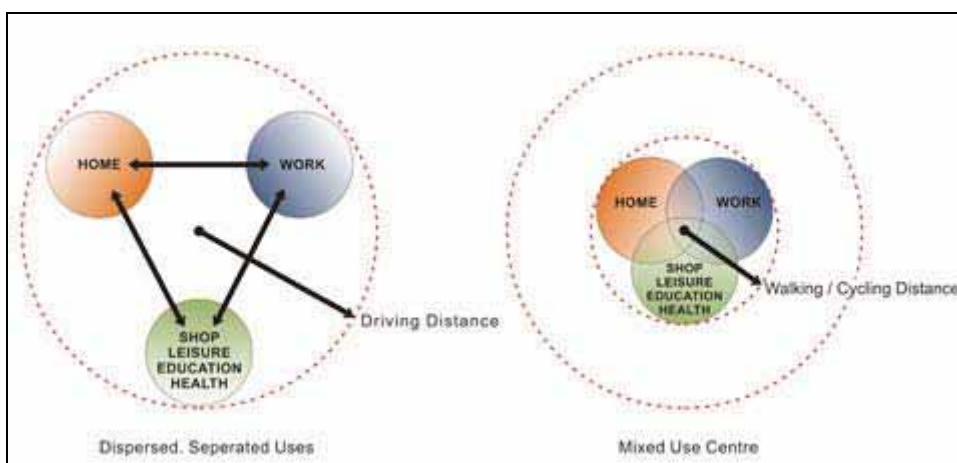


Figure 2: Mixed Use Development (taken from www.plan4sustainabletravel.org)

From the above figure, it can be seen that having several land uses within a defined area is to allow multiple activities to occur from one trip, to shorten trip lengths and to encourage non-motorised trips by making common destinations available within walking / cycling distance.

Table 1 indicates how various land-use design features are estimated to reduce per capita vehicle trip generation compared with conventional development that lacks these features;

Design Feature	Reduced Vehicle Travel
Residential development around public transport nodes	10%
Commercial development around public transport nodes	15%
Residential development along public transport corridor	5%
Commercial development along public transport corridor	7%
Residential mixed-use development around public transport nodes	15%
Commercial mixed-use development around public transport nodes	20%
Residential mixed-use development around public transport corridor	7%
Commercial mixed-use development around public transport corridor	10%
Residential mixed-use development	5%
Commercial mixed-use development	7%

Table 1: Travel Impacts of Land Use Design Features (Source: VTPI, 2001, from Distillate, April 2006)

Notes (1) In this table, "residential mixed-use development" would indicate a residential development with our land-use integrated into the development form, whereas residential development indicates a wholly residential development (2) public transport node = bus or train station

From the above, there are four aspects that need to be considered when comparing and judging residential locations in transport sustainability terms;

- proximity to day-to-day services,
- proximity to employment,
- access to key services, and,
- availability of public transport services.

An assessment of the availability of such services and facilities has been conducted with reference to those locations being considered for housing growth, and included within a ranking system that also considers the availability of public transport. The result of this ranking is shown in Table 2, below.

	Location	District
Higher Sustainability	Dronfield	NE Derbyshire
	Brimington South	Chesterfield
	Calow/Duckmanton	NE Derbyshire
	Dunston	Chesterfield
	Brimington North	Chesterfield
	Eckington	NE Derbyshire
	North Wingfield	NE Derbyshire
	Holmewood	NE Derbyshire
	South Normanton	Bolsover
	Wingerworth	NE Derbyshire
	Tibshelf	Bolsover
	Shirebrook	Bolsover
	Grassmoor	NE Derbyshire
	New Houghton	Bolsover
Lower Sustainability	Killamarsh	NE Derbyshire
	Tupton	NE Derbyshire
	Staveley	Chesterfield
	Clay Cross	NE Derbyshire
	Bolsover	Bolsover
	Duckmanton	Chesterfield
	Langwith / Whaley Thorns	Bolsover
	Creswell	Bolsover
	Mastin Moor	Chesterfield
	Pinxton	Bolsover
	Doe Lea	Bolsover
	Glapwell	Bolsover
	Barlborough	Bolsover
	Clowne	Bolsover
Shirland	NE Derbyshire	
Shuttlewood	Bolsover	
Stanfree	Bolsover	
Whitwell	Bolsover	
	Hodthorpe	Bolsover
	Morton / Stonebroom	NE Derbyshire
	Pilsley	NE Derbyshire

Table 2: Ranking of Development locations based on existing conditions

Important Note:- "Most Inherently Sustainable" does not equate to a location being sustainable if the development does not take into consideration measures identified in this report within its delivery. Conversely, "Least Inherently Sustainable" does not equate to a location being unsustainable as the development could take action to improve its inherent character. Furthermore, the locations are ranked relative to each other only.

The sustainability of sites within the table above could be improved using combinations of the following strategies;

- Development mix to provide additional services and facilities close to the development,
- On-site infrastructure to facilitate sustainable modes,
- PT improvements to introduce non-car modes over longer distances,
- Travel Plans to manage and promote sustainable modes.

Highway Impact

Notwithstanding the measures to enable sustainable transport, the proposed LDF developments are likely to generate car trips on the local highway network and these could result in increased congestion at certain locations. The Stage 2 work would seek to identify these locations in greater detail. However, this work seeks to identify likely locations of impact at a broad level.

A main, national strategic route, the M1, runs north-south through the study area, with Junctions 28, 29A, 29 and 30 facilitating access to and from the motorway network.

In terms of the local network, the A61 is an important distributor within the study area (NE Derbyshire and Chesterfield) and forms a parallel route to the M1. The A61 is used as a tactical diversion route when the motorway network is closed, and is used informally by motorists when the M1 is congested.

Derbyshire County Council maintains a network of traffic count sites and other temporary traffic count equipment which logs the usage of the local highway network. Table 3 summarises those locations which currently experience the highest flows across the normal working day.

Road	Traffic Flow (AADT)
A619 (From B6050 - M1)	25,000 – 50,000
A617 (From M1 - B6417)	10,000 – 25,000
A61 (From A617 - B6014)	10,000 – 25,000
B6039 (From A617 - B6038)	10,000 – 25,000
A632 (From A61 - B6419)	10,000 – 25,000
B6050 (From A61 - A619)	10,000 – 25,000
A619 (From A61)	10,000 – 25,000
B6057/B6052 (From B6051 - past Eckington)	10,000 – 25,000
A61 (From B6050 - past Dronfield)	10,000 – 25,000
B6057 (From A61 - B6158)	10,000 – 25,000
A619 (From A617 - B6150)	10,000 – 25,000
A632 (From Walton Road - B5057)	10,000 – 25,000
B6056 (From A61 - B6054)	10,000 – 25,000
A516 (From A50)	10,000 – 25,000

Table 3: Roads experiencing the highest flow in the Study area (excluding M1) (Source; Derbyshire County Council, Traffic Count database, 2008)

The above, together with the locations stated below, are associated with delay in the AM and PM peak hours. High journey delay can be defined by delay per vehicle mile of greater than 2 minutes and 30 seconds, and medium/high of greater than 1 min 15 seconds. Table 4 summarises the locations for which there is measured 'high' and 'medium / high' delay.

Journey Delay	AM	PM
High	Sections of Ashgate Road	Along Calow Lane / Hady Lane route (from A617 & A632
	A619	Storth Lane, South Normanton
	A632	-
	Somersall Lane (between A619 & Yew Tree Drive)	-
	Wingerworth centre	-
	Whitwell	-
Medium / High	Chesterfield: shopping centre, A61, Storforth Lane, B6039, Ashgate Road, A619 (Brimington, Rother Way, Chatsworth Road), B6050, B6150, B5052 (Whittington Hill), Church Street North, Callow Lane,	Chesterfield: shopping centre, A61, Storforth Lane, B6039, Ashgate Road, A619 (Brimington, Rother Way, Chatsworth Road), B6050, B5052 (Whittington Hill), Church Street North,
	A632 (B6425 to Rectory Road – Long Duckmanton)	-
	Ashover centre	-
	Clay Cross centre	Clay Cross centre
	Church Street West/Park Lane (Pinxton)	-
	A38 (B6406 to Birchwood Lane – South Normanton)	A38 (B6406 to Birchwood Lane – South Normanton)
	Shirebrook centre	Shirebrook centre
	Eckington centre	Eckington centre
	Staveley centre	Staveley centre
	Pinxton centre	Pinxton centre
	South Normanton centre	South Normanton centre
	Hodthorpe centre	Hodthorpe centre
	Dronfield centre	-
	-	Clay Cross
	-	Long Duckmanton
	-	Geer Lane (east of Glapwell)
	-	Far Lane (Moorhall)
	-	A61 (Clay Cross to Stretton)

Table 4: Locations of High and Medium Delay (Source; Derbyshire County Council, Traffic Count database, 2008)

Notwithstanding the work proposed under Stage 2, all developments proposed under the Core Strategies would route through congested areas on the existing highway network to a greater or lesser extent. In this case, where appropriate consideration has been given to locating developments close to existing service, facilities and employment; appropriate strategies could be to;

- Focus on sites where access is good (to minimise the increase in accidents, and ensure good PT linkages),
- site development on public transport corridors,
- site development where traffic would have routing options to and from the site such that weight of traffic from any one development site does not fall on any one single part of the network,

In the above, it is noted that as distance of development away from the Chesterfield urban centre increases, it is likely to be more difficult to serve by regular (and therein attractive) public transport.

Facilitation Hierarchy

In order to facilitate the LDF developments, a range of highway mitigation measures are likely to be required. According to the GTA, the preferred order of intervention is firstly to capture trips by sustainable modes, then to manage the existing highway network and only then to provide additional transport infrastructure. Although the provision of new road space is a last resort, it may be needed for certain developments in particular locations.

A hierarchy of intervention should be as follows;

- Siting and Development Style
 - Potential to create an appropriate access onto the local highway network,
 - Mixed-use development, or development near to existing services and facilities,
 - Development layout that encourages sustainable modes,
 - Provision of sustainable transport infrastructure within a development,
- Management of Trips
 - Travel Plan (with provision for measures and monitoring),
- Single Occupancy Trip Reduction Measures
 - Car sharing,
 - Public transport contributions,
- Highway Improvements.

1 Introduction

1.1 The Local Development Framework Process

1.1.1 Under the Planning and Compulsory Purchase Act (2004), Local Development Frameworks (LDFs) will replace the existing system of Local, Structure and Unitary Plans. Within Derbyshire, the preparation of several LDFs is currently ongoing. This work is led by the District and Borough Councils with inputs from stakeholders (such as Derbyshire County Council, DCC, the local highway authority).

1.1.2 Unlike Local Plans, an LDF does not comprise a single planning document but rather consists of a portfolio of documents based around a Core Strategy but subsequently covering issues such as Housing, Employment and Retail.

1.1.3 All development plan documents prepared under the LDF will be subject to 'Examination in Public' and would need to pass a test of 'soundness'. As such, a wide-ranging evidence base is being prepared to support each LDF.

1.1.4 DCC has been asked for comments and analysis that would support the Core Strategies for the following areas in Derbyshire;

- Bolsover,
- Chesterfield,
- North East Derbyshire,
- High Peak and Derbyshire Dales¹.

1.1.5 As DCCs current framework partner, Scott Wilson Ltd has been commissioned to collate the relevant information that currently exists and to provide additional analysis where it is required. Following a meeting in late 2009, involving officers from the above District / Boroughs, it was determined that information is required in two broad stages;

- Broad comments on each of the District / Borough's development options to inform a set of Preferred Options, } Stage 1
- Tests of the Preferred Options for each District individually,
- A test looking at the Preferred Options for each District in tandem and cumulatively, } Stage 2
- Identification of a package of potential transport / highway related mitigation.

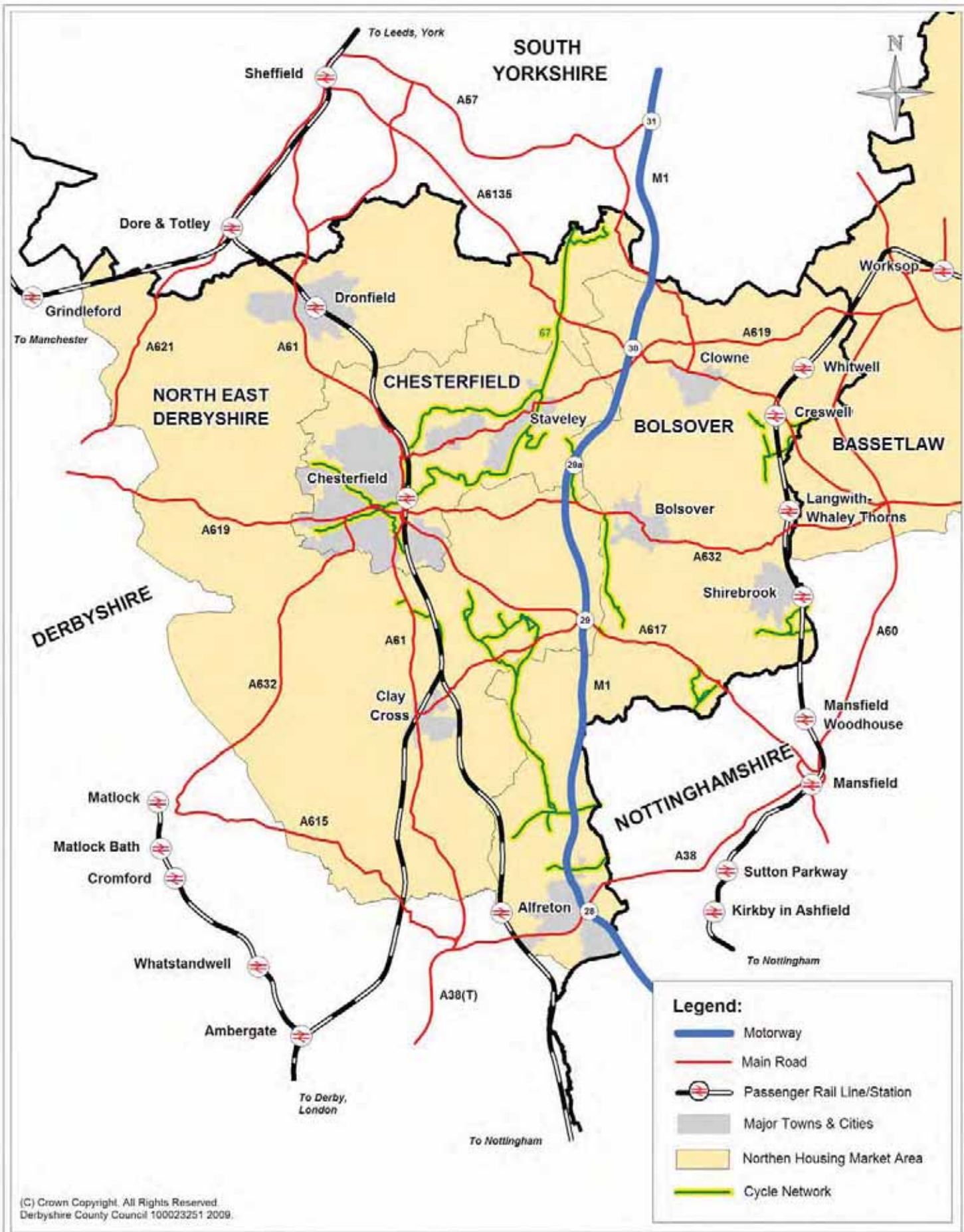
¹ High Peak and Derbyshire Dales are preparing a joint Core Strategy

- 1.1.6 The focus of this report is to identify the strategic transport implications of those developments being considered for the North East Derbyshire, Bolsover and Chesterfield Core Strategy areas only². As such, it addresses Stage 1 of the above work by showing (1) which locations are more sustainable (in transport terms) than others and (2) the key congestion “hot-spots” on the County network. From this, it is shown where development should be sited to maximise transport-sustainability and minimise impact on the local highway network.
- 1.1.7 It is envisaged that a Stage 2 report would follow once each District / Borough has selected an option package for testing. The Stage 2 report would allow for more objective assessment of the impacts of development in any one particular location.
- 1.1.8 As is suggested above, this document would need to be read alongside other, non-transport evidence when judging the full range of issues posed by any future development aspirations within the LDF.

1.2 Study Area

- 1.2.1 The study area is shown in Figure 1; overleaf. It is noted that the northern Districts of Derbyshire are also part of the wider Sheffield City Region (SCR) and are part of the Sheffield Housing Market Area. This report does not specifically consider transport implications outside of Derbyshire; however, it is understood that the planning authorities are consulting with each other to ensure that each are aware of development aspirations that may have a bearing on their administrative area.

² A sister document is being prepared for the High Peak and Derbyshire Dales Core Strategy Area



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1.3 Transport Implications of Proposed Developments within the LDF

- 1.3.1 Both in terms of planning policy and the actual planning application process, there are several planning gateways through which prospective developments must pass before actual construction work gets underway.
- 1.3.2 The level of assessment required at these gateways varies. For a planning application (either outline or detailed), a formal Transport Assessment is usually submitted for developments above a certain threshold. Such a document sets out how the site will be accessed by all transport modes and what the impacts of the development's traffic would be on the wider highway network; both in terms of network capacity and road safety. The format and content of a Transport Assessment are governed by the Department for Transport's (DfT) Guidance on Transport Assessment (GTA, DfT, March 2007).
- 1.3.3 The GTA focuses on three aspects;
- Encouraging Environmental Sustainability,
 - Managing the Existing Network,
 - Mitigating Residual Impacts.
- 1.3.4 Importantly, a Transport Assessment is written to support a specific development scenario for which issues such as development location, size and access have been determined. For the LDF development scenarios, these aspects are not yet fixed. As such, the assessment undertaken of the transport implications of this development can only make limited comment on the specific operation of junctions and the likely road safety performance of the network.
- 1.3.5 However, the implications of the development at a strategic level (including sustainable-mode access, indicative transport impacts and how the network could be managed etc.) can be assessed using a set of developmental assumptions and existing transport-network data.

1.4 Methodology

1.4.1 Derbyshire County Council is the local highway authority within the study area and, as such, continually monitors and investigates issues in relation to the transport network. This assessment, therefore, has taken advantage of the existing databases and analytical work already undertaken by the local highway authority, as well as using national datasets.

1.4.2 Given the above, this report has collated and made use of the following;

- Accession Analysis (from the Derbyshire Accessibility Strategy),
- Census 2001 Journey to Work data,
- National Accessibility Indicator sets,
- Discussion with Derbyshire highway officers,
- Objective site visits to observe network conditions.

2 Policy Context

2.1 Overview

- 2.1.1 In transport terms, new development is brought forward within a policy context that is formulated at national, regional and local level. The purpose of this section is to frame the LDF Core Strategy development options within this context as it currently stands (recognising that the LDF Core Strategy will become part of this policy context upon its adoption).
- 2.1.2 Summary conclusions are drawn at the end of this section.

2.2 National Policy

Transport-related Planning Policy

- 2.2.1 At a national level, land use and transport policies are set out in a number of Planning Policy Statements and Guidance documents. They clearly set out how the future integration of transport and land use should be achieved, specific mechanisms to deliver sustainable transport and guidance on the development of regional and local policies and strategies. The two key documents are;
- Planning Policy Statement 1(PPS1) - Delivering Sustainable Development,
 - Planning Policy Guidance Note 13 (PPG13) – Transport.
- 2.2.2 **PPS1** sets out the overarching planning policies on the deliverability of sustainable development through the planning system. Of particular relevance to transport development plans is the following advice on what they should include;
- Causes and potential impacts of climate change through policies which reduce energy use, reduce emissions by encouraging patterns of development, which reduce the need to travel by private car or reduce the impact of moving freight.
 - Clear, comprehensive and inclusive access policies in terms of both location and external physical access; such policies should consider diverse needs and aim to break down unnecessary barriers and exclusions in a manner that benefits the entire community.
 - Policies to reduce the need to travel and encourage accessible public transport to secure more sustainable patterns of transport, development planning should actively manage patterns of urban growth to make the fullest use of public transport and focus development in existing centres and near to major public transport interchanges.
- 2.2.3 The objectives of **PPG13** are to integrate planning and transport at the national, regional, strategic, and local level and to promote more sustainable transport choices both for carrying

people and for moving freight. The key aims of the guidance are to ensure that local authorities implement their land use policies and transport programme in ways that help to:

- Promote more sustainable transport choices for people.
- Promote accessibility for jobs, shopping leisure facilities and services by public transport, walking and cycling.
- Reduce the need to travel, especially by car.

There is, therefore, a key national steer in planning policy terms towards providing development that reduces the need to travel by private car whilst ensuring access to services. This equates to developments which either include new services and facilities, or developments near to existing services and facilities. A strong role for public transport is also identified.

Transportation Policy

- 2.2.4 Since the release of the 1998 Transport White Paper “A New Deal for Transport: Better for Everyone”, transport policy has focused on the delivery of an integrated transport system. In essence, this means the integration between different modes of travel; policies for the environment, and other national functions such as healthcare; and land use planning.
- 2.2.5 The most recent articulation of national transport policy was given within the document, Delivering a Sustainable Transport System (DaSTS). DaSTS explains how immediate problems are being tackled whilst explaining how the transport system is being shaped to address the longer term challenges.
- 2.2.6 The DaSTS goals are to;
- support national economic competitiveness and growth, by delivering reliable and efficient transport networks;
 - reduce transport’s emissions of CO₂ and other greenhouse gases, with the desired outcome of tackling climate change;
 - contribute to better safety security and health and long life-expectancy;
 - promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society; and
 - improve quality of life for all transport users and non-transport users and to promote a healthy natural environment.
- 2.2.7 The main DaSTS report makes clear that the greatest challenge in transport policy is supporting economic growth whilst, in parallel, tackling carbon emissions. Indeed, the

preceding Eddington report identified that the strategic economic priorities for long term transport policy should be a concentration upon;

- growing and congested urban areas and their catchments;
- key inter-urban corridors; and,
- key international gateways.

2.2.8 It is expected that DaSTS will culminate in a Transport White Paper in 2012; following work conducted at a regional level to agree strategic priorities, generate and sift options, and identify a programme of work. This regional level work has now commenced with a Stage 1 report for the East Midlands; and further studies identified by this plan on specific issues have been commissioned which will be ready by April 2010.

2.2.9 Whilst Derbyshire does not contain any major conurbations, several important transport corridors run through it (towards principal centres such as Sheffield and Derby) and it is also the home of several large towns, such as Chesterfield. As such, the themes of DaSTS are important when considering likely transport impacts of future development and these are also consistent with the Regional Spatial Strategy.

National Transport Policy is now linked directly to the climate change agenda. This means that the reduction of CO₂ emissions is a key element of transport policy.

2.3 Regional Policy

2.3.1 The East Midlands Plan maps out the future development of the region up to 2026. The plan is divided into Regional and Sub-regional Objectives. It also represents the spatial element of the East Midlands Integrated Regional Strategy (IRS).

2.3.2 The Regional Plan includes;

The Core Strategy.

This sets the Regional Plan firmly within the framework of the Region's Integrated Regional Strategy and outlines Regional Core Objectives 1. These establish the context for the delivery of sustainable development in the Region.

The Spatial Strategy

Provides the framework for meeting the Region's development needs in a way that promotes a more sustainable pattern of development. The Spatial Strategy outlines regional priorities for both urban and rural communities. It also defines the designations of Principal Urban Area (PUA) and Sub-Regional Centre (SRC), and outlines priorities for their development. The Strategy also contains policies in respect of the Region's five Sub-areas. This includes the Northern Sub-area.

Housing:

Provides figures by Housing Market Area groupings, and District Council areas. It also includes targets for affordable housing and development on brownfield land, and for the provision of accommodation for gypsies and travellers. The impact of emerging 'New Growth Points' in various locations across the Region is also considered.

Economy and Regeneration:

Based on the Regional Economic Strategy produced by the East Midlands Development Agency (emda), this includes revised policies on land for employment uses and town centres that have been informed by recent independent research.

Regional Transport Strategy (RTS): Contains policies and proposals to help deliver the Spatial Strategy, and contribute to other regional and sub-regional priorities. The RTS aims to reduce the need to travel and the rate of traffic growth, promote a step change in the quantity and quality of public transport, and only promotes additional highway capacity when all other options have been exhausted.

2.3.3 The Districts considered by this evidence (North East Derbyshire, Chesterfield and Bolsover) fall within the Northern sub-area of the East Midlands region. The Transport Objectives for these sub-areas are given below.

Policy 44: Sub-area Transport Objectives

The development of transport infrastructure and services in each Sub-area should also be consistent with the following objectives:

ii) Northern Sub-area

- N1 To develop the transport infrastructure, public transport, and services needed to improve sustainable access from traditional communities to jobs and services in adjacent urban centres such as Chesterfield, Mansfield-Ashfield, Newark and Worksop.
- N2 To make best use of the existing rail infrastructure and proximity to the strategic road network to develop new opportunities for local jobs in the storage and distribution sector.
- N3 To reduce congestion and improve safety along the M1 corridor
- N4 To overcome the problems of rural isolation for those without access to a private car.
- N5 To improve surface access, particularly by public transport, to Robin Hood Airport near Doncaster.

Regional Policy suggests that where urban extensions or other major developments are planned, measures will need to be incorporated from the outset to promote sustainable travel patterns. In particular, strong public transport connections to major employment areas will need to be provided supported where appropriate by contributions from the developer. It will also be important for developments to connect into and where possible enhance existing footpaths, cycle ways, and waterways.

2.4 Local Policy

Current Local Transport Plan

- 2.4.1 Local Transport Plans (LTP) are statutory documents prepared under the Transport Act 2000. The Plans are drawn up to be consistent with the Regional Transport Strategy, which is an integral part of the Regional Plan. The Local Transport Plan is therefore a statutory document, which sits between the Regional Plan and Core Strategy.
- 2.4.2 Local Transport Plans are five-year strategies for the development of local, integrated transport supported by a programme of transport improvements and initiatives. Local Transport Plans were first introduced in 2001, covering the period 2001-6. They represented a step-change in the planning and funding of transport provision across the country.
- 2.4.3 Derbyshire's current LTP sets out the County Council's transport proposals for the period 2006 - 2011. The LTP is structured around five transport priorities, each of which has its own strategy in the Plan. These priorities have been developed to reflect the views of all parties involved in transport, including government, transport providers, and the travelling public.
- Efficient Maintenance and management - to manage, maintain and improve the transport network
 - Improving local accessibility and healthier travel choices – through improvements to public transport, sustainable travel modes, and better land use planning.
 - Safer roads and communities – improve road and community safety through a combination of hard and soft measures.
 - Reduce congestion and promote a strong local economy – help strengthen the local economy through transport measures.
 - Better air quality and environment – reduce the environmental impacts of transport by taking account of air quality issues in decision making, pursuing Air Quality Action Plan initiatives and using recycled materials.
- 2.4.4 There are close links between spatial planning and the strategic aim of accessibility. Opportunities may also be taken to consider how spatial planning can contribute to the strategic transport aims. Derbyshire's LTP also considers broader quality of life issues - sustainable communities, quality of public spaces and landscapes, conservation of biodiversity, community safety, public health, noise, and climate change.

Linkages to LTP3

- 2.4.5 LTP1 and LTP2 covered five year periods. They were also assessed by the DfT via an initial review followed by annual reporting. The guidance published on LTP3 (DfT, July 2009) gives local highway authorities greater freedom to set longer plan horizons. As such, the horizon date for LTP3 could be 2026 and therein match the horizon date of the LDF process³.
- 2.4.6 It is important to note, however, that the preparation for LTP3 is due to commence in earnest in 2010, as the LDF plans are well under way. This mis-match between the start dates of the LDF and LTP process means that there remains some uncertainty with respect to the programmed schemes for the local highway network during the LDF plan period.
- 2.4.7 However, whilst this report is intended to support the LDF process via a consideration of the LTP, it is not intended to pre-suppose any initiatives that DCC may be considering within the forthcoming LTP3.
- 2.4.8 Notwithstanding this, the latest LTP guidance advises that it is critical that transport and spatial planning are closely integrated. Both need to be considered from the outset in decisions on the location of key developments such as housing, hospitals, schools, leisure facilities, and businesses, to help reduce the need to travel and to bring environmental, health and other benefits.
- 2.4.9 The LTP3 guidance also notes that integration of transport and spatial planning, whilst a particular consideration for growth areas, presents opportunities to facilitate more sustainable travel patterns and choices. The presumption is that growth ought to be located in places where existing transport infrastructure can accommodate the consequent demand. However, approaches such as demand management can help improve use of existing transportation network capacity.
- 2.4.10 In the longer term timeframe, a long-term transport strategy that matches the timeframe in the LDF would be beneficial both to the delivery of new housing developments and to the wider sustainability agenda. Derbyshire's LTP3, however, also needs to be flexible enough to reflect changes in national transport policy and changes in local circumstances such as travel patterns.

LTP documents are evolving from being simply concerned with traditional transport issues such as congestion and road safety to being more closely aligned with an authorities overall responsibilities; including spatial planning. There are timing opportunities for LTP3 to respond to the LDF process.

³ The end date for LTP3 in Derbyshire has not yet been finalised. There could also be shorter term implementation plan periods within the overall LTP3 plan period.

Policy Summary

- 2.4.11 National, regional and local policy all seek to reduce car usage through the promotion of sustainable alternatives. The drivers for this policy are varied (including reducing congestion etc.) but are now principally articulated through the climate change agenda.
- 2.4.12 The interactions between transport and land-use from a policy perspective are becoming stronger; with LTP3 being developed in the context of the established Regional Plan and forming LDFs.
- 2.4.13 Within the above, accessibility to services and facilities remains key. As such, new development would need to be located close to existing services and facilities, or incorporate new services and facilities within the development envelope.

3 Local Development Framework Proposals

3.1 Overview

- 3.1.1 The three LDFs being prepared for the Districts identified in the study area are currently at slightly differing stages in their development. All include housing and employment proposals, but at a varying level of detail.
- 3.1.2 This Section identifies the proposals for each Core Strategy area, as they are known to date. This relates principally to general locations for housing growth and associated services and facilities.

3.2 Chesterfield

- 3.2.1 The Core Strategy is currently at the 'Issues and Options' stage with a public consultation conducted during July and August 2009. This issues and options consultation sought the public's view on four broad strategies for accommodating growth in the Borough. These were;
- Concentrate development in existing settlements of Chesterfield, Staveley, and Brimington
 - Expansion at key locations (being Dunston, Staveley Works corridor, Brimington and the settlements around Markham Vale),
 - Disperse development throughout the Borough,
 - Concentration and Regeneration (being a combination of bullets 1 & 2).
- 3.2.2 *From the above*, the locations being considered for further housing include;
- Staveley
 - Brimington (North),
 - Brimington (South),
 - Dunston,
 - Duckmanton,
 - Mastin Moor.
- 3.2.3 The consultation document noted that;
- "Traffic congestion is a problem with Chesterfield at the crossroads of routes from the M1 to Sheffield and the Peak District. This is affecting air quality and people's health. The priorities for transport are better and more accessible public transport,*

securing a new Chesterfield-Steveley regeneration route, improvements to the A61, park and ride schemes, and improving the network of footpaths and cycleways to get more people to walk or cycle to work and school”.

- 3.2.4 One Area Action Plan (AAP) is currently in development; at the former Steveley works site. A baseline assessment of the traffic and transport conditions in the area around this AAP location found that;

*Traffic **access into the Steveley AAP area is currently poor** with direct access available from only Works Road and Hall Lane.*

*A key improvement option would be to **create a new highway access** into the site either following the alignment of the Chesterfield / Steveley Regeneration Route or otherwise. This would **provide relief for the A619** and would ensure adequate accessibility for the site for normal and servicing traffic;*

***Public Transport penetration into the site is poor** with only one regular bus service performing a local role in connecting Brimington and Barrow Hill with Chesterfield and Steveley.*

*With development, a **business case could more easily be made for additional public transport** services including fast shuttles into Steveley and Chesterfield. In addition, the option of reopening one or more of the rail lines for passenger services cannot be discounted and may be a more long term option.*

***Over trafficking problems on the A619 currently exist.** In addition, the junctions at the Chesterfield end of this route are approaching capacity and may act as a development constraint in the near future.*

3.3 North East Derbyshire

3.3.1 The Core Strategy for the North East Derbyshire District is currently being developed. Initial public consultation on this was held in May and June 2009. This included four main options;

- Direct the majority of new development to the four main towns of Clay Cross, Dronfield, Eckington and Killamarsh,
- Direct the majority of development to the four main towns and six larger villages of Grassmoor, Holmewood, North Wingfield, Pilsley, Tupton and Wingerworth,
- Direct development to the four main towns, the six larger villages and smaller centres with sufficient services to support additional growth,
- Development focused on the A61 and A6175 corridors but still allowing some development elsewhere to meet the needs of the population.

3.3.2 From the above, the locations being considered for further housing include;

- Dronfield,
- Eckinton,
- Killamarsh,
- Clay Cross (including Biwater site),
- Wingerworth (including Avenue site),
- Tupton,
- North Wingfield,
- Grassmoor,
- Holmewood,
- Pilsley,
- Calow / Long Duckmanton,
- Shirland,
- Morton / Stonebroom,

3.4 Bolsover

3.4.1 The Core Strategy for Bolsover is currently being developed.

3.4.2 Options for housing development have been identified within strategic aims for the area. These include:

- Preferred Option - Growth generally concentrated in the larger settlements but some villages selected for significant development due to special circumstances (e.g. employment opportunities nearby, need to support remaining services, proximity of primary school, etc):
- Option A - Focus new residential development around major employment sites: This option would create new residential areas close as possible to places like the Markham Vale Employment Zone, Castlewood Employment Zone and Barlborough Employment Growth Zone;
- Option B - Focus development on one town (e.g. Bolsover);
- Options C - Concentrate all significant development in the towns and main villages and apply restrictions on significant new development in all villages;
- Option D - Target major growth at Glapwell to create new main village with local centre;
- Option E - Target major growth at Stanfree;
- Option F - Target major growth at Hodthorpe.

4 Securing Sustainable Transport

4.1 Overview

- 4.1.1 As noted in Section 2, in the last ten years, there has been a much greater focus on securing transport sustainability. This has now been fully articulated in both the *Guidance on Transport Assessment* and the *Delivering a Sustainable Transport System* strategy.
- 4.1.2 The most widely quoted definition of sustainability and sustainable development was developed by the Brundtland Commission of the United Nations which stated that;
- “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*
- 4.1.3 In transport terms, sustainability is often taken as being the ability to access development without the use of a private car - with a particular focus on reducing single-occupancy car trips⁴. As such, it is focused on providing opportunities to make cycling, walking and public transport the modes of choice. In order for this to be successful, these modes must be made more convenient than the private car for the majority of trips.
- 4.1.4 The more trips that can be accommodated by sustainable means, the less private car traffic a development would generate. This section identifies the current patterns of mode choice across the study area, before examining the individual development options in terms of their potential for sustainable development (i.e. an assessment of which areas are inherently more sustainable than others based on current characteristics).
- 4.1.5 The section concludes with a discussion on how sustainable transport choices could be secured and locked-in to the developments via the planning process (i.e. how sites could enhance their sustainable transport-mode shares).
- 4.1.6 This approach is consistent with the *Guidance on Transport Assessment*, which seeks to maximise transport sustainability prior to the identification of measures to accommodate residual trips.

⁴ Transport Sustainability is often mistaken for “anti-car” policies; though Travel Planning often encourages car sharing schemes that seek to minimise single-occupancy trips by replacing these with multi-occupant car journeys.

4.2 Current Mode Choices

- 4.2.1 Figure 3, overleaf, shows the mode choices made by those travelling to work as identified from the 2001 Census data for each of the Districts / Boroughs within the study area. This information is summarised in Table 4.1, below.
- 4.2.2 This figure shows that car usage is least in Chesterfield; with bus use being greater than for other areas.

	Train	Bus	Taxi	Car Driver	Car Passenger	Motorcycle	Bicycle	Foot
Bolsover	0.9%	6.2%	0.3%	70.3%	8.8%	1.2%	1.4%	10.8%
Chesterfield	0.9%	9.7%	0.8%	64.4%	9.2%	1.2%	1.7%	12.2%
NE Derbyshire	1.1%	8.5%	0.2%	71.8%	8.4%	1.1%	0.9%	8.1%

Table 4.1: Mode Splits for Districts within Study Area (Source; 2001 Census, journey to work database, National Statistics)

4.3 Development Location and Mix

- 4.3.1 It is recognised that the requirement to interchange during a particular trip is an important dissuasive factor when selecting overall mode choice. Following from this, it is important to note that the most “door-to-door” trips over medium to long distances are provided only by the private car.
- 4.3.2 Walking and cycling modes are “door-to-door” over short distances (normally taken to be up to 2km and 5km respectively) and public transport has traditionally been effective at moving people within defined corridors of movement.
- 4.3.3 As such, ensuring that different land-uses (including key services and facilities) are contained within a geographic area (either the development itself or the proximate neighbourhood) is often taken as being a key enabler of sustainable-mode trips such that real mode choice is available to those wishing to travel. This is illustrated within Figure 4, below.

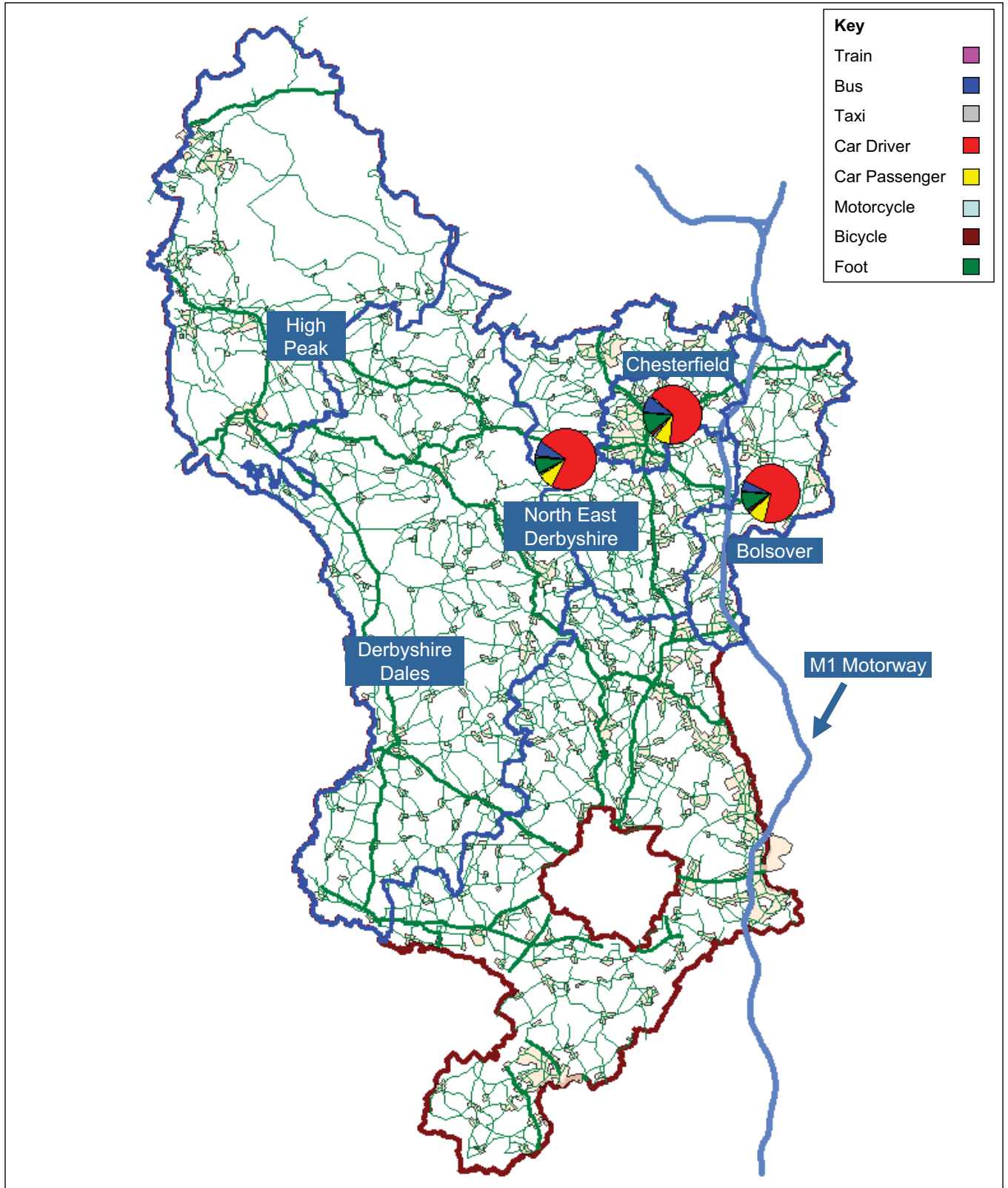


Figure 3: Mode Split by District



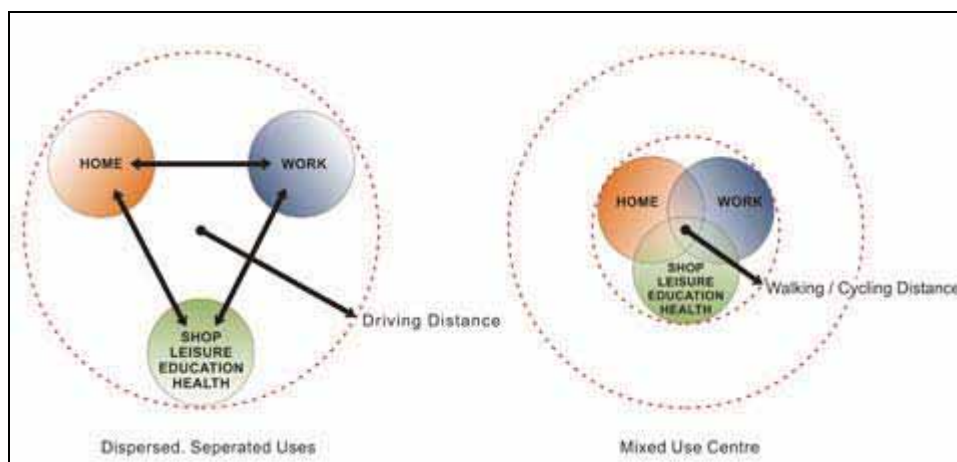


Figure 4: Mixed Use Development (taken from www.plan4sustainabletravel.org)

4.3.4 From the above figure, it can be seen that having several land uses within a defined area is to allow multiple activities to occur from one trip, to shorten trip lengths and to encourage non-motorised trips by making common destinations available within walking / cycling distance.

4.3.5 Table 4.2 indicates how various land-use design features are estimated to reduce per capita vehicle trip generation compared with conventional development that lacks these features;

Design Feature	Reduced Vehicle Travel
Residential development around public transport nodes	10%
Commercial development around public transport nodes	15%
Residential development along public transport corridor	5%
Commercial development along public transport corridor	7%
Residential mixed-use development around public transport nodes	15%
Commercial mixed-use development around public transport nodes	20%
Residential mixed-use development around public transport corridor	7%
Commercial mixed-use development around public transport corridor	10%
Residential mixed-use development	5%
Commercial mixed-use development	7%

Table 4.2: Travel Impacts of Land Use Design Features (Source: VTPI, 2001, from *Distillate, April 2006*) Notes (1) In this table, “residential mixed-use development” would indicate a residential development with our land-use integrated into the development form, whereas residential development indicates a wholly residential development (2) public transport node = bus or train station

4.3.6 Table 4.2 shows the relative importance of mixed-use development, public transport corridors and public transport nodes; with the latter (i.e. bus and train stations) having the greatest impact.

Research into the impacts of providing a mix of land-use types within a neighbourhood has found that;

- The presence of local facilities has a positive effect on mode choice (i.e. more non-car trips) but more so on car ownership, particularly multiple car ownership (Dargay and Hanly, 2004).
- diversity of services and facilities in close proximity to households reduces distance travelled (Banister, 1996; Farthing et al, 1995, 1997; Hickman and Banister, 2007a)
- work trip distances and times are shorter in areas of higher population density, higher employment density and greater land use mix (Frank and Pivo, 1994).
- trip lengths are shorter in 'traditional urban settings'. Walking and, to a lesser degree, public transport mode share is also higher in 'traditional urban settings' (Ewing and Cervero, 2001).
- the use of public transport and walk / bike modes is more likely where commercial and non-residential uses are nearby (within 300 feet of residence). Also, walking, cycling and public transport mode shares are greater in locations where shops are located close to office buildings (Cervero, 1989).

(taken from www.plan4sustainabletravel.org)

4.3.7 Given the above, according to the *Commission for Integrated Transport (CFIT)*, an initial basis for securing sustainable development in transport terms is the selection of a good site location where;

- Good accessibility is available, or can be developed, by sustainable modes to:
 - employment and other main facilities in the main towns or immediate vicinities
 - a rail station or other public transport interchange where good services are available to other (larger) centres within the sub-region
 - community facilities within the development or the surrounding neighbourhood
- Opportunities exist to:
 - promote the use of walking, cycling and public transport
 - provide an attractive level of public transport service which does not depend on (additional) subsidy over the longer term
 - utilise and support existing public transport services and community facilities in the locality

4.4 Proximity to Services and Facilities

- 4.4.1 As noted in the above section, the presence of services and facilities near to a development site can assist in promoting sustainable transport choices. However, an important consideration is to acknowledge the difference between what might be termed key facilities (which serve a wider catchment to the immediate neighbourhood) and those that are used on a more day-to-day level by those living and working in the immediate vicinity.
- 4.4.2 From this, there are three aspects that need to be considered when comparing and judging locations in transport sustainability terms;
- proximity to day-to-day services,
 - proximity to employment,
 - access to key services.
- 4.4.3 Derbyshire County Council has also undertaken some analysis using the software tool Accession which maps the accessibility of areas to services and facilities. This mapping is provided within Appendix A and is consistent with the tabular information presented in this section.

Proximity to Day-to-Day Services

- 4.4.4 Tables 4.3 to 4.4 show each of the proposed development locations and the number of key day-to-day services within 800m (a recommended walking threshold for accessing such services⁵) and 5km (the maximum cycling threshold). Distances for Primary Schools are not repeated due to the limited travelling ability of the target population.
- 4.4.5 These catchments are based on bird-fly distances and, as such, these tables do not make comment on walking access (e.g. in terms of available footways and pedestrian crossings etc.) but rather seek to identify the density of such facilities near to each of the development locations. Where development sites are not known, settlement centroids have been used in this analysis.
- 4.4.6 This information is taken from the 2008 Core National Local Authority Accessibility Indicators (DfT, 2009).

⁵ Taken from the IHT publication, "Providing for Journeys on Foot"

Core Strategy Area	Location	Number within xkm of Development centre-point				
		Primary Schools	Secondary Schools	FE Colleges	GPs	Food-stores ⁶
Chesterfield (800m Threshold)	Brimington North	1	0	0	0	1
	Brimington South	0	0	0	2	2
	Dunston	0	0	0	0	0
	Duckmanton	1	0	0	0	0
	Mastin Moor	2	0	0	0	2
	Staveley	3	0	0	2	1
Chesterfield (5km Threshold)	Brimington North		6	5	11	24
	Brimington South		7	4	13	32
	Dunston		6	5	14	29
	Duckmanton		4	1	7	13
	Mastin Moor		3	1	8	11
	Staveley		4	2	7	16

Table 4.3: Local Facilities – Chesterfield (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2009)).

4.4.7 The above table shows that Staveley, Dunston and Brimington all have nearby facilities (within the 2km walking threshold).

⁶ All supermarkets and convenience stores as held on Mapinfo Retail Locations database in October 2005.

Core Strategy Area	Location	Number within xkm of Development centre-point				
		Primary Schools	Secondary Schools	FE Colleges	GPs	Food-stores
Bolsover (800m Threshold)	Bolsover	3	0	0	3	2
	Clowne	1	1	0	1	2
	Shirebrook	2	0	0	1	2
	South Normanton	2	1	0	0	1
	Barlborough	1	0	0	1	0
	Creswell	2	0	0	2	2
	Pinxton	2	0	0	0	1
	Tibshelf	1	1	0	1	1
	Whitwell	1	0	0	0	1
	Doe Lea/Bramley Vale	1	0	0	0	0
	Glapwell	0	0	0	0	1
	Hodthorpe	1	0	0	0	0
	Langwith/Whaley Thorns	1	0	0	0	0
	New Houghton	1	0	0	0	0
	Shuttlewood	1	0	0	0	0
	Stanfree	0	0	0	0	0
Bolsover (5km Threshold)	Bolsover		2	0	3	4
	Clowne		1	1	5	6
	Shirebrook		4	2	5	8
	South Normanton		5	3	9	18
	Barlborough		2	2	6	7
	Creswell		1	1	3	6
	Pinxton		6	5	17	23
	Tibshelf		2	0	4	10
	Whitwell		1	1	3	7
	Doe Lea/Bramley Vale		1	1	3	6
	Glapwell		2	0	4	5
	Hodthorpe		1	3	3	7
	Langwith/Whaley Thorns		3	2	4	6
	New Houghton		4	3	7	11
	Shuttlewood		4	1	7	11
	Stanfree		4	2	10	8

Table 4.4: Local Facilities – Bolsover (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2009).

4.4.8 The above table shows that Barlborough, Clowne, Shirebrook, Bolsover, Pinxton, South Normanton, Whitwell, Glapwell, Hodthorpe and Tibshelf all have nearby facilities (within the 2km walking threshold).

Core Strategy Area	Location	Number within xkm of Development centre-point				
		Primary Schools	Secondary Schools	FE Colleges	GPs	Food-stores
NE Derbyshire (800m Threshold)	Dronfield	4	1	1	2	4
	Eckington	3	0	0	1	2
	Killamarsh	1	0	0	1	2
	Clay Cross inc Biwater	1	0	0	1	2
	Wingerworth incl Avenue	1	0	0	0	0
	Tupton	0	1	1	0	0
	North Wingfield	1	1	0	2	1
	Grassmoor	1	0	0	1	0
	Holmewood	0	0	0	0	1
	Pilsley	1	0	0	0	1
	Calow/Long Duckmanton	1	0	0	0	0
	Shirland	1	0	0	0	0
	Morton/Stonebroom	2	0	0	0	0
NE Derbyshire (5km Threshold)	Dronfield		5	2	14	26
	Eckington		4	2	12	14
	Killamarsh		4	3	12	17
	Clay Cross inc Biwater		2	1	7	6
	Wingerworth incl Avenue		5	3	13	26
	Tupton		3	1	9	12
	North Wingfield		3	1	7	10
	Grassmoor		4	1	10	15
	Holmewood		4	1	6	9
	Pilsley		3	1	6	8
	Calow/Long Duckmanton		7	4	15	34
	Shirland		1	1	3	5
	Morton/Stonebroom		2	1	6	8

Table 4.5: Local Facilities – North East Derbyshire (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2009).

4.4.9 The above table shows that Dronfield, Grassmoor, Eckington, Clay Cross, Wingerworth, Tupton and North Wingfield all have nearby facilities (within the 2km walking threshold).

Proximity to Employment

- 4.4.10 In 2006, to assist Local Authorities in the development of their accessibility strategies, the Government prepared a set of Core National Accessibility Indicators⁷. This work was published in 2007 at the Lower Super Output Area Level (LSOA)⁸.
- 4.4.11 For employment, these indicators showed how many jobs were within a 20 and 40 minute travel time of each LSOA by walking, cycling and public transport (between 0700hrs and 0900hrs). This information is summarised in Tables 4.6 to 4.8.

Location	Number of opportunities within 20 minutes	Number of opportunities within 40 minutes
Dronfield	38,578	195,641
Eckington	16,235	117,437
Killamarsh	16,421	99,172
Clay Cross	18,613	79,385
Wingerworth	24,597	85,064
Tupton	20,169	78,151
North Wingfield	15,071	76,099
Grassmoor	22,728	81,257
Holmewood	16,872	89,494
Pilsley	9,239	67,599
Calow / Long Duckmanton	29,619	113,870
Shirland	17,560	83,777
Morton / Stonebroom	11,562	71,835

Table 4.6: Access to Employment – North East Derbyshire (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

⁷ An update to this work was published in 2009 but at the District level. As such, the 2007 published data remains the most detailed with which to work.

⁸ The Output Area is a reporting unit used in the 2001 Census. LSOAs combine to form wards, Districts / Boroughs and, finally, County / Unitary levels.

Location	Number of opportunities within 20 minutes	Number of opportunities within 40 minutes
Bolsover	9,586	65,414
Clowne	7,408	46,680
Shirebrook	14,740	71,414
South Normanton	18,838	91,247
Barlborough	10,844	62,740
Creswell	8,405	54,472
Pinxton	16,216	93,517
Tibshelf	17,681	95,370
Whitwell	8,731	42,314
Doe Lea	17,751	90,321
Glapwell	13,375	92,695
Hodthorpe	11,355	47,902
Langwith / Whaley Thorns	12,352	70,225
New Houghton	16,468	94,901
Shuttlewood	11,393	59,439
Stanfree	11,393	59,439

Table 4.7: Access to Employment – Bolsover (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

Location	Number of opportunities within 20 minutes	Number of opportunities within 40 minutes
Brimington North	22,737	89,231
Brimington South	30,733	123,813
Dunston	31,007	108,450
Duckmanton	10,841	62,399
Mastin Moor	10,755	62,666
Staveley	9,922	56,695

Table 4.8: Access to Employment – Chesterfield (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

4.4.12 The above tables pre-date the Markham Vale development, which is still being developed but could alter employment patterns in the near future. However, they identify broad levels of opportunity at the LSOA level.

Access to Key Services

- 4.4.13 As per access to employment, accesses to hospitals are considered within the Core National Accessibility Indicators published in 2007 on a LSOA basis.
- 4.4.14 Tables 4.9 to 4.11, below, shows the number of hospitals⁹ within 30 and 60 minutes of each development location by walking, cycle and public transport.

Location	Number of hospitals within 30 minutes	Number of hospitals within 60 minutes
Dronfield	0	2
Eckington	0	4
Killamarsh	0	2
Clay Cross	0	2
Wingerworth	1	3
Tupton	0	3
North Wingfield	1	4
Grassmoor	0	4
Holmewood	1	5
Pilsley	0	3
Long Duckmanton / Calow	1	5
Shirland	0	2
Morton / Stonebroom	0	2

Table 4.9: Access to Hospital – North East Derbyshire (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

⁹ Classified by the Department of Transport as being a Hospital with an A&E department or with over 300 beds.

Location	Number of hospitals within 30 minutes	Number of hospitals within 60 minutes
Bolsover	1	3
Clowne	0	3
Shirebrook	1	4
South Normanton	1	2
Barlborough	0	4
Creswell	0	2
Pinxton	0	1
Tibshelf	1	2
Whitwell	1	2
Doe Lea	0	4
Glapwell	0	3
Hodthorpe	0	1
Langwith / Whaley Thorns	1	3
New Houghton	1	4
Shuttlewood	1	3
Stanfree	1	3

Table 4.10: Access to Hospital – Bolsover (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

Location	Number of hospitals within 30 minutes	Number of hospitals within 60 minutes
Brimington North	1	3
Brimington South	1	5
Dunston	1	4
Duckmanton	1	3
Mastin Moor	1	4
Staveley	1	4

Table 4.11: Access to Hospital – Chesterfield (Source: 2008 Core National Local Authority Accessibility Indicators (DfT, 2007))

4.5 Off-Site Connectivity

- 4.5.1 Given the limited range of walking and (to a lesser extent) cycling modes, the principal sustainable connecting mode for those developments outside the sub-regional centres and key towns would be by public transport.
- 4.5.2 The main public transport hub is Chesterfield which provides services across north Derbyshire and the wider region by both bus and train. Train services are also available to London. Whitwell, Creswell, Whaley Thorns, and Shirebrook are served by the Robin Hood Line running between Worksop and Nottingham. By bus, the main routes correspond to those radial routes emanating from Chesterfield.
- 4.5.3 Importantly, however, the presence of a bus service near to a development does not mean that those living and working at a development have a realistic alternative to the private car. This is because there needs to be a service that takes people to where they want to travel. Furthermore, the current patterns of public transport may not be a reliable indicator of future provision since;
- most bus routes are privately operated and can be withdrawn or amended at short notice and,
 - sizable new development may contribute to public transport improvements to improve accessibility from a particular site.
- 4.5.4 However, notwithstanding this, Tables 4.12 to 4.14 summarises each of the development locations and the existing services that are available in their general area. According to *Inclusive Mobility* (DfT, 2002) bus services should be within 400m of a development in order to be considered accessible - though without specific development sites, this level of analysis is not available at this stage. However, this section does give indication of public transport density and therefore potential for servicing.

Chesterfield

Location	Frequency	Main Service Centre?	Train Station Available?
Brimington North	Every 30 mins or less	Chesterfield, Calow, Staveley	No
Brimington South	Every 30 mins or less	Walton, Chesterfield, Duckmanton, Staveley	No
Dunston	Every 30 mins or less	Chesterfield	No
Duckmanton	Every 30 mins or less	Chesterfield, Bolsover,	No
Mastin Moor	Every 30 mins or less	Chesterfield, Bolsover,	No
Staveley	Every 30 mins or less	Chesterfield, Brimington	No

Table 4.12: Public Transport Services - Chesterfield

Bolsover

Location	Frequency?	Main Service Centre?	Train Station Available?
Bolsover	Every 30 mins or less	Shirebrook, Chesterfield,	No
Clowne	Every 30 mins or less	Bolsover, Shirebrook, Chesterfield	No
Shirebrook	Every 30 mins or less	Bolsover, Chesterfield	Yes
South Normanton	Every 30 mins or less	Alfreton, Sutton-in-Ashfield, Derby	No
Barlborough	Every 30 mins or less	Bolsover, Sheffield, Chesterfield	No
Creswell	Every 30 mins or less	Worksop, Chesterfield	Yes
Pinxton	Every 30 mins or less	Mansfield	No
Tibshelf	Greater than 30 mins	Chesterfield, Mansfield,	No
Whitwell	Every 30 mins or less	Worksop, Chesterfield	Yes
Doe Lea / Bramley Vale	Every 30 mins or less	Mansfield, Clay Cross, Chesterfield	No
Glapwell	Every 30 mins or less	Mansfield, Clay Cross, Chesterfield	No
Hodthorpe	Every 30 mins or less	Worksop, Chesterfield	No
Langwith/Whaley Thorns	Every 30 mins or less	Chesterfield, Mansfield,	Yes
New Houghton	Every 30 mins or less	Mansfield	No
Shuttlewood	Greater than 30 mins	Bolsover, Mansfield, Chesterfield, Sheffield	No
Stanfree	Greater than 30 mins	Sheffield, Chesterfield, Mansfield	No

Table 4.13: Public Transport Services - Bolsover

North East Derbyshire

Location	Frequency	Main Service Centre?	Train Station Available?
Dronfield	Every 30 mins or less	Chesterfield, Sheffield	Yes
Eckington	Every 30 mins or less	Chesterfield, Sheffield	No
Killamarsh	Every 30 mins or less	Chesterfield, Sheffield	No
Clay Cross inc Biwater	Every 30 mins or less	Chesterfield, Matlock	No
Wingerworth (incl Avenue)	Greater than 30 mins	Chesterfield	No
Tupton	Every 30 mins or less	Chesterfield	No
North Wingfield	Every 30 mins or less	Chesterfield	No
Grassmoor	Every 30 mins or less	Chesterfield	No
Holmewood	Every 30 mins or less	Chesterfield, Mansfield	No
Pilsley	Greater than 30 mins	Chesterfield, Mansfield	No
Calow/Long Duckmanton	Every 30 mins or less	Chesterfield, Bolsover	No
Shirland	Every 30 mins or less	Chesterfield	No
Morton/Stonebroom	Greater than 30 mins	Chesterfield	No

Table 4.14: Public Transport Services – North East Derbyshire

4.6 Ranking of Locations based on existing Services and Connectivity

- 4.6.1 The above information on existing public transport services, and the location of both day-to-day services and facilities can be combined into a coarse ranking of the potential residential development locations based on;
- Number of day-to-day facilities (weighted by proximity to give an overall score),
 - Number of accessible jobs (weighted by proximity),
 - Availability of accessible hospitals (weighted by proximity).
- 4.6.2 The above service and facility information has then been combined into an overall service score by ranking each component and summing the resulting ranks. For instance, a development location ranked 2nd in terms of day-to-day facilities, 4th in terms of employment opportunities and 3rd in terms of health would receive a score of 9. As such, the score is relational to the locations being considered such that an overall service and facility ranking can be identified. This method also means lower scores indicate a more sustainable development than higher scores.
- 4.6.3 To combine this overall service and facility score with the public transport information, the locations have been split into four quartiles and fixed within these quartiles. The locations have then been resorted within these quartiles based on the availability or otherwise of a train station (given that such facilities allow longer distance trips) and then bus service frequency (i.e. those locations with a train station or high bus service frequency rise to the top of their service and facility quartiles).
- 4.6.4 As is inferred above, these rankings could be amended depending on the measures promoted at individual sites to secure sustainable transport improvements but does give an indication as to which locations are inherently more sustainable than others in transport terms.

	Location		Score	Train	Bus
Higher Sustainability ↑	Dronfield	NE Derbyshire	37	Yes	2
	Brimington South	Chesterfield	4	No	2
	Calow/Duckmanton	NE Derbyshire	11	No	2
	Dunston	Chesterfield	21	No	2
	Brimington North	Chesterfield	34	No	2
	Eckington	NE Derbyshire	39	No	2
	North Wingfield	NE Derbyshire	44	No	2
	Holmewood	NE Derbyshire	48	No	2
	South Normanton	Bolsover	50	No	2
	Wingerworth	NE Derbyshire	38	No	1
	Tibshelf	Bolsover	54	No	1
		Shirebrook	Bolsover	58	Yes
	Grassmoor	NE Derbyshire	55	No	2
	New Houghton	Bolsover	56	No	2
	Killamarsh	NE Derbyshire	59	No	2
	Tupton	NE Derbyshire	60	No	2
	Staveley	Chesterfield	64	No	2
	Clay Cross	NE Derbyshire	69	No	2
	Bolsover	Bolsover	72	No	2
	Duckmanton	Chesterfield	75	No	2
	Langwith / Whaley Thorns	Bolsover	89	Yes	2
	Creswell	Bolsover	104	Yes	2
	Mastin Moor	Chesterfield	80	No	2
	Pinxton	Bolsover	81	No	2
	Doe Lea	Bolsover	81	No	2
	Glapwell	Bolsover	82	No	2
	Barlborough	Bolsover	85	No	2
	Clowne	Bolsover	97	No	2
	Shirland	NE Derbyshire	98	No	2
	Shuttlewood	Bolsover	84	No	1
	Stanfree	Bolsover	88	No	1
	Whitwell	Bolsover	106	Yes	2
Lower Sustainability ↓	Hodthorpe	Bolsover	130	No	2
	Morton / Stonebroom	NE Derbyshire	106	No	1
	Pilsley	NE Derbyshire	107	No	1

Table 4.15: Ranking of Development locations based on existing conditions

Important Note:- "Most Inherently Sustainable" does not equate to a location being sustainable if the development does not take into consideration measures identified in this report within its delivery. Conversely, "Least Inherently Sustainable" does not equate to a location being unsustainable as the development could take action to improve its inherent character. Furthermore, the locations are ranked relative to each other only.

4.7 Potential Improvements to Sustainable Transport

- 4.7.1 The above ranking tables identified how sustainable, in transport terms, each location is relative to each other. However, improvements to this 'base' transport sustainability could be made through positive intervention; for instance, it is understood that re-development around Brimington could include for a rail halt at Barrow Hill.
- 4.7.2 This sub-section identifies how improvements to transport sustainability could be secured and what the impact would be on transport mode choice of these strategies.

Bus Route Improvements

- 4.7.3 The Government publication, *Building Sustainable Transport into New Developments* (DfT, April 2008) stresses the role of destination analysis to support the assessment and development of practical sustainable modes.
- 4.7.4 At a later stage of assessment, high-level modelling techniques should be employed to determine where those living and working at the various developments are likely to wish to travel in order to determine alternative public transport routes.
- 4.7.5 At a later stage of assessment (Stage 2), high-level modelling techniques are to be employed to determine where those living and working at the various developments are likely to wish to travel. However, as an initial view, developments should be linked by public transport services to their sub-regional centre. For the study areas, this local centre would principally be Chesterfield town centre and its station¹⁰; though, for Bolsover, Worksop and Mansfield could also be considered.
- 4.7.6 For larger developments, new public transport services (whether fixed route or demand responsive) may be required.

¹⁰ By connecting with railway stations, longer distance trips are accommodated

On-Site Development Infrastructure

- 4.7.7 According to the Government publication, *Building Sustainable Transport into New Developments* (DfT, April 2008), “the layout of a development has a significant impact on how people choose to travel.”
- 4.7.8 Indeed, a year before this document was issued, the benefits of good design on mode choice was recognised in the DfT publication *Manual for Streets* which sought to directly influence the layout of new residential development.
- 4.7.9 The *Manual for Streets* replaced the previous guidance (*DB32* and the accompanying *Places, Streets and Movement*) which was focused on providing for the car. By comparison, *Manual for Streets* provided a new hierarchy for the provision of infrastructure within the development envelope (as summarised in Figure 5) which placed the needs of pedestrians and cyclists at the forefront of design.

<p>Consider first</p> <p>↓</p> <p>Consider last</p>	Pedestrians
	Cyclists
	Public transport use
	Specialist service vehicles (e.g. emergency service vehicles, waste etc)
	Other motor traffic

Figure 5: Development-Envelope Design Hierarchy (Source; *Manual for Streets*)

- 4.7.10 In the above, it is acknowledged that the attractiveness of walking and cycling is not only influenced by distance but also the quality of the walking environment.

4.7.11 Design features that encourage sustainable transport usage include providing;

- comprehensive, direct and permeable networks for walking, cycling and public transport;
- routes on desire lines to local services and facilities, and that tie into existing networks,
- safe routes (with adequate surveillance, sight lines and lighting),
- high quality surfacing and furniture materials (including public transport infrastructure),
- clear legibility (i.e. it should be easy for people to work out where they are and where they are going in order to navigate easily around the community),
- community bike facilities (e.g. bike rental),
- good interchange with other modes (including the provision of secure cycle parking close to (or within) residences and employment locations),
- preference to public transport access / egress from larger developments.

4.7.12 Design features that discourage non-sustainable transport modes include;

- Providing non-direct linkages for vehicle trips (thus giving those using walking / cycling networks a time advantage),
- Providing secure parking away from residences and employment (i.e. limit car access to the periphery of the development to enable partial or complete car free development),
- Limiting car spaces and / or charge for residential car parking. (However, provision below demand will only work successfully where adequate alternatives to car usage exist.)

Travel Plan Process

- 4.7.13 PPG13 identifies Travel Plans as being a key tool with which to secure the transport sustainability of new development.
- 4.7.14 The Travel Plan process is centred on the active management of trips to and from a development site, normally via a Travel Plan Co-ordinator who would be an employee of the eventual developer.
- 4.7.15 The Travel Plan process is based on the following principles; which are illustrated in Figure 6;
- 4.7.16 A Travel Plan should;
- be managed via a Travel Plan Co-ordinator,
 - promote non-car use, via a variety of Measures
 - be monitored through surveys which relate to Targets
 - be flexible to change

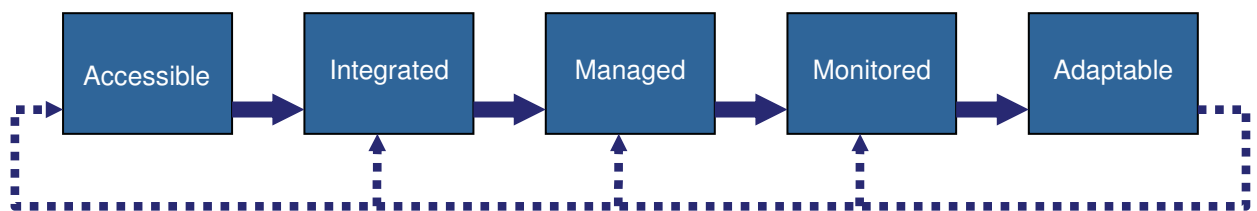


Figure 6: Travel Plan Principles and their interaction

- 4.7.17 The Measures could include;
- General promotion of non-car modes (such as cycle to work week),
 - Tax incentives (such as cycle mileage, or the *Cycle2Work* scheme)
 - Discounts on non-car modes (such as on public transport ticketing)
 - Parking Management (with preferential parking for car sharing),
 - Car Sharing / Car Club schemes,
- 4.7.18 Each District / Borough will require Travel Plans when it considers planning applications for the proposed LDF developments. The development of an LDF Travel Plan Framework would ensure that proposal specific Travel Plans are consistent and contribute towards the larger goals of sustainable travel in Derbyshire as a whole.

Impact on Mode Split

- 4.7.19 The impact of sustainable transport strategies (also called soft measures or Smarter Choices) have been subject to increasing research in recent years.
- 4.7.20 The two reports that form the basis of this research (and which are of most interest to north Derbyshire) are the WS Atkins report, *Assessing the effect of transport white paper policies on national traffic*, 1999, and the Halcrow reports of 2001 / 2002 (*Multi-modal studies: soft factors likely to effect travel demand*).
- 4.7.21 In summary, WS Atkins argued that, by 2010, workplace travel plans and school travel plans could reduce peak traffic levels by about 2% for rural areas and small towns, with Soft Measures as a whole capable of achieving a 13% reduction in traffic levels in the off-peak, and up to 3% in the peak periods for a small urban / rural town. The report by Halcrow concluded that soft measures could reduce traffic levels by 5%.
- 4.7.22 Following these reports, the Government published Smarter Choices: Changing the Way We Travel (2004) which identified that a mode application of soft measures could reduce national traffic levels by 2-3% but with more high-intensity application, reductions of 11% could be achieved.
- 4.7.23 During May 2007, the Department for Transport released initial results from the *Sustainable Travel Towns* project which showed falls in car traffic by over 10%, alongside double-digit increases in public transport (13-22%), walking (17-29%) and cycling trips (25-79%). An important component of the Sustainable Travel Towns projects was Individualised Travel Marketing, also known as Personal Travel Planning.
- 4.7.24 Recently published (November 2009) evidence from the Cycling Demonstration Towns reported evidence of mean increases in cycling levels of 27% (though not all of this travel was abstracted from the private car).
- 4.7.25 The above mode shifts are within the range of potential mode-shift given in Table 4.16 reproduced below, and therefore it is recommended that this table is used to inform potential mode shifts from the proposed LDF developments if they can be delivered alongside a robust package of sustainable transport measures.

Design Feature	Reduced Vehicle Travel
Residential development around public transport nodes	10%
Commercial development around public transport nodes	15%
Residential development along public transport corridor	5%
Commercial development along public transport corridor	7%
Residential mixed-use development around public transport nodes	15%
Commercial mixed-use development around public transport nodes	20%
Residential mixed-use development around public transport corridor	7%
Commercial mixed-use development around public transport corridor	10%
Residential mixed-use development	5%
Commercial mixed-use development	7%

Table 4.16: Travel Impacts of Land Use Design Features (Source: VTPI, 2001, from Distillate, April 2006)

- 4.7.26 Within the above table, access to a public transport corridor is generally taken to be accessible if there is a stop within 400m of a development, or 800m from a hub (such as a bus or railway station).
- 4.7.27 From the above, it can be inferred from the above table that sustainable transport measures are likely to be more easily delivered within larger settlements than in smaller settlements, or those that are more isolated from destination desire points. This is since larger settlements allow for;
- Greater numbers and range of services and facilities within walking and cycling distance,
 - More frequent public transport services, serving a range of destinations,
 - More potential patronage to support the above public transport services,
 - Potential for greater mix of interacting development types.

5 Base Conditions

5.1 Overview

- 5.1.1 The developments noted in the individual LDFs would not take place against a blank canvas. Each site is likely to have a particular base conditions context against which development would take place. In transport terms, this context would constitute the available network infrastructure and the existing traffic using this infrastructure.
- 5.1.2 However, the characteristics and distribution of existing traffic can also reveal how future development may perform in terms of where people would wish to travel and what transport modes they would choose in order to reach these destinations.
- 5.1.3 The above issues are identified in this section.

5.2 Description of the available Transport Infrastructure

- 5.2.1 Both Bolsover and North-East Derbyshire surround the settlement of Chesterfield which provides the sub-regional centre for each of the other two Districts. For instance, the settlements of Bolsover, Clay Cross and Dronfield provide other smaller centres; with the regional centre for the study area as a whole being Sheffield.
- 5.2.2 **Strategic Network:** The main strategic route is the M1 which runs north-south through the study area, with Junctions 28, 29A, 29 and 30 allowing access from the study area onto the motorway network.
- 5.2.3 M1 Junction 28 provides connection between the A38(T) and the M1. As such, the A38 is an important east-west corridor, although the majority of this route is outside the study area. Junction 28 is a very busy junction, reflected through full signalisation and the provision of free-flow turning lanes. Junction 29 is partially signalised, and there are now plans for the partial signalisation of Junction 30 in association with development in the area (that is non-LDF related).
- 5.2.4 Junction 29A was designed to serve the MEGZ development. A new road, the Staveley Northern Loop Road, is currently being developed to better connect this junction with the A619.
- 5.2.5 M1 Junctions 28 and 29 have been recently upgraded to include for on-ramp metering by the Highways Agency. There are now proposals to operate a Managed Motorway between Junctions 28 and 30; which means that the hard shoulder may, if the scheme proceeds, be opened to traffic during peak hours.

- 5.2.6 According to the Highways Agency's Regional Network Reports, the following are locations (within the study area) of known delay;
- M1 Junctions 24 to 30 inclusive,
 - A38 approaching M1 Junction 28,
 - A52 at various junctions between the M1 and Bingham.
- 5.2.7 **Local Strategic Network:** The A61 is an important distributor within the study area (NE Derbyshire and Chesterfield) and forms a parallel route to the M1. Indeed, the A61 is used as a tactical diversion route when the motorway network is closed.
- 5.2.8 Running east – west, the A617 provides connection between Chesterfield and Mansfield, and the A619 between Chesterfield and Worksop.
- 5.2.9 **Miscellaneous Network Factors:** There are two principle types of stresses to which the Derbyshire highway network in this area must respond within the study area. These are;
- Seasonal (and non-predictable) changes to the road network supply,
 - Non-predictable diversions of national traffic.
- 5.2.10 By examination of long term traffic count sites, seasonal variations in traffic are not as marked in Chesterfield, Bolsover and NE Derbyshire as is the case within the bordering Derbyshire Dales and High Peak zone (though the routes from Chesterfield into the Peak District can be subject to seasonal increases in traffic associated with tourism). However, it is a common feature for snowfalls to disrupt certain of the roads within the study area, noticeably those routes that cross the Peak District National Park. These can increase congestion on alternative routes through the study area.
- 5.2.11 For the last point, it is noted above that closures of the M1 can divert substantial volumes of traffic onto the A61 through Chesterfield and other settlements within the study area on this route (e.g. Clay Cross). The A61 can also be used as an alternative route into Sheffield at times of congestion on the M1.

5.3 Existing Congestion and Network Stress

5.3.1 Derbyshire County Council maintain a network of traffic count sites and other temporary traffic count equipment which logs the usage of the local highway network. From this information, DCC has mapped flow ranges (in terms of Annual Average Daily Traffic, AADT) and delays (in the AM and PM network peak hours). This mapping is given within Appendix B.

5.3.2 Table 5.1 summarises those locations which currently experience the highest flows across the normal working day.

Road	Traffic Flow (AADT)
A619 (From B6050 - M1)	25,000 – 50,000
A617 (From M1 - B6417)	10,000 – 25,000
A61 (From A617 - B6014)	10,000 – 25,000
B6039 (From A617 - B6038)	10,000 – 25,000
A632 (From A61 - B6419)	10,000 – 25,000
B6050 (From A61 - A619)	10,000 – 25,000
A619 (From A61)	10,000 – 25,000
B6057/B6052 (From B6051 - past Eckington)	10,000 – 25,000
A61 (From B6050 - past Dronfield)	10,000 – 25,000
B6057 (From A61 - B6158)	10,000 – 25,000
A619 (From A617 - B6150)	10,000 – 25,000
A632 (From Walton Road - B5057)	10,000 – 25,000
B6056 (From A61 - B6054)	10,000 – 25,000
A516 (From A50)	10,000 – 25,000

Table 5.1: Roads Experiencing the highest flow in the Study area (excluding M1) – 2008
 (Source; Derbyshire County Council traffic count database, 2008)

5.3.3 The above are associated with the locations stated below in Table 5.2 of high journey delay in the AM and PM peak hours. High journey delay can be defined by delay per vehicle mile of greater than 2 minutes and 30 seconds, and high / medium greater than 1 minute 15 seconds. Table 5.2 summarises the locations for which there is measured 'high' and 'medium / high' delay.

Journey Delay	AM	PM
High	Sections of Ashgate Road	Along Calow Lane / Hady Lane route (from A617 & A632
	A619	Storth Lane, South Normanton
	A632	-
	Somersall Lane (between A619 & Yew Tree Drive)	-
	Wingerworth centre	-
	Whitwell	-
Medium / High	Chesterfield: shopping centre, A61, Storforth Lane, B6039, Ashgate Road, A619 (Brimington, Rother Way, Chatsworth Road), B6050, B6150, B5052 (Whittington Hill), Church Street North, Callow Lane,	Chesterfield: shopping centre, A61, Storforth Lane, B6039, Ashgate Road, A619 (Brimington, Rother Way, Chatsworth Road), B6050, B5052 (Whittington Hill), Church Street North,
	A632 (B6425 to Rectory Road – Long Duckmanton)	-
	Ashover centre	-
	Clay Cross centre	Clay Cross centre
	Church Street West/Park Lane (Pinxton)	-
	A38 (B6406 to Birchwood Lane – South Normanton)	A38 (B6406 to Birchwood Lane – South Normanton)
	Greer Lane (Glapwell)	-
	Meadow Lane (Shirebrook)	-
	Shirebrook centre	Shirebrook centre
	Eckington centre	Eckington centre
	Staveley centre	Staveley centre
	Pinxton centre	Pinxton centre
	South Normanton centre	South Normanton centre
	Hodthorpe centre	Hodthorpe centre
	Dronfield centre	-
	-	Clay Cross
	-	Long Duckmanton
	-	Geer Lane (east of Glapwell)
	-	Far Lane (Moorhall)
	-	A61 (Clay Cross to Stretton)

Table 5.2: Locations of High and Medium Delay (Source; Derbyshire County Council traffic count database, 2008)

5.4 “Hot Spot” Identification

- 5.4.1 No highway network model of the north Derbyshire districts currently exists. Such a model would allow a detailed understanding of trip patterns based on a representation of the highway network and its performance (i.e. journey speed, presence of congestion and associated queuing etc).
- 5.4.2 To identify key network issues, discussions have been held with Derbyshire’s local highway network teams to identify the key locations which exhibit signs of stress (i.e. slow moving or stationary traffic) during the peak network hours.
- 5.4.3 The tables below are focused on issues affecting private car traffic, only. However, and as is detailed later in this section, issues affecting the main routes also result in delay to bus services using these routes.
- 5.4.4 This section does not explicitly examine issues relating to pedestrians or cyclists. *Planning Policy Guidance 13: Transport* (PPG13) identifies a maximum walking threshold of 2km for pedestrians. As such, specific issues relating to the LDF developments are likely to be addressed at a more detailed stage of assessment. For cycling, PPG13 identifies a maximum cycling threshold of 5km. Away from dedicated cycle routes, cycling conditions are likely to match those given in the tables below.
- 5.4.5 Notwithstanding the above, this section is not intended to be exhaustive. Further issues may be identified at later stages of assessment when detailed proposals regarding access etc. are developed. However, this section is intended to identify the key issues regarding the highway network in the Study Area.

Chesterfield

5.4.6 Table 5.3 identifies the issues in Chesterfield.

Location	Description of Perceived / Observed Problem	Type of Problem	Extent of Problem
Chesterfield	A61 junctions are sources of congestion and queuing during peak times (known as the Tesco, Hornsbridge, St. Augustine's and Storforth Lane junctions, Sheffield Road and Whittington Road roundabout).	Junctions	Tesco and Hornsbridge recently signalised. Whittington Road roundabout known accident location.
	Queuing on Markham Road and St. Mary's Gate which impacts on the Hornsbridge Roundabout	Junctions and Link Friction ¹¹	Irregular, at peak times
	Localised congestion along Chatsworth Road	Link Friction	Peak hours and seasonal
	Saltergate Gyratory	Junction	PM peak
Brimington / Hollingwood	Brimington gyratory	Junction	Regular AM and PM peak
	Junction of A619 / Troughbrook Road / Inkersall Green Road	Junction	Accident problem

Table 5.3: Key Highway Network issues in Chesterfield

North East Derbyshire

5.4.7 Table 5.4 identifies the issues in North East Derbyshire.

Location	Description of Perceived / Observed Problem	Type of Problem	Extent of Problem
Clay Cross	Junctions of A61 / A6175 Clay Cross	Junction & Link Friction	Queues in peak periods – remodelling of Clay Cross with new supermarket is proposed
Killamarsh	Poor links to strategic network	General Access	

Table 5.4: Key Highway Network issues in North East Derbyshire

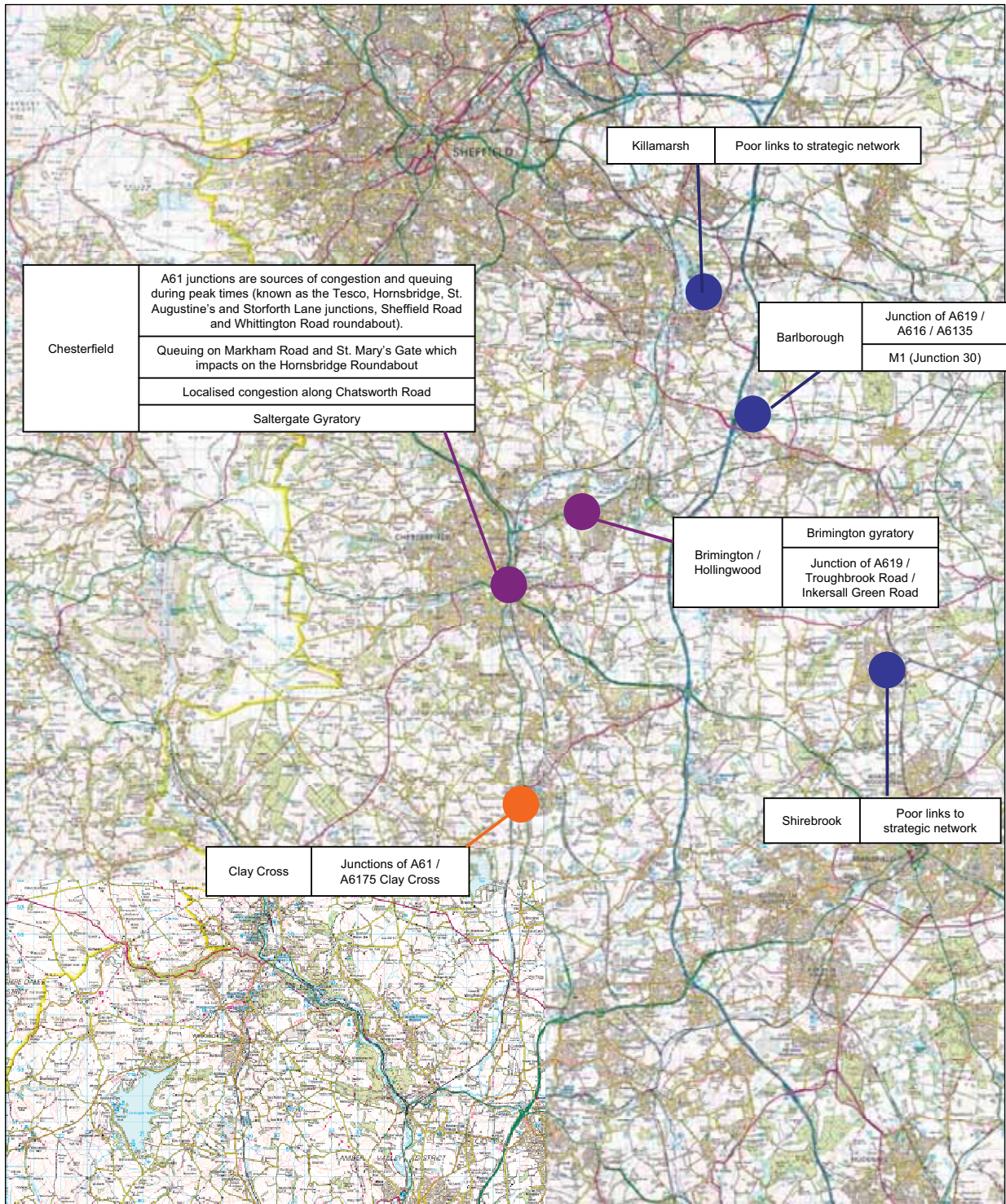
¹¹ Link Friction is used here to describe interaction between side roads, turning traffic, parking, pedestrians, public transport and unsegregated cyclists, normally within town centre environments, which reduces link capacity.

Bolsover

5.4.8 Table 5.5 identifies the issues in Bolsover.

Location	Description of Perceived / Observed Problem	Type of Problem	Extent of Problem
Barlborough	Junction of A619 / A616 / A6135	Junction	Queuing in peak periods
	M1 (Junction 30)	Junction	Scheme identified to signalise junction
Shirebrook	Poor links to strategic network	General Access	

Table 5.5: Key Highway Network issues in Bolsover



North East Derbyshire, Bolsover and Chesterfield Hotspots



5.5 Potential Future Schemes

- 5.5.1 **Programmed Schemes:** The main trunk road through the study area, for which the highway authority is the Highways Agency is the M1 motorway. This motorway has undergone significant changes in the last few years with the opening of Junction 29A in 2008, with further changes planned in the form of a “Managed Motorway” between Junctions 28 and 30. This would involve using the hard shoulders during peak times to “increase” the capacity of the network.
- 5.5.2 **Regional Funding Allocation (RFA):** Following the submission of the Region's advice to the Government in February 2009, the following scheme is proposed to be taken forward in this Region, subject to Ministerial approval.
- Markham Vale / Markham Employment Growth Zone (MEGZ) – under construction
- 5.5.3 Below the level of approved schemes, Programme Entry status is intended to provide the expectation of funding necessary in order for the promoting authority to apply for any statutory powers that may be required, such as Transport and Works Act powers, highways orders, planning consents, compulsory purchase orders etc. It is not, however, a commitment that funding will be provided, which only comes with Fully Approved status. There are no such schemes presently at Programme Entry status for Derbyshire.
- 5.5.4 **Other Schemes:** Notwithstanding the above schemes that are either programmed or have secured funding at a regional level, there are other historic schemes which are known to exist at varying stages of assessment. These include;

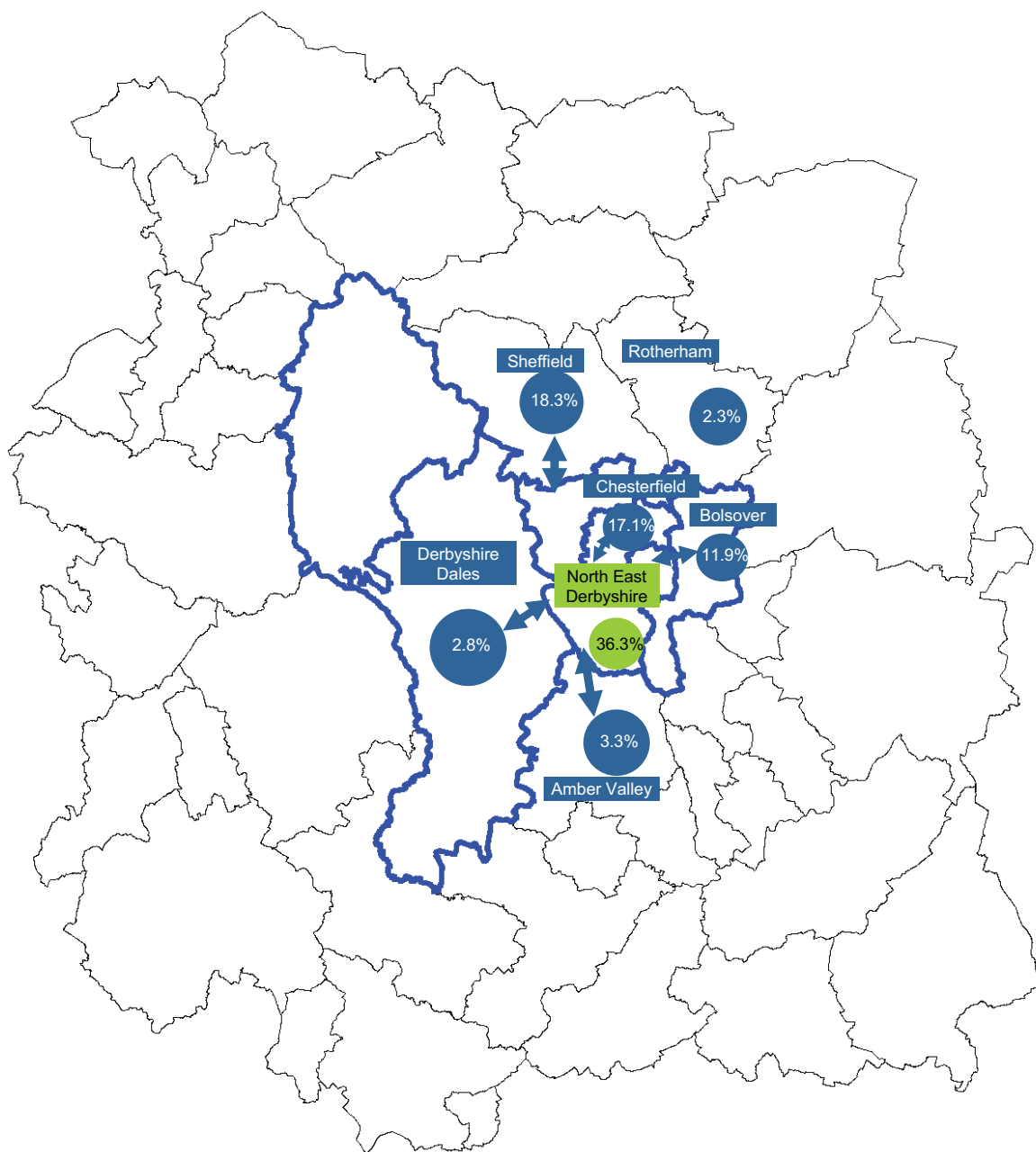
Staveley Regeneration Route	Referred to in the Staveley AAP, a relief road from Hall Lane, Staveley, to the Sainsbury's roundabout which would bypass Hollingwood and Brimington.
Redevelopment of Clay Cross	Planning permission for a new food retail-led development in Clay Cross is known to be associated with large-scale amendments to the town centre traffic system.
Coalfields Link Road	A bypass of the A617 through Glapwell, with potential to improve access to Shirebrook via a link road. Examined to feasibility stage only.
Chesterfield Town Centre Link Road	Referred to in the Chesterfield Town Centre Masterplan 2009 as a road linking Hollis Lane A632 to the railway station and an improved link from the railway station to the town centre.

5.6 Travel Patterns

- 5.6.1 As part of the 2001 Census, the population of the United Kingdom were asked several questions relating to their journeys to work; including where they worked and the primary mode of travel they used to reach that working destination. This, along with the home postcode of the respondent, allowed a detailed picture of the journey to work habits of the UK population to be constructed. This data is available on a ward by ward basis.
- 5.6.2 It is recognised that not all trips on the local transport network constitute journeys to work. However, journeys to work were the single biggest trip type noted in *Focus on Personal Travel* (DTLR, 2001), constituting 19% of all trips across the working day. As such, this journey to work data represents a good proxy for determining both the catchment of an individual ward (in terms of the main draws to and from an area) and also the mode choices of those travelling between these wards. This information is summarised in Figures 7 to 12.
- 5.6.3 From these figures, it can be seen that the key features are the overall draw of travel and the proportion that is retained within the District.
- 5.6.4 Related to this, the percentage draws on the diagrams do not equal 100%, as small draws have not been shown. The lower proportion of travel that is shown on the diagrams effectively means that higher proportions are travelling to a wider range of end destinations.
- 5.6.5 Table 5.6 summarises total and car trip distributions for the three districts studied. This shows that Chesterfield produces a high proportion of travel to outside of the District; presumably linked to both its train station and proximity to the motorway network.

District	Trip Type	Sum of Main Draws	Biggest Draw	Sum of Minor Draws
Chesterfield	Total Trips	49.4%	NE Derbyshire	21.7%
	Car Trips	41.4%	NE Derbyshire	24.3%
NE Derbyshire	Total Trips	36.3%	Sheffield	8.0%
	Car Trips	31.1%	Sheffield	18.7%
Bolsover	Total Trips	39.2%	Chesterfield	16.3%
	Car Trips	30.7%	Ashfield	18.2%

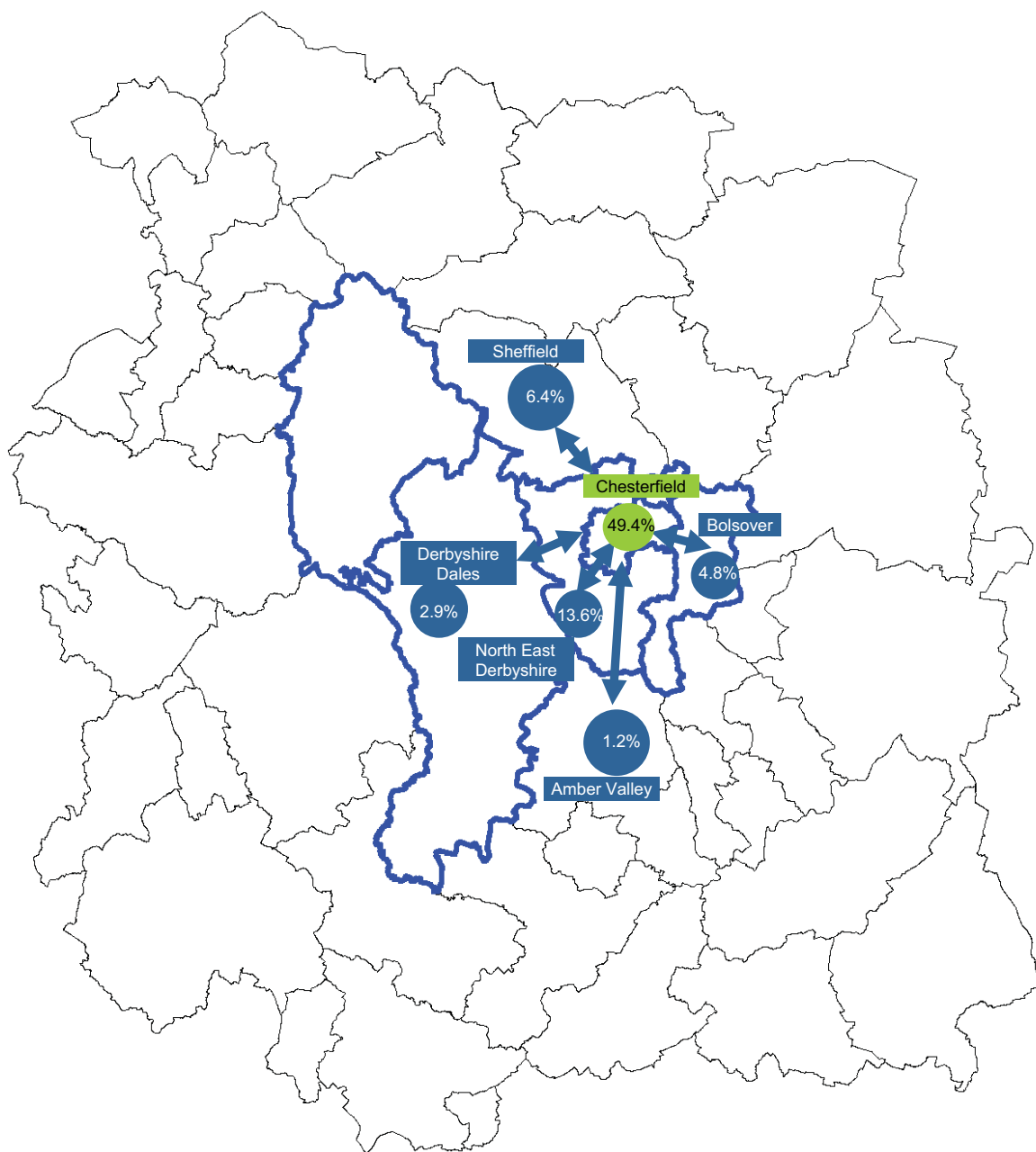
Table 5.6: Summary of District trip distribution (Source, 2001 Census journey to work database, National Statistics)



Percentage Shown	92.0
Percentage to other areas	8.0
Total	100%

Figure 7: Total Trips North East Derbyshire

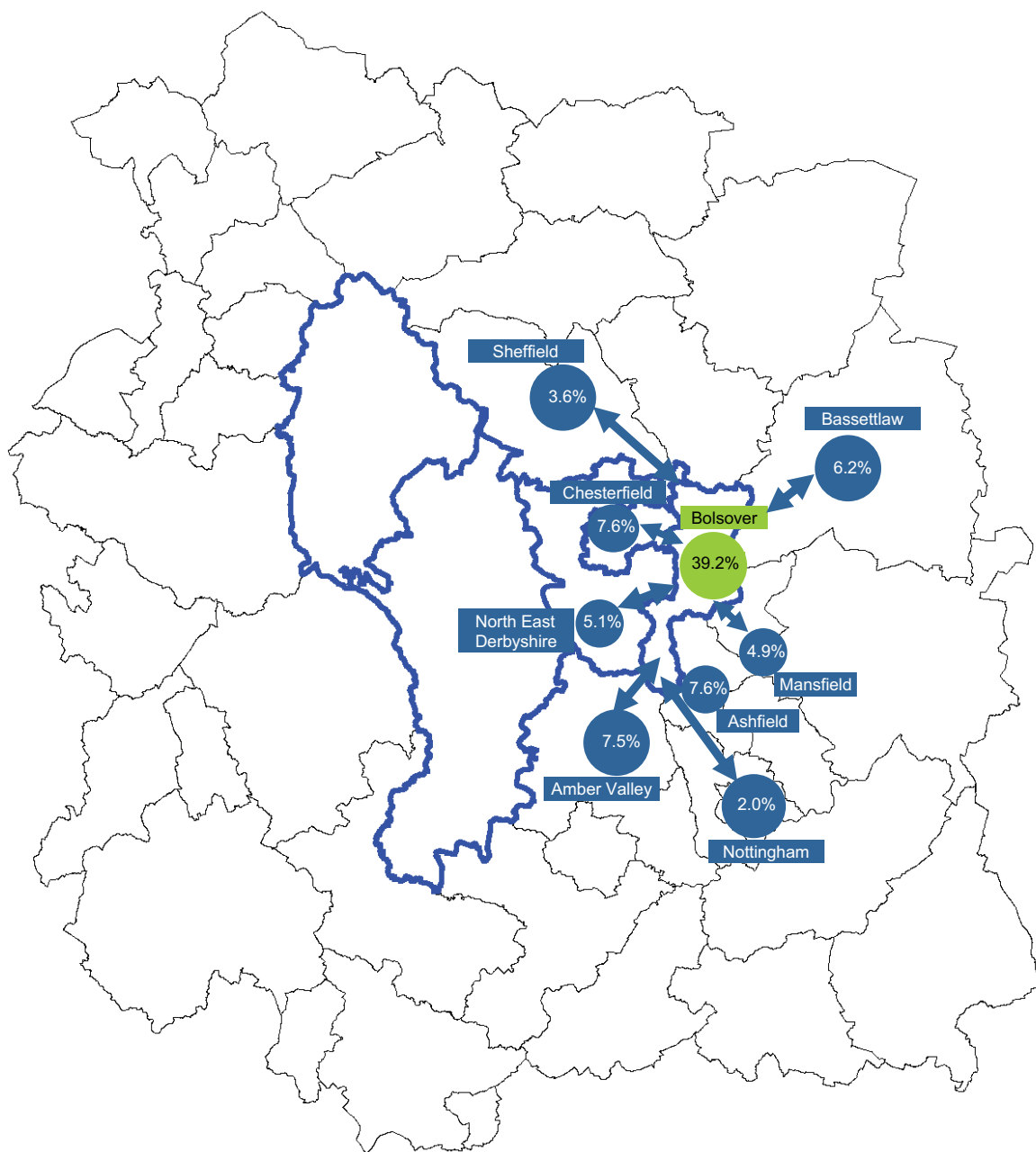




Percentage Shown	78.3
Percentage to other areas	21.7
Total	100%

Figure 8: Total Trips Chesterfield

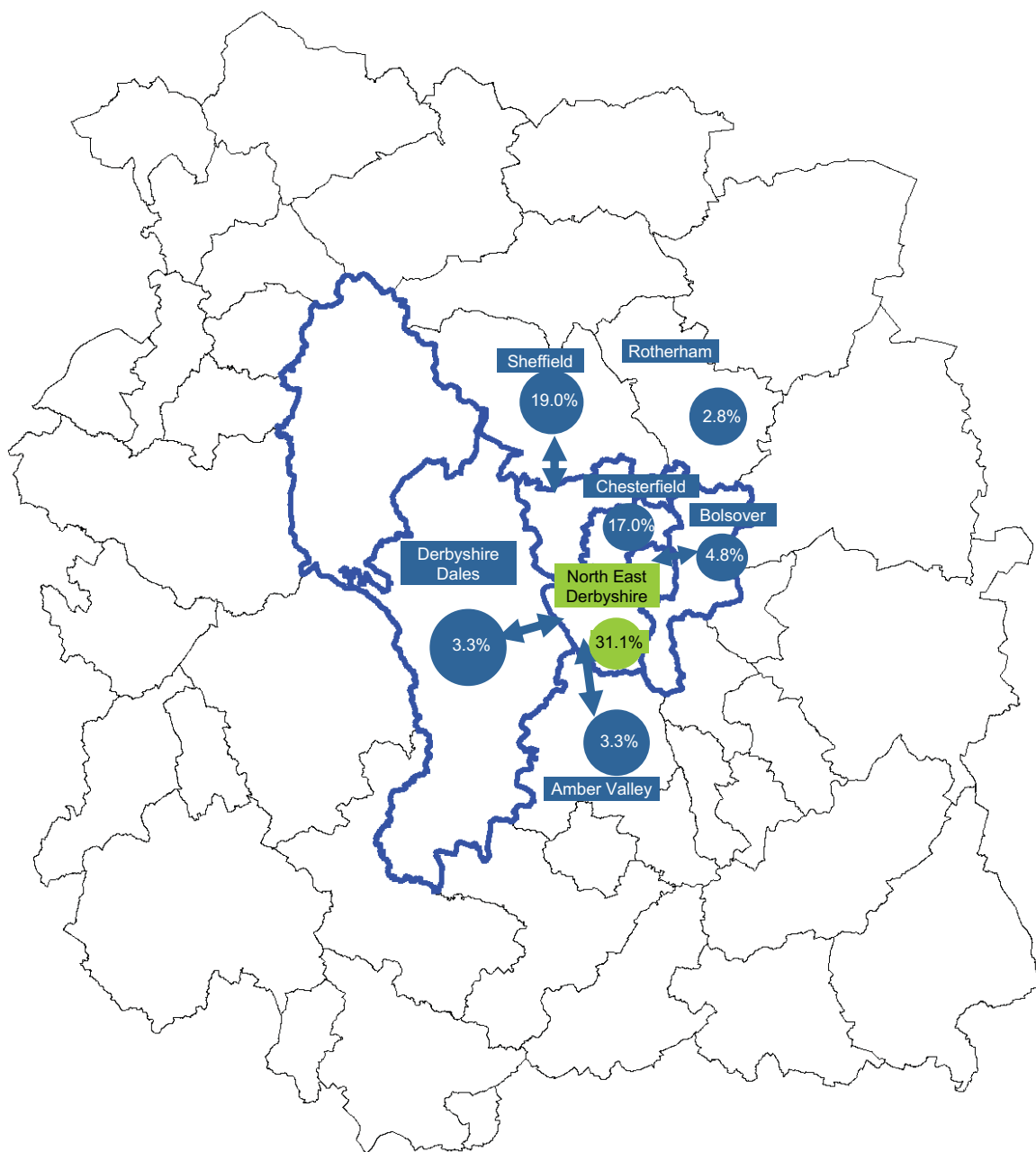




Percentage Shown	83.7
Percentage to other areas	16.3
Total	100%

Figure 9: Total Trips Bolsover

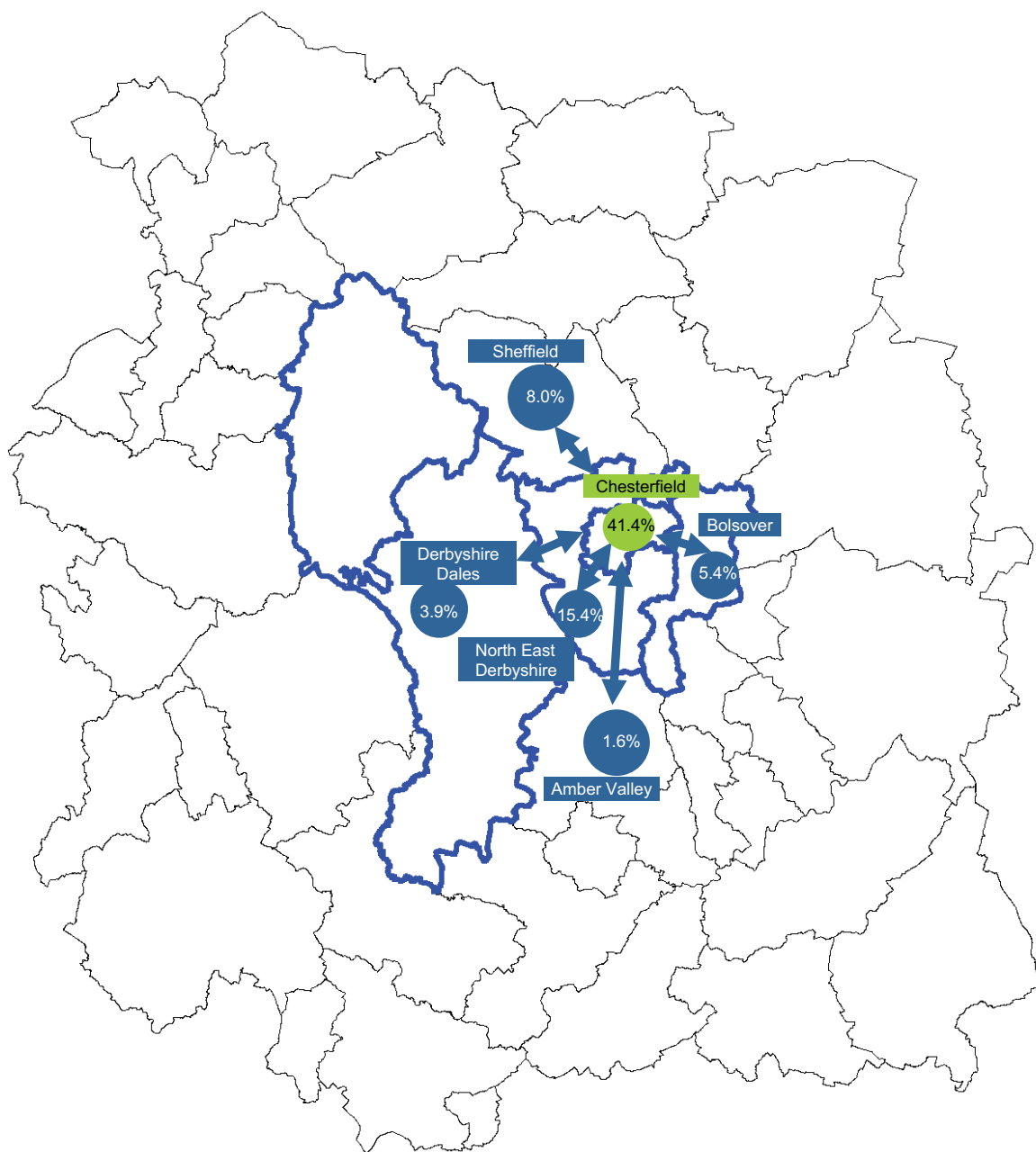




Percentage Shown	81.3
Percentage to other areas	18.7
Total	100%

Figure 10: Car Driver Trips North East Derbyshire

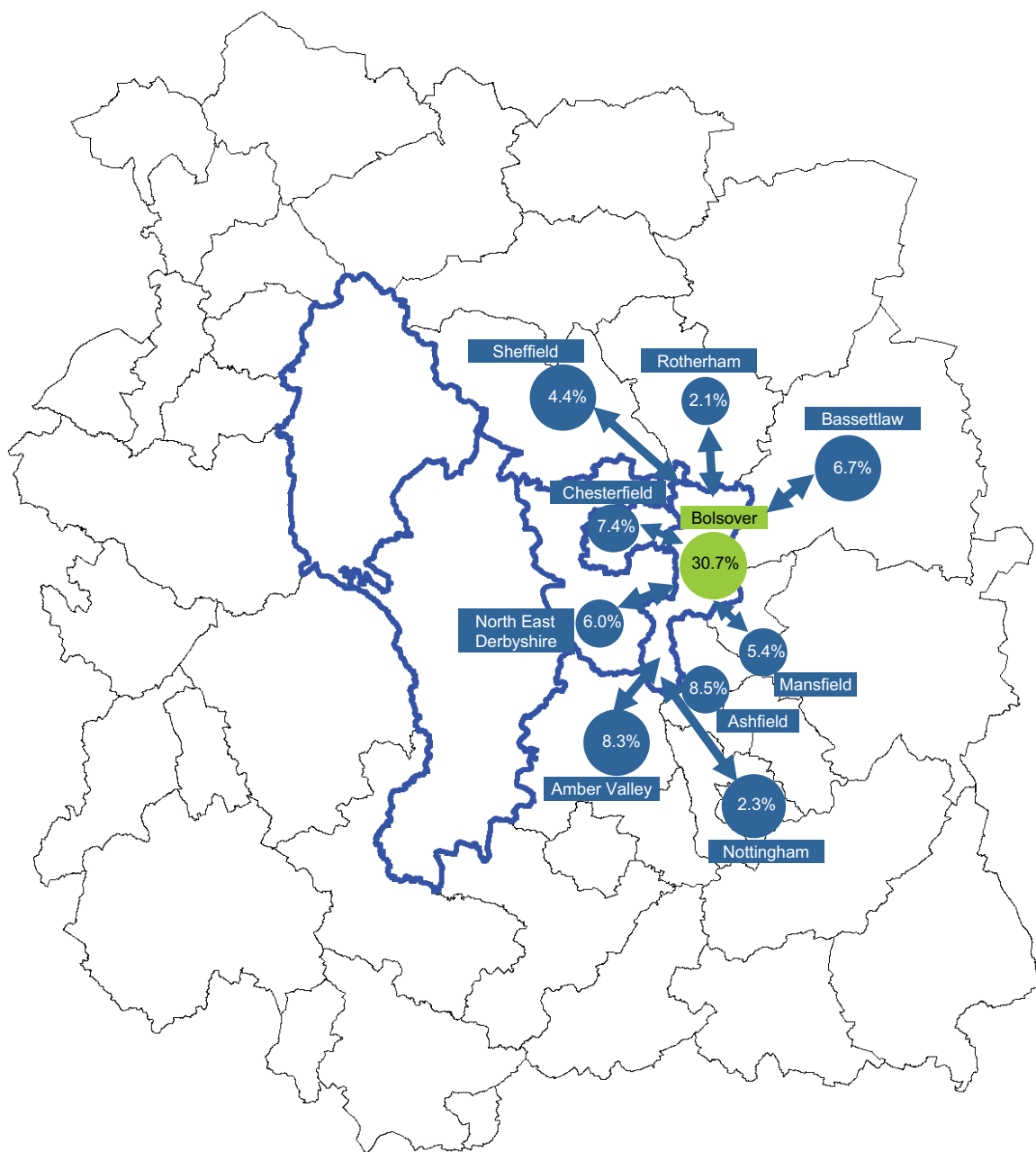




Percentage Shown	75.7
Percentage to other areas	24.3
Total	100%

Figure 11: Car Driver Trips Chesterfield





Percentage Shown	81.8
Percentage to other areas	18.2
Total	100%

Figure 12: Car Driver Trips Bolsover



6 Impact on the Local Highway Network of the LDF Developments

6.1 Overview

6.1.1 Notwithstanding any measures to promote sustainable travel to and from the development, the quantum of development proposed by the LDFs would generate additional trips on the local highway network. This Section identifies where these trips are likely to route and where there could be potential impact of this additional movement. Quantification of these impacts will take place at Stage 2 of the study.

6.2 General Methodology

6.2.1 In order to assess the likely impacts of the proposed LDF developments, three aspects require identification;

- How many trips are likely to be generated by a development?
- Where are those making journeys likely to want to travel?
- What mode of transport those travelling are likely to use?

Trip Generation

6.2.2 Trip generation is normally estimated using a tool such as the *Trip Rate Information Computer System* (TRICS). TRICS is a database of travel surveys that have been measured for various land-use types and locations across the UK. It is a common method for estimating the number of trips that could be generated by a development within a Transport Assessment. For this analysis, the only limit placed on data extraction was that no data was used originating in Greater London or Greater Manchester given that these large cities have known localised peaks that others do not.

6.2.3 However, trip generation can only be determined once development sizes are known. As such, this would be an important component of the Stage 2 work.

Trip Distribution

- 6.2.4 Once trip numbers are known, they can be distributed onto the local highway network (i.e. the journey start and end points determined). The figures given in Section 5 describe the current travel patterns from the north of Derbyshire as was recorded during the 2001 census at a District level.
- 6.2.5 In terms of the pattern of trips that could be expected from future development, despite its age, this data is likely to be representative for those larger settlements (such as Chesterfield) where there is an established, large population. However, for existing, smaller population centres this data may not fully represent the pattern of travel with major development principally due to sample size and location with the District boundary. As such, development-related travel patterns have been determined on a District basis only in this section; and this would be refined during Stage 2 through the application of a Gravity Model.
- 6.2.6 As such, within this section, trip impacts have only been assessed in terms of all-or-nothing assignments based on manual inspection and with no consideration to trip totals. It is based on the assumption that development impact would dissipate as distance from the development increases (in line with branching route tree choice). Furthermore, this section does not consider cumulative impacts.
- 6.2.7 It is proposed to refine this analysis as part of Stage 2 assessment. As such, it provides a view on the key impact issues that could be associated with the development.

Access

- 6.2.8 It is assumed each development would need to find a suitable access onto the local highway network. For this, details on development plots would be needed. This information is not currently available and, as such, this analysis is limited in this regard.

6.3 Impact Locations

- 6.3.1 Tables 6.1 – 6.3 indicates the broad locations of impacts that could result from the proposed development; with reference to the “hotspots” identified in Section 5. Within this, the loading points have been assumed from the Issues and Options consultations leaflets, and development size has not been taken into account.
- 6.3.2 Potential impacts on “hot-spots” are shown in red. These have been determined manually using the information obtained for the Stage 1 study to date. It is proposed to refine this work using a spreadsheet model within Stage 2 of this work.

Chesterfield

Location	Draws	Routeing & Impacts	Comments
Staveley	Draws to M1	Junction 30 (northbound) and 29A (southbound)	
	Draw to Chesterfield and west (including Sheffield)	A619 junctions (Brimington gyratory and A61 'Tesco' & 'Donkins' roundabouts)	Potential A619 issues addressed by Staveley – Brimington Regeneration route
Brimington (South)	Draws to M1	Potential draw through Calow to Junction 29A for both North and South movement	
	Draw to Chesterfield and west (including Sheffield)	A61 'Tesco' & 'Donkins' roundabouts	
Brimington (North)	Draws to M1	Junction 30 (northbound) and 29A (southbound)	
	Draw to Chesterfield and west (including Sheffield)	A619 junctions (Brimington gyratory and 'Tesco' roundabout)	Potential A619 issues addressed by Staveley – Brimington Regeneration route
Dunston	Draws to M1	Junction 30 (northbound) and 29 (southbound)	
	Draw to Chesterfield (and South)	<i>A61 but several routes available into Chesterfield mitigating impact</i>	
	Draws to Sheffield	A61 (direct)	May impact on adjacent authority highway network.
	Draws to West	<i>Several routes available therein mitigating impact, though B6050 is a minor road</i>	Minor routes would need reviewing in terms of geometric constraints
Duckmanton	Draws to M1	Junction 29A	
	Draw to Chesterfield and west (including Sheffield)	A632 (Donkins Roundabout & Markham Road roundabout)	
	Draws to Sheffield	M1 Junction 29A	
Mastin Moor	Draws to M1	Junction 30 (northbound) and 29A (southbound)	
	Draw to Chesterfield and west (including Sheffield)	A619 junctions (Brimington gyratory and A61 'Tesco' & 'Donkins' roundabouts)	Potential A619 issues addressed by Staveley – Brimington Regeneration route

Table 6.1: Chesterfield LDF Development Impacts

6.3.3 From the above table, it can be seen that all developments would route through problem areas on the existing highway network. However, development at Dunston would be able to draw on several routes into Chesterfield such that traffic would not concentrate on particular corridors,

and development at Duckmanton would load onto Junction 29A (if good access to the existing local strategic network could be achieved). It is also noted that Dunston could take advantage of an existing grade-separated junction onto the A61.

- 6.3.4 The Brimington, Staveley, and Dunston schemes could load more traffic onto the congested A61 'Tesco' roundabout; however, the Brimington and Staveley schemes could mitigate their impact onto the A619 if brought forward with the Brimington – Staveley Regeneration Route. The AAP could identify these issues in more detail which would also need to consider how access is achieved for these sites. Furthermore, developments at Brimington (North) and Staveley could split their strategic trips across two motorway junctions rather than loading onto only one.
- 6.3.5 In the above, it is noted that as distance of development away from the Chesterfield urban centre increases, it is likely to be more difficult to serve by regular (and therein attractive) public transport.

North East Derbyshire

Location	Draws	Routeing & Impacts	Comments
Dronfield	Draws to M1	North through Sheffield, South on A61 to Junction 29 or 30 via A61 junctions	May impact on adjacent authority highway network.
	Draw to Chesterfield (and South)	South on A61 (Whittington Roundabout, 'Tesco' roundabout and Donkins roundabout)	
	Draws to West	<i>Several routes available therein mitigating impact</i>	
	Draws to Sheffield	A61 (Direct)	May impact on adjacent authority highway network.
Eckington	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield (and South)	Several routes available, but all minor roads	Minor routes would need reviewing in terms of geometric constraints – less important due to proximity of Sheffield
	Draws to West	Several routes available, but all minor roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to Sheffield	Direct via A6135	May impact on adjacent authority highway network.
Killamarsh	Draws to M1	Junction 31 (north) and Junction 30 (south)	Routes to Junction 30 are minor roads and would require geometric review to ensure suitability
	Draw to Chesterfield (and South)	Several routes available, but all minor roads	Minor routes would need reviewing in terms of geometric constraints – less important due to proximity of Sheffield
	Draws to West	Use of several sub-urban routes available	May impact on adjacent authority highway network.
	Draws to Sheffield	Direct via suburban routes	May impact on adjacent authority highway network.

Clay Cross (incl Biwater site)	Draws to M1	Direct via A6175 to Junction 29 or Junction 28 (via A61 if travelling south)	
	Draw to Chesterfield (and north)	A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout)	
	Draws to West	Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	A61	Uncongested until Alfreton
Wingerworth (incl Avenue site)	Draws to M1	Minor roads to A6175 to Junction 29, or via A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout)	Minor routes would need reviewing in terms of geometric constraints
	Draw to Chesterfield (and north)	A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout)	
	Draws to West	Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	A61	Congested in Clay Cross (but new scheme may relieve this)
Tupton	Draws to M1	Minor roads to A6175 to Junction 29, or via A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout)	Minor routes would need reviewing in terms of geometric constraints
	Draw to Chesterfield (and north)	A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout)	
	Draws to West	Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	A61	Congested in Clay Cross (but new scheme may relieve this)

North Wingfield	Draws to M1	Direct via A6175 to Junction 29 or Junction 28 (via A61 if travelling south)	
	Draw to Chesterfield (and north)	Via A6175 and A61 (Storforth Lane, St. Augustine's Road and Donkins roundabout); or via minor B6038	Minor routes would need reviewing in terms of geometric constraints. A61 congested in Clay Cross
	Draws to West	Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	A61	Congested in Clay Cross (but new scheme may relieve this)
Grassmoor	Draws to M1	Via A6175 to Junction 29	Minor routes would need reviewing in terms of geometric constraints
	Draw to Chesterfield (and north)	Minor Roads or linking to A617	Minor routes would need reviewing in terms of geometric constraints
	Draws to West	Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	Via A6175 to A61	Minor routes would need reviewing in terms of geometric constraints
Holmewood	Draws to M1	Direct via A6175 to Junction 29 or Junction 28 (via A61 if travelling south)	
	Draw to Chesterfield (and north)	Via A6175 to Junction 29 and A617; or via A61	
	Draws to West	A617 or Minor Roads	Minor routes would need reviewing in terms of geometric constraints
	Draws to South	Via A6175 to A61, or via minor roads via Pilsley	Congested in Clay Cross (but new scheme may relieve this) Minor routes would need reviewing in terms of geometric constraints
Pilsley	All Routes	Minor Roads to Junction 28 and 29	Minor routes would need reviewing in terms of geometric constraints

Calow / Long Duckmanton	Draws to M1	Junction 29A or 29 via B6425 & A617	
	Draw to Chesterfield (and north)	Direct via A632 (Markham Road roundabout & Donkins Roundabout)	
	Draws to West	A619 and A632 (Markham Road roundabout & Donkins Roundabout)	
	Draws to South	A61 ((Markham Road roundabout, Donkins Roundabout, St. Augustines Road and Storforth Lane)	
Shirland	Draws to M1	A61 – A38 – Junction 28	A61 congested in Alfreton and A38 is congested in peak times
	Draw to Chesterfield (and north)	A61 (Clay Cross, Storforth Lane, St. Augustine's Road)	
	Draws to West	Via A615 (to Matlock and A6)	
	Draws to South	Via A61	A61 congested in Alfreton
Morton / Stonebroom	Draws to M1	A61 – A38 – Junction 28 or Minor Roads to J29	A61 congested in Alfreton and A38 is congested in peak times
	Draw to Chesterfield (and north)	A61 (Clay Cross, Storforth Lane, St. Augustine's Road)	
	Draws to West	Via A615 (to Matlock and A6)	
	Draws to South	Via A61	A61 congested in Alfreton

Table 6.2: North East Derbyshire LDF Development Impacts

6.3.6 From the above table, it can be seen that most of the development locations could exacerbate local congestion. In these cases, where appropriate consideration has been given to locating developments close to existing service, facilities and employment; appropriate strategies could be to;

- Focus on sites where access is good (to minimise the increase in accidents, and ensure good PT linkages),
- site development on public transport corridors,
- site development where traffic would have routing options to and from the site such that weight of traffic from any one development site does not fall on any one single part of the network,

- 6.3.7 Development at Clay Cross, Wingerworth and Dronfield would meet the above criteria. It is also known that M1 Junctions 28 and 29 are particularly congested and, as such, large-scale development away from these junctions may be preferred.

Bolsover

Location	Draws	Routeing & Impacts	Comments
Bolsover	Draws to M1	Direct to Junction 29A	
	Draw to Chesterfield	(Direct via A632 (Markham Road roundabout & Donkins Roundabout))	
Clowne	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield	Direct via A619 (A616 / A619 roundabout)	
	Others	Via A619 to A60 for other local centres of Worksop and Mansfield	
Shirebrook	Draws to M1	Minor roads to Junction 29 and 29A	Minor routes would need reviewing in terms of geometric constraints
	Draw to Chesterfield	Minor roads to Junction 29 and A617 or A632	Minor routes would need reviewing in terms of geometric constraints
	Draw to Mansfield	Minor Roads to A60 or A617	Minor routes would need reviewing in terms of geometric constraints
	Draw to Worskosp	Minor Roads to A60	Minor routes would need reviewing in terms of geometric constraints
South Normanton	Draws to M1	Junction 28	
	Draw to Local Centres	A38 and A61 to Chesterfield, or A38 to Mansfield	
Barlborough	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield	Direct via A619 (A616 / A619 roundabout)	
	Others	Via A619 to A60 for other local centres of Worksop and Mansfield	

Creswell	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield	Direct via A619 (A616 / A619 roundabout)	
	Others	Via A619 to A60 for other local centres of Worksop and Mansfield	
Pinxton	Draws to M1	Junction 28	
	Draw to Local Centres	A38 and A61 to Chesterfield, or A38 to Mansfield	
Tibshelf	Draws to M1	Minor Roads to Junction 28 and 29	Minor routes would need reviewing in terms of geometric constraints
	Draw to Local Centres	Minor Roads to A61 (for Chesterfield) or Sutton	Minor routes would need reviewing in terms of geometric constraints
Whitwell	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield	Direct via A619 (A616 / A619 roundabout)	
	Others	Via A619 to A60 for other local centres of Worksop and Mansfield	

Doe Lea / Bramley Vale	Draws to M1	Junction 29	
	Draw to Local Centres	A617 to Chesterfield (Donkins Roundabout) or Mansfield	
Glapwell	Draws to M1	Junction 29	
	Draw to Local Centres	A617 to Chesterfield (Donkins Roundabout) or Mansfield	
Hodthorpe	Draws to M1	Direct to Junction 30	
	Draw to Chesterfield	Direct via A619 (A616 / A619 roundabout)	
	Others	Via A619 to A60 for other local centres of Worksop and Mansfield	
Langwith/Whaley Thorns	Draws to M1	Direct to Junction 29A	
	Draw to Chesterfield	(Direct via A632 (Markham Road roundabout & Donkins Roundabout)	
New Houghton	Draws to M1	Junction 29	
	Draw to Local Centres	A617 to Chesterfield (Donkins Roundabout) or Mansfield	
Shuttlewood	Draw to M1	Minor roads to Junction 30, 29 and 29A	Minor routes would need reviewing in terms of geometric constraints
	Draw to Chesterfield	Minor roads to A632 or A619	Minor routes would need reviewing in terms of geometric constraints

Table 6.3: Bolsover LDF Development Impacts

6.3.8 As with North-East Derbyshire, from the above table, it can be seen that most of the development locations could exacerbate local congestion. In these cases, where appropriate

consideration has been given to locating developments close to existing service, facilities and employment; appropriate strategies could be to;

- Focus on sites where access is good (to minimise the increase in accidents, and ensure good PT linkages),
- site development on public transport corridors,
- site development where traffic would have routing options to and from the site such that weight of traffic from any one development site does not fall on any one single part of the network,

6.3.9 In addition to the above, Bolsover not only faces Chesterfield (as does Chesterfield and NE Derbyshire) but also Mansfield, Worksop and Sutton / Ashfield. As such, the draws from these other local centres could reduce impact on the highway network via traffic dispersal. However, this feature needs to be balanced against the difficulty that such multi-destination potential gives rise to in terms of public transport servicing.

6.3.10 It is also known that M1 Junctions 28 and 29 are particularly congested and, as such, large-scale development away from these junctions may be preferred. Residential housing here may have synergy with, and support, the employment development to be sited here.

6.3.11 Development at Bolsover, Longwith / Whaley Thorns, Clowne, Creswell and Barlborough would meet the above criteria.

7 Facilitation and Funding

7.1 Context

- 7.1.1 The delivery of the developments associated with the LDF in the study area may lead to some adverse impacts on the highway network. The Stage 2 work would seek to identify where such impacts could occur and refine the advice provided in the preceding Section.
- 7.1.2 The purpose of this section is to set out the broad requirements for the facilitation of development and how these could be funded.

7.2 Facilitation Hierarchy

- 7.2.1 In order to facilitate the LDF developments, a range of highway mitigation measures are likely to be required. According to the GTA, the preferred order of intervention is firstly to capture trips by sustainable modes, then to manage the existing highway network and only then to provide additional transport infrastructure. Although the provision of new road space is a last resort, it may be needed for certain developments in particular locations.
- 7.2.2 A hierarchy of intervention should be as follows;

- Siting and Development Style
 - Potential to create an appropriate access onto the local highway network,
 - Mixed-use development, or development near to existing services and facilities,
 - Development layout that encourages sustainable modes,
 - Provision of sustainable transport infrastructure within a development,
- Management of Trips
 - Travel Plan (with provision for measures and monitoring),
- Single Occupancy Trip Reduction Measures
 - Car sharing,
 - Public transport contributions,
- Highway Improvements.

7.3 Funding

- 7.3.1 Given that any worsening of highway performance could be directly attributed to development schemes, the main mechanism through which funding would be secured would be via the **Section 106** process. In the event that there are multiple developers, a S106 Strategy may be required linked to an appropriate mitigation plan.
- 7.3.2 Alternatively, and in addition, it is proposed to introduce a **Community Infrastructure Levy** (CIL), to new development which will be a new charge which planning authorities will be able to set for most types of new development in their area.
- 7.3.3 The CIL may only be used to fund the infrastructure needs of development contemplated by the development plan for an area, not to remedy existing deficiencies. As such, it is a change to the mechanism of funding development-related mitigation rather than the principle that developments should fund those measures that facilitate their development.
- 7.3.4 The definition of infrastructure for CIL purposes is wide enough to enable local authorities to decide what infrastructure is appropriate for their local areas, including transport. However, a key benefit of CIL is expected to be that it would more easily fund sub-regional infrastructure – that is, larger pieces of infrastructure typically benefiting more than one local authority area. This is because local authorities would have the freedom to work together to pool contributions from CIL within the context of delivering the RSS and local development plans, and therefore be of interest to the area of North Derbyshire.
- 7.3.5 CIL charges are expected to be based on simple formulae which relate the size of the charge to the size and character of the development paying it; for instance, a sum per housing dwelling etc. As such, the CIL may have administrative benefits for both local authorities and developers. However, without first-hand experience of its operation the practical detail of its implementation is not well understood.
- 7.3.6 Transport improvements that are not normally directly related to development are normally paid for through the Local Transport Plan process. Smaller schemes can be funded from authorities own pots, though larger scheme funding has been organised through the system of Regional Funding Allocations and Advice (RFA).
- 7.3.7 In terms of Derbyshire's own LTP priorities, it is unlikely that LTP money would be used to fund mitigation schemes for developments where there is no overlap with existing priorities. In terms of the major scheme funding process, each English region receives a nominal budget and is invited to advise Government on the projects, which it would like to see, brought forward. These include local authority schemes and those on most of the Trunk Road network (motorways and some nationally important Trunk Roads receiving separate funding).
- 7.3.8 The East Midlands produced updated advice to Government in February 2009 on its priorities for years up to 2014-15, with an indication of how it would expect to allocate resources up to 2018-19. Under this advice, a sum of £118 million is unallocated, the intention being that this would be assigned to the Region's eleven Housing Market Areas (HMA's) to support their own priorities. The mechanism by which the sum available to each HMA would be calculated is not yet established, but clearly, in each case, it will be quite limited; without any weighting to reflect population, regeneration, or transport needs each HMA would have just over £10 million at its

disposal. It is, though, likely that some weighting will be introduced, meaning that some HMA's will be working with budgets below the level required to put in place any major projects without additional sources of capital. Any weighting mechanism, together with any changes to the current programme, will need to be authorised by the regional Leaders Board.

- 7.3.9 It is feasible that under-spends, changed priorities or schemes not receiving necessary consents could affect the sum available through the RFA process. This is also subject to further revision as part of the current re-shaping of transport policy at national and regional level under 'Delivering a Sustainable Transport System' (DaSTS). However, there is no reason to anticipate any radical departures from the commitments contained within the Region's current advice. In the period up to and including 2018-19, therefore, there will be very limited scope for any major infrastructure projects other than those already committed.

8 Summary and Conclusions

- 8.1.1 The preceding sections have identified the inherent sustainability of each location and their potential for improvement. Also, broad identification of network issues have been identified.
- 8.1.2 Stage 2 of this work is intended to identify in more detail the potential highway impacts of such development. However, it should be stressed that the preferred locations for development in the first instance should be those locations in which a transport-sustainable development could be achieved.
- 8.1.3 Section 4 ranked the locations in terms of their sustainability.
- 8.1.4 In highway terms, key issues relate to the loading of traffic onto the A61 and A619 corridors, as well as the congestion issues surrounding Junctions 28 and 29.
- 8.1.5 Notwithstanding the work proposed under Stage 2, all developments proposed under the Core Strategies would route through congested areas on the existing highway network to a greater or lesser extent. In this case, where appropriate consideration has been given to locating developments close to existing service, facilities and employment; appropriate strategies could be to;
- Focus on sites where access is good (to minimise the increase in accidents, and ensure good PT linkages),
 - site development on public transport corridors,
 - site development where traffic would have routing options to and from the site such that weight of traffic from any one development site does not fall on any one single part of the network,
- 8.1.6 In the above, it is noted that as distance of development away from the Chesterfield urban centre increases, it is likely to be more difficult to serve by regular (and therein attractive) public transport.

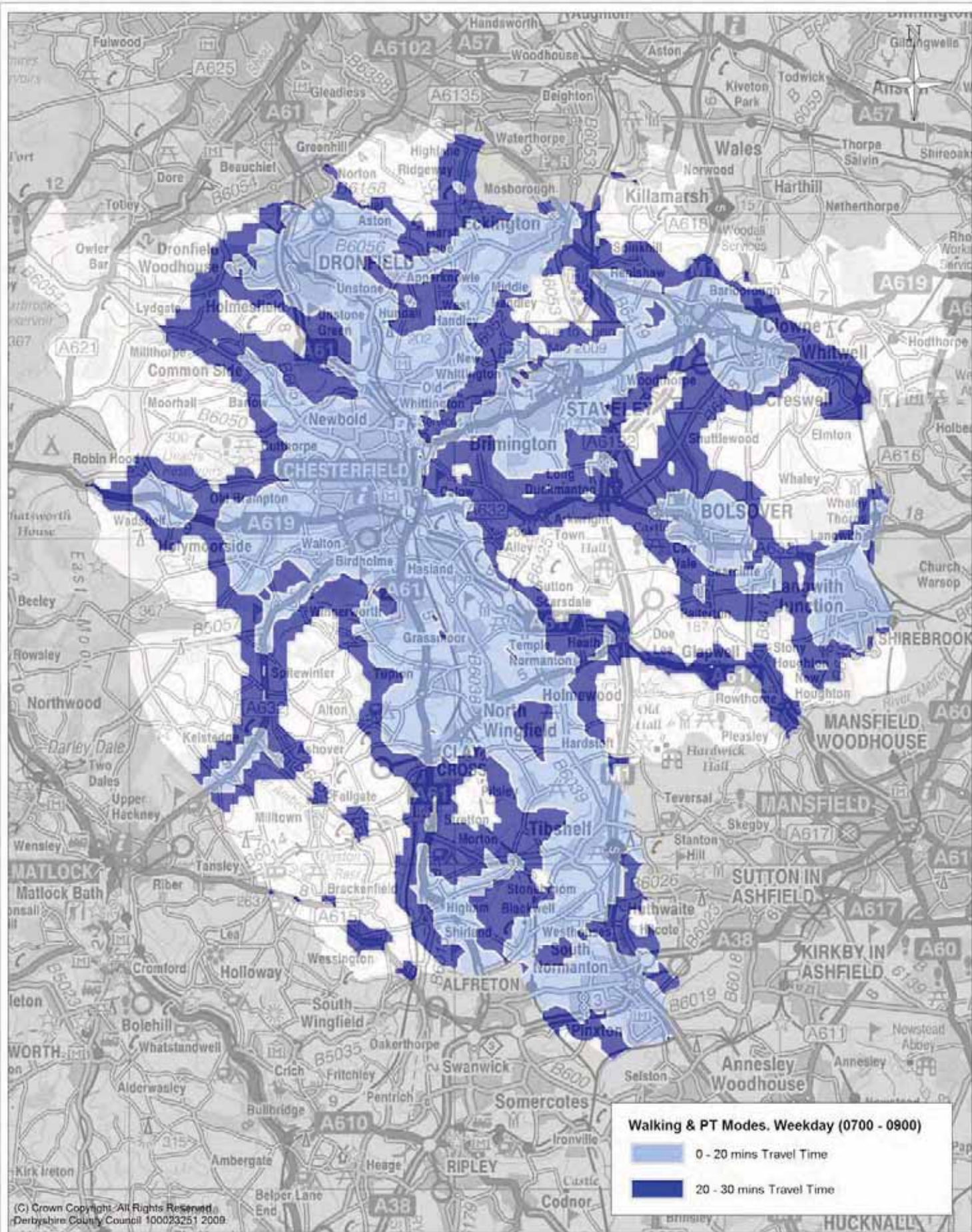
9 Glossary

Annual Average Daily Traffic (AADT)	The two-way volume of traffic that a road carries, stated as the 24-hour daily average over a full year.
Area Action Plans	<p>A development plan document focused upon a specific location or an area subject to conservation or significant change. This could include a major regeneration project or a growth area.</p> <p>An Area Action Plan should focus on implementation- providing an important mechanism for ensuring development of an appropriate scale, mix and quality for key areas of opportunity, change or conservation.</p>
Commission for Integrated Transport	An independent body advising the Government on Integrated Transport Policy
Core Strategy	A Development Plan Document that sets out the vision and strategic objectives for the District.
DCC	Derbyshire County Council
DfT	Department for Transport. The role of the Department for Transport is to determine overall transport strategy and to manage relationships with the Agencies responsible for the delivery of that vision.
Local Development Framework	<p>Provides the framework for the future development of an area and usually contain; a Core Strategy, a Site Specific allocation of land and Area Action Plans (where needed).</p> <p>A proposal map will also be included showing the extent of the policies and provided to accompany all development plan documents.</p>
Local Highway Authority	Body responsible for the local road network in a particular area, in particular with regards network improvements and the control of development that could affect the local highway.
Local Planning Authority	<p>The local authority that is empowered by law to exercise planning functions for a particular area within the U.K.</p> <p>Such authorities operate in accordance with national planning guidelines and produce development plans to guide future development.</p>

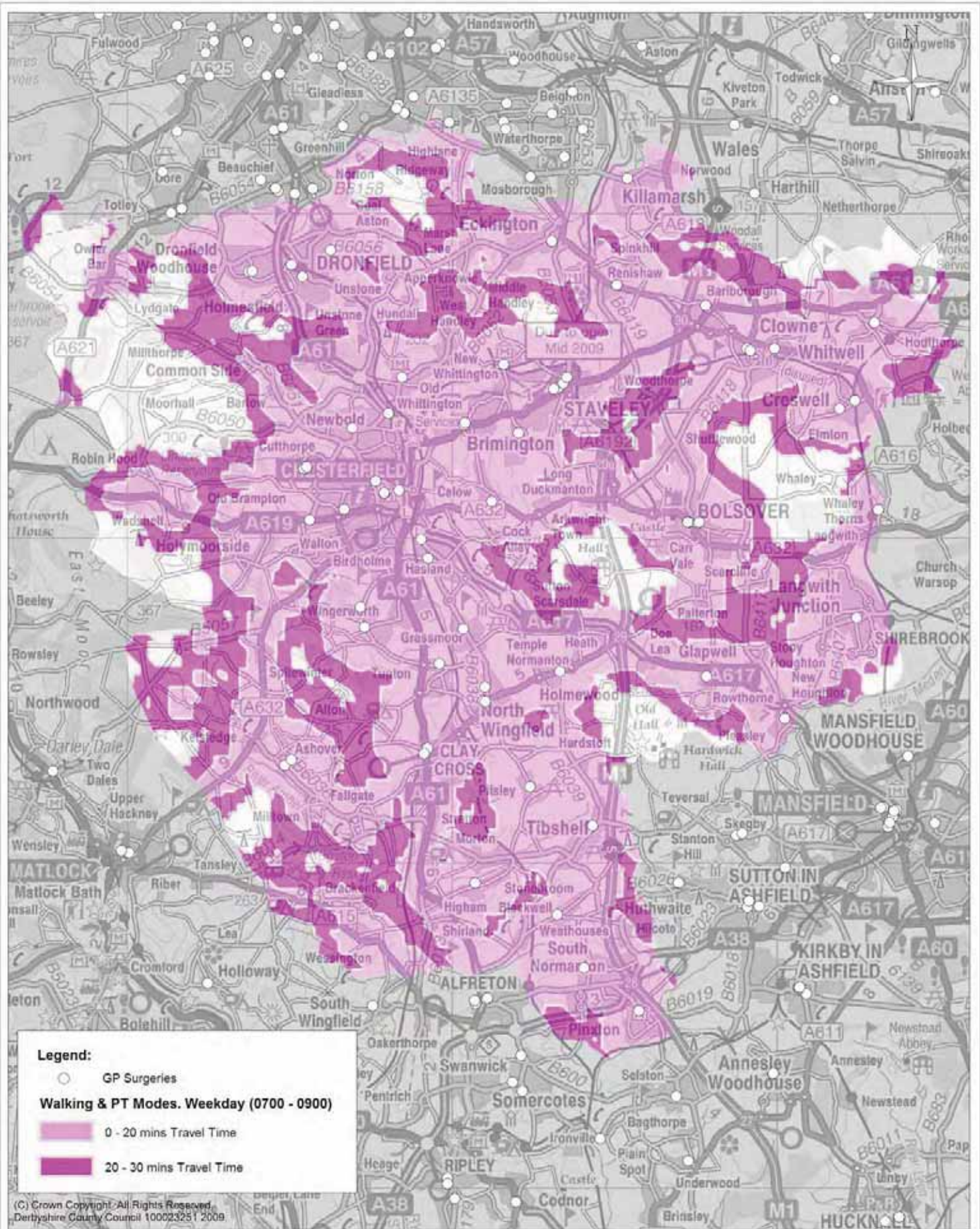
Local Transport Plan (LTP)	<p>The Transport Act 2000 required Local Highway Authorities to produce and maintain a Transport Plan. The LTP sets out transport strategies and policies for a given area and how these will be implemented.</p> <p>The plans cover a five-year period and are used by the DfT to make decisions on capital funding, and for Local Authorities to monitor the delivery of key objectives and targets. The current LTP document covers the period 2006-2011.</p>
Lower Super Output Area (LSOA)	<p>A term used to define an area with a minimum population of 1000 and mean population of 1500. Such areas are built from groups of Output Areas.</p>
Manual for Streets	<p>A joint publication produced by the Department for Transport (DfT) and Communities and Local Government in March 2007. Used for the design, adoption, construction and maintenance of residential streets.</p>
Planning and Compulsory Act (2004)	<p>An Act of Parliament which reforms the town planning and compulsory purchase framework in the UK.</p>
Planning Policy statements (PPS)	<p>A series of documents issued by the Government providing advice on a variety of issues such as transport, housing etc. The statements will gradually replace Planning Policy Guidance Notes (PPGs).</p>
Regional Spatial Strategy (RSS)	<p>A strategy planning how a region should be within a 15-20 year timeframe. It identifies specific priorities for the environment, transport, infrastructure, economic development, minerals and waste treatment and disposal and agriculture.</p>
Regional Transport Strategy	<p>The RTS is intended to guide the investment in transport within a given region. The RTS is developed through working with a variety of organisations including the Highways Agency and the Strategic Rail Authority, to ensure that the regional transport priorities are included within the strategies.</p> <p>The RTS highlights what interventions or investments are required to deliver the region's priorities and longer-term objectives, and gives guidance to Local Authorities in the preparation of Local Transport Plans.</p>
Structure Plan	<p>An old-style development plan, setting out strategic</p>

	<p>planning policies for the County. This is now replaced by the RSS under the new Act but provides the background for detailed policies in Development plan Documents and local plans.</p>
Travel Plan	<p>A package of measures produced by employers to encourage staff to use alternatives to single occupancy car use. Measures can include car park management, car sharing, cycle facilities, and flexible working practices.</p>
Travel Plan Co-ordinator (TPC)	<p>Integral to the Travel Plan process is the employment of a TPC. The role of the TPC is to promote, implement, adjust and monitor the measures, targets and travel surveys described in the Travel Plan to ensure the delivery of sustainable travel mode targets at the site.</p>
Trip Generation	<p>A step in transportation forecasting, which is used to forecast future demand. Trip Generation is considered a function of the social and economic attributes of households and is usually focused on different land uses producing or generating a greater number of trips.</p>
Unitary Development Plan (UDP)	<p>An old-style development plan prepared by a Metropolitan District and some Unitary Local Authorities, containing policies similar to those in a Structure Plan and Local Plan.</p>

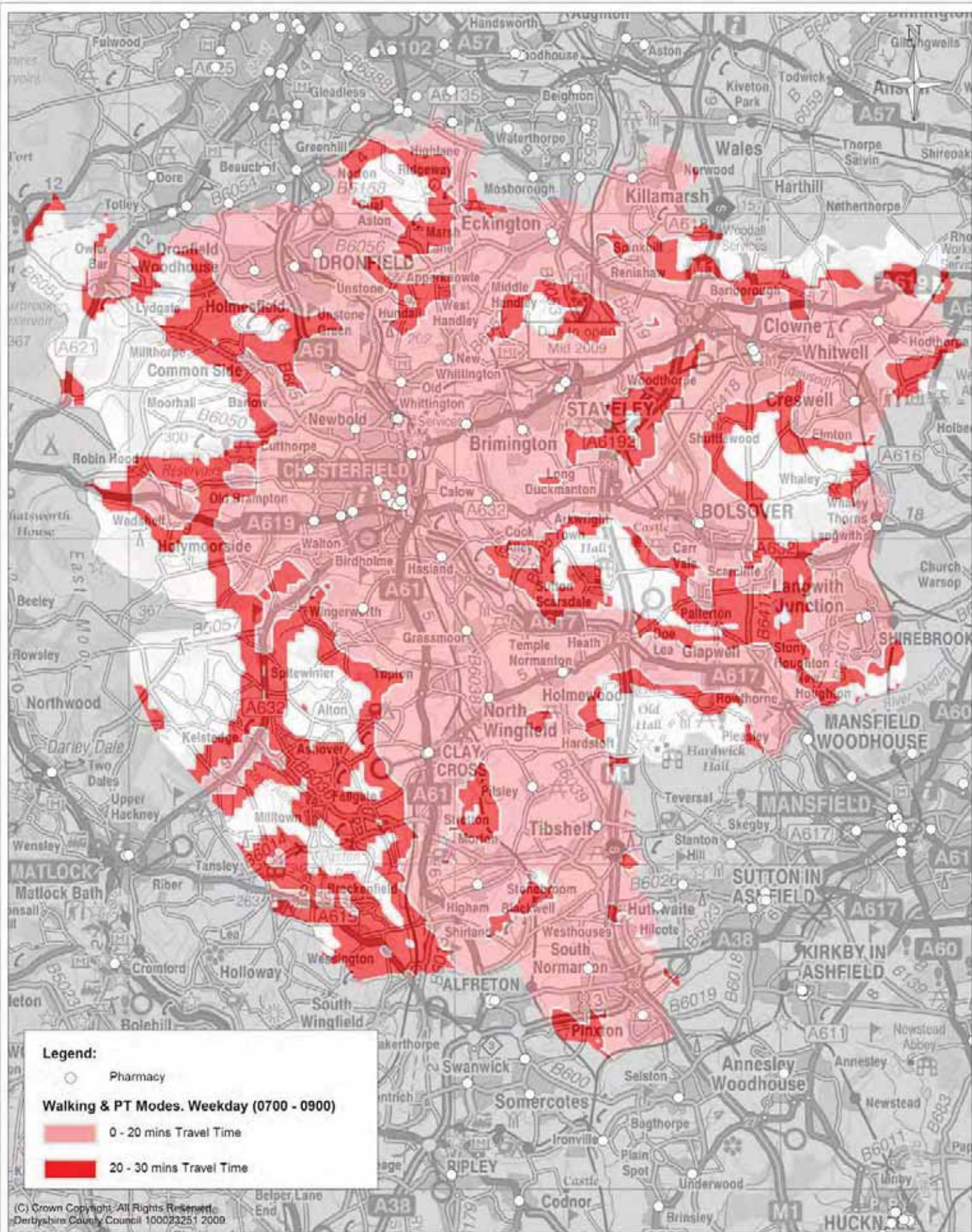
Appendix A
Accession Outputs



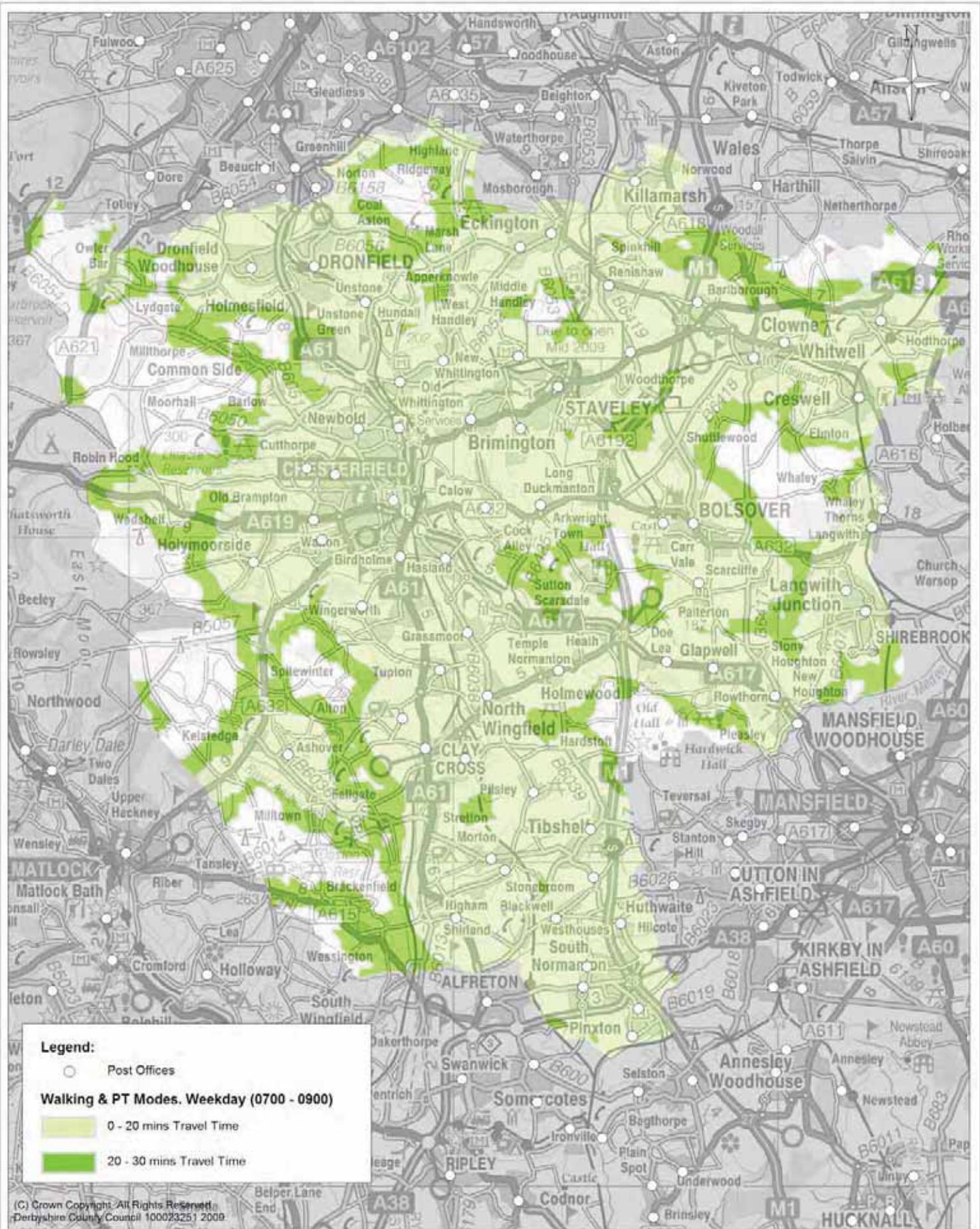
<p>Project Title:</p> <p>Northern HMA Transportation Issues</p>	<p>Drawing Title:</p> <p>Areas Accessible to all Essential Services</p>	<p>Date:</p> <p>Nov 09</p>	<p>Scale:</p> <p>N.T.S.</p>
		<p>Drawing No.</p>	<p>Figure 6</p>



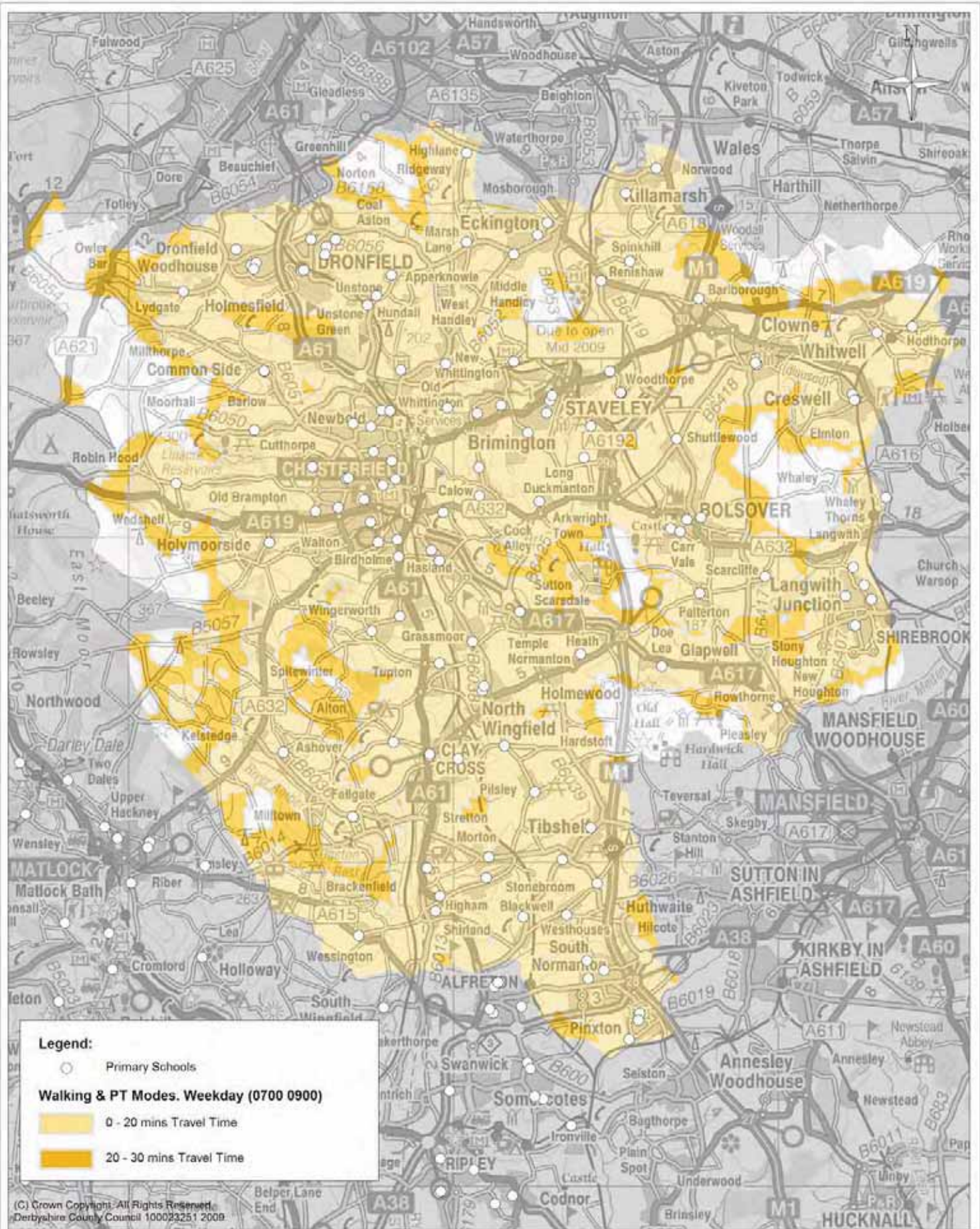
 <p>DERBYSHIRE County Council Improving life for local people</p>	Project Title: <p align="center">Northern HMA Transportation Issues</p>	Drawing Title: <p align="center">GP Surgeries</p>	Date: <p align="center">Nov 09</p>	Scale: <p align="center">N.T.S.</p>
				Drawing No. <p align="center">Figure 7</p>



<p>Project Title:</p> <p>Northern HMA Transportation Issues</p>	<p>Drawing Title:</p> <p>Pharmacy</p>	<p>Date:</p> <p>Nov 09</p>	<p>Scale:</p> <p>N.T.S.</p>
		<p>Drawing No.</p>	<p>Figure 8</p>



<p>Project Title:</p> <p>Northern HMA Transportation Issues</p>	<p>Drawing Title:</p> <p>Post Offices</p>	<p>Date:</p> <p>Nov 09</p>	<p>Scale:</p> <p>N.T.S.</p>
		<p>Drawing No.:</p> <p>Figure 9</p>	



Project Title:

**Northern HMA
Transportation Issues**

Drawing Title:

Primary Schools

Date:

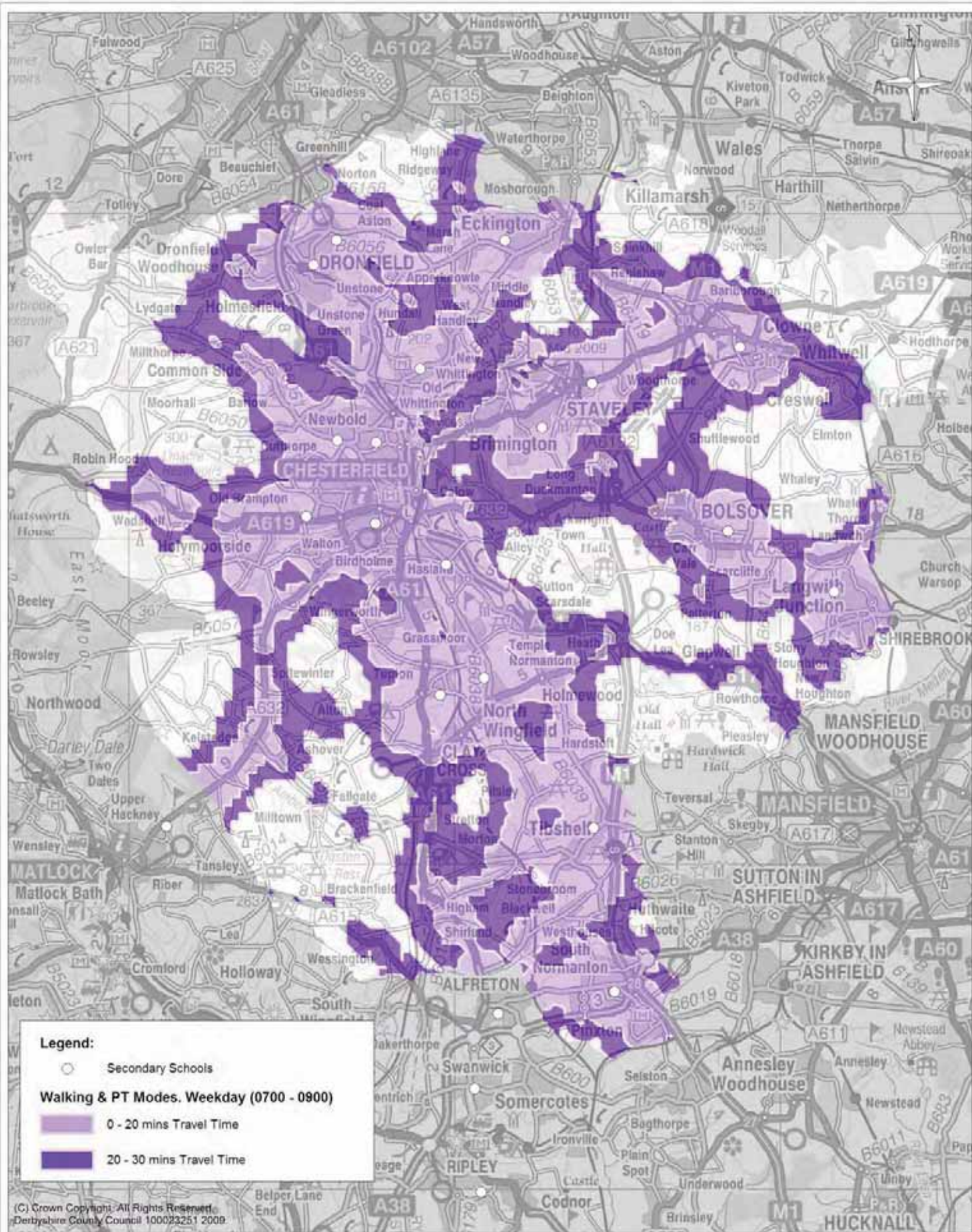
Nov 09

Scale:

N.T.S.

Drawing No.

Figure 10



<p>Project Title:</p> <p>Northern HMA Transportation Issues</p>	<p>Drawing Title:</p> <p>Secondary Schools</p>	<p>Date:</p> <p>Nov 09</p>	<p>Scale:</p> <p>N.T.S.</p>
		<p>Drawing No.</p> <p>Figure 11</p>	

Appendix B

Flow and Delay Mapping



Legend:

Two-Way AADT

	0 to 2000
	2000 to 5000
	5000 to 10000
	10000 to 25000
	25000 to 50000
	50000 to 100000
	> 100000

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Derbyshire County Council 100023251 2009.



Project Title:

**Northern HMA
Transportation Issues**

Drawing Title:

**2008 Two-Way Traffic
Flow (AADT)**

Date:

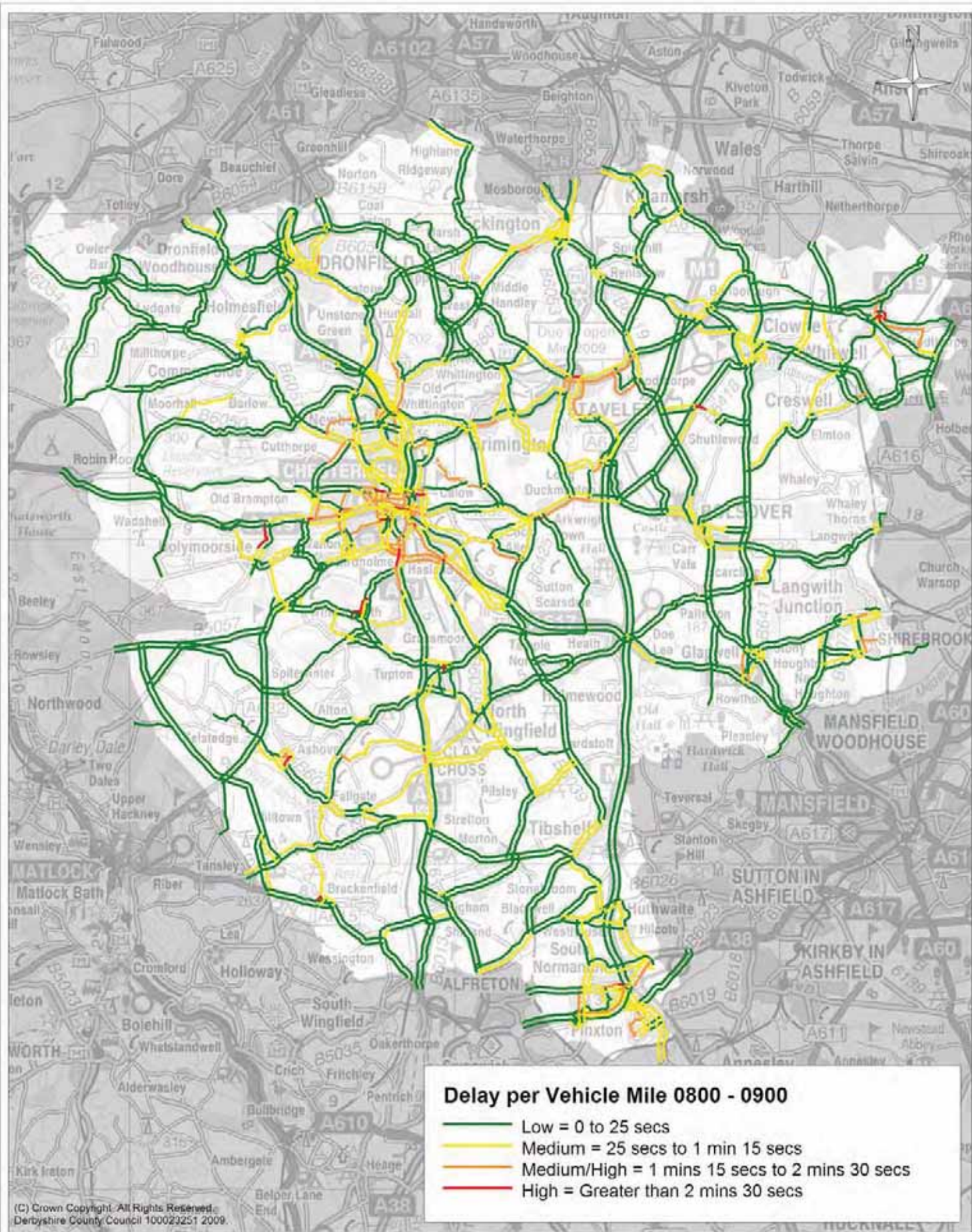
Nov 2009


Scale:

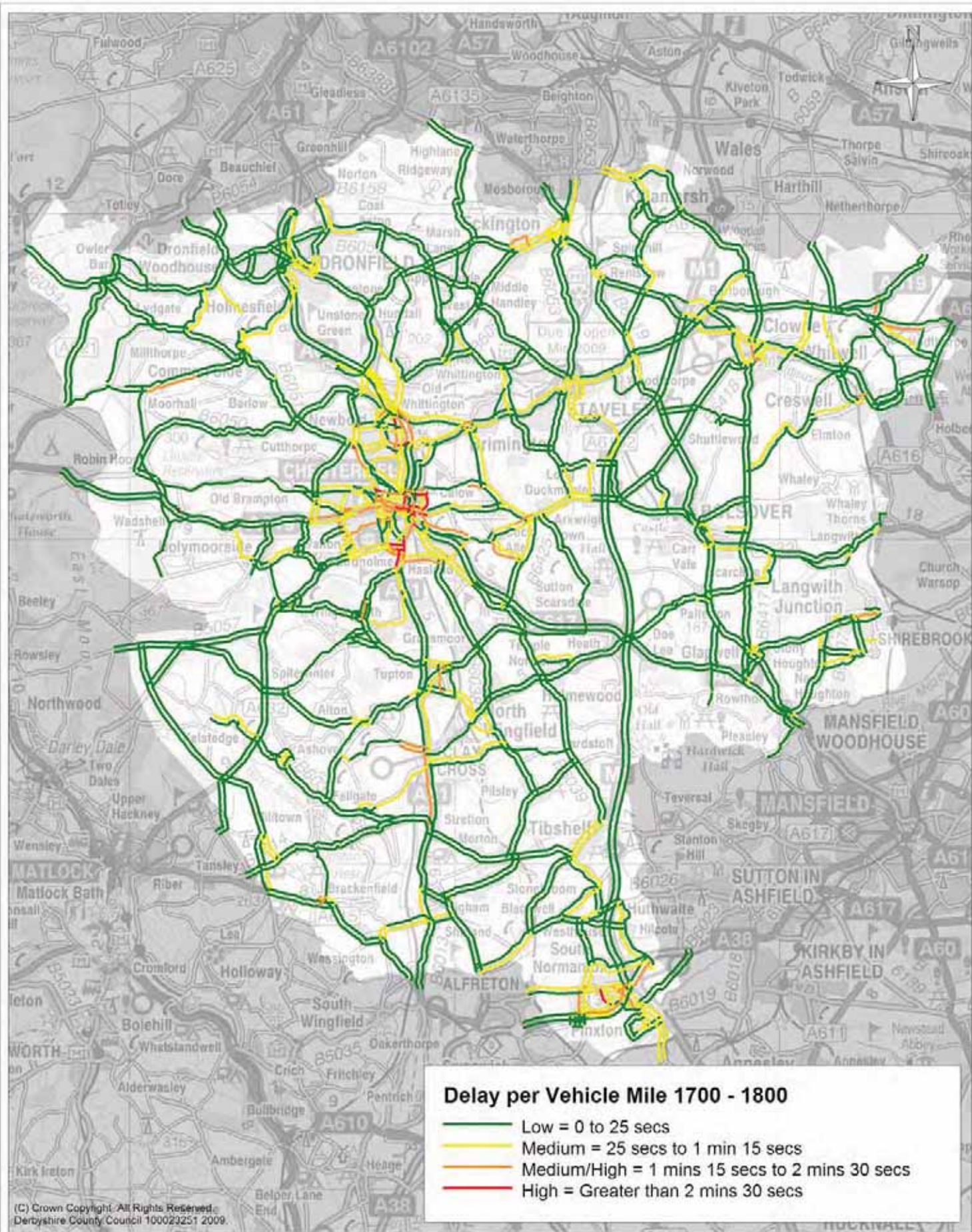
N.T.S.


Drawing No.

Figure 3



 <p>DERBYSHIRE County Council <i>Improving life for local people</i></p>	Project Title: <p align="center">Northern HMA Transportation Issues</p>	Drawing Title: <p align="center">Weekday AM Peak Hour Vehicle Delay</p>	Date: <p align="center">Nov 08</p>	Scale: <p align="center">N.T.S.</p>
				Drawing No.: <p align="center">Figure 4</p>



 <p>DERBYSHIRE County Council <i>Improving life for local people</i></p>	Project Title: <p align="center">Northern HMA Transportation Issues</p>	Drawing Title: <p align="center">Weekday PM Peak Hour Vehicle Delay</p>	Date: <p align="center">Nov 09</p>	Scale: <p align="center">N.T.S.</p>
				Drawing No. <p align="center">Figure 5</p>