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Gainsborough Transport Strategy
Final Report

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Lincolnshire COUNTY COUNCIL

West Lindsey DISTRICT COUNCIL

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Contents

1 Introduction

1.1 Purpose of Report

Jacobs was commissioned in November 2009 by Lincolnshire County Council (LCC) to develop a Transport Strategy for Gainsborough. The development of the Strategy involved a study process, the outcomes of which are recorded in a series of reports as listed below.

- ***Baseline Review***
- ***Policy Objectives***
- ***Problems and Issues***
- ***Traffic Forecasting Assumptions***
- ***Option Appraisal***
- ***Emerging Strategy***
- ***Delivery and Monitoring-Interim***

The purpose of this report is to collate the key findings and evidence from these reports into a single comprehensive final Transport Strategy document. An Emerging Transport Strategy was consulted upon with the public and key stakeholders in June and July 2010. The final Transport Strategy reflects the feedback gained during the consultation. For more detail on any of the chapters in this report, the applicable study report should be consulted.

1.2 Study Background

LCC wish to develop a Transport Strategy for Gainsborough in accordance with the information contained within the Community Infrastructure Fund (CIF) Full Business Case Submission, May 2009. The Transport Strategy is problem and policy-driven, in accordance with New Approach to Appraisal (NATA) and WebTAG. The aim of the study is to understand and quantify transport problems and to develop a Transport Strategy consisting of desirable outcomes and a programme of short-term and long-term interventions. The aims of the Transport Strategy are:

- ***To facilitate the significant growth in housing and employment in the town and its surrounding area***
- ***To provide a framework for the better management of movements into and through Gainsborough***
- ***To address the problems associated with existing and future levels of congestion in Gainsborough***
- ***To address the impacts of existing and future traffic movements in Gainsborough in accordance with the five NATA objectives: Environment, Safety, Economy, Accessibility and Integration; set in the context of Delivering a Sustainable Transport System (DaSTS).***

1.3 Gainsborough Study Area

Gainsborough is located in the West Lindsey District of Lincolnshire County, with a population approaching 18,000 (2001 Census). The town is situated on the eastern bank of the River Trent and has a compact form with almost all of the existing development within 2 km of the town centre. The regional context within which Gainsborough is located is presented in Figure 1-A. The study area comprises the urban area of Gainsborough and its approaches, as shown in Figure 1-B. Although

the study is focused upon the urban area, it also considers the wider factors that influence trip-making external to the study area.

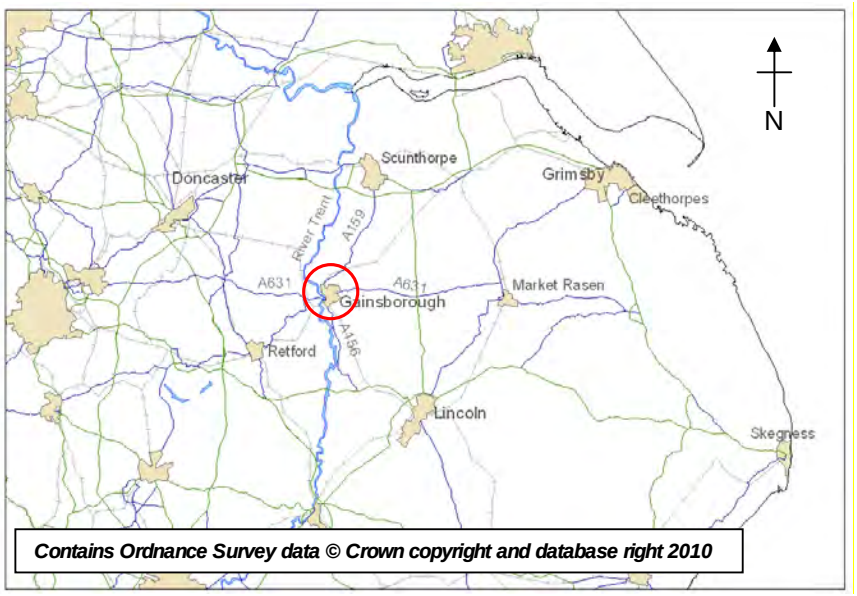


Figure 1-A Regional Context

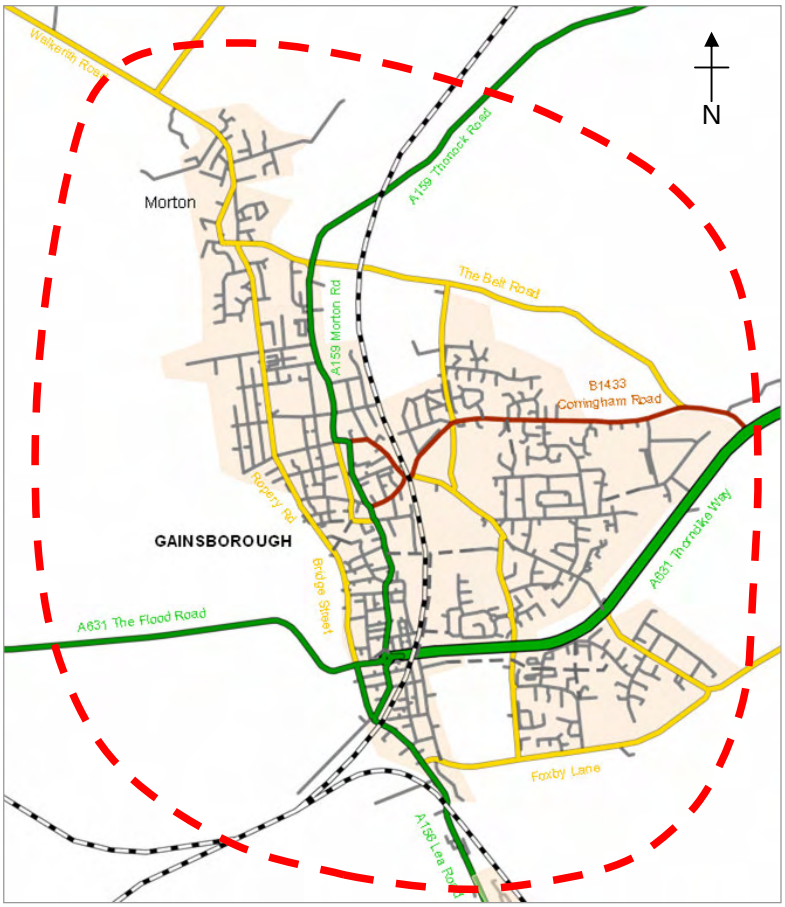


Figure 1-B Detailed Study Area

1.4 Structure of Report

This report is a concise summary of the study documents that have supported and informed the Strategy.

The contents of each section of the report are outlined below:

- ***Section 1 – Overview of the report and study background***
- ***Section 2 – Baseline Review***
- ***Section 3 – Policy Objectives***
- ***Section 4 – Problems and Issues***
- ***Section 5 – Traffic Forecasting***
- ***Section 6 – Option Appraisal***
- ***Section 7 – Emerging Transport Strategy***
- ***Section 8 – Public Consultation***
- ***Section 9 – Final Transport Strategy***
- ***Section 10 – Transport Strategy Modelling Results***
- ***Section 11 – Delivery and Monitoring***
- ***Section 12 – Summary***

2 Baseline Review

2.1 Introduction

This chapter describes the current 'baseline' land use, demographics and transportation conditions within Gainsborough, as of June 2009, using a wide range of observed and desktop data sources, information derived from site visits, and data from the Gainsborough Transport Model. The purpose of the Baseline Review is to provide information relating to the current transport conditions within the town and to establish a baseline position under which transportation problems and options for improvement could be identified.

2.2 Land Use

2.2.1 Residential

The urban area of Gainsborough consists of three wards, Gainsborough North, Gainsborough East, and Gainsborough South-West, within the West Lindsey District of Lincolnshire County. There are a total of 7,742 dwellings within the three wards. The largest proportion of dwellings is terraced housing, which accounts for 42% of the housing stock. Overall, 75% of homes in Gainsborough are terraced or semi-detached.

2.2.2 Industrial and Business

The predominant areas of industrial land use within Gainsborough consist of:

1. Distribution, Hotels and Restaurants,
2. Public Administration, Education and Health
3. Manufacturing

The historic core of the town still contains some industrial land use, but many of these sites are now derelict as traditional manufacturing industry has declined. A number of industrial estates now exist away from the town centre, on the outskirts of the main urban area. These include:

- ***North Warren Road***
- ***Corringham Road Industrial Estate***
- ***Heapham Road Industrial Estate***
- ***Lea Road***

2.2.3 Retail

The main areas of retail land use within Gainsborough are located in the town centre. The town centre retail land use can be divided into four main areas:

- ***Marshall's Yard***
- ***Tesco***
- ***Market Place***
- ***Church Street***

2.2.4 Schools

Gainsborough has a total of 13 schools, ranging from nursery through to secondary schools.

The Trent Valley Academy has been open since September 2009 on a new site off Corringham Road containing two new schools as part of a £33m scheme. It includes a new 11-16 secondary mainstream academy school and a new 11-19 secondary special needs school.

2.3 Demographics

2.3.1 Population

The resident population of Gainsborough as measured in the 2001 Census was 16,859. Data which provides details on the increase in population between 2004 and 2009 give a current population approaching 18,000.

2.3.2 Age Composition

The current age composition in Gainsborough, as shown in Table 2-A below, shows the highest proportion of people are in the 30-59 age band, just below the District and National averages. There is a relatively high percentage of younger population, particularly those under 16, compared with West Lindsey as well as nationally.

Age	Gainsborough	West Lindsey	England and Wales
Under 16	23.0 %	19.7 %	20.2 %
16 to 19	5.3 %	4.7 %	4.9 %
20 to 29	11.4 %	8.5 %	12.6 %
30 to 59	39.7 %	43.0 %	41.5 %
60 to 74	12.8 %	15.8 %	13.3 %
75 and over	7.7 %	8.3 %	7.6 %
Average age	**37.7**	**41.0**	**38.6**

Table 2-A Age Composition (Census, 2001)

2.3.3 Household Composition

Gainsborough has a high percentage of one-person households (30.9%) and a significantly high proportion of housing in Gainsborough is rented (39.4%).

2.3.4 Car Ownership

Within Gainsborough 48% of the population have one or more cars. There is a high proportion of no-car ownership in Gainsborough, at 34% compared with 17% in West Lindsey overall. This is an indication of the deprivation within the town.

2.3.5 Indices of Deprivation

The Gainsborough wards are the most deprived wards in the whole of West Lindsey. The ward which experiences the highest levels of deprivation within the

range of indices is Gainsborough South West. This ward contains areas which are in the highest 20% most deprived in the UK in 6 of the 7 indices of deprivation.

2.4 Transport Provision

2.4.1 Highway

The highway network in Gainsborough is presented below in Figure 2-A. All of the A-roads approaching and within Gainsborough, except Thorndike Way, are single carriageway. Gainsborough is bounded by the River Trent to the west and by the railway line to the east. The strategic east-west routes are constrained by the limited crossing opportunities. There is only one crossing over the river, the single carriageway Trent Bridge.

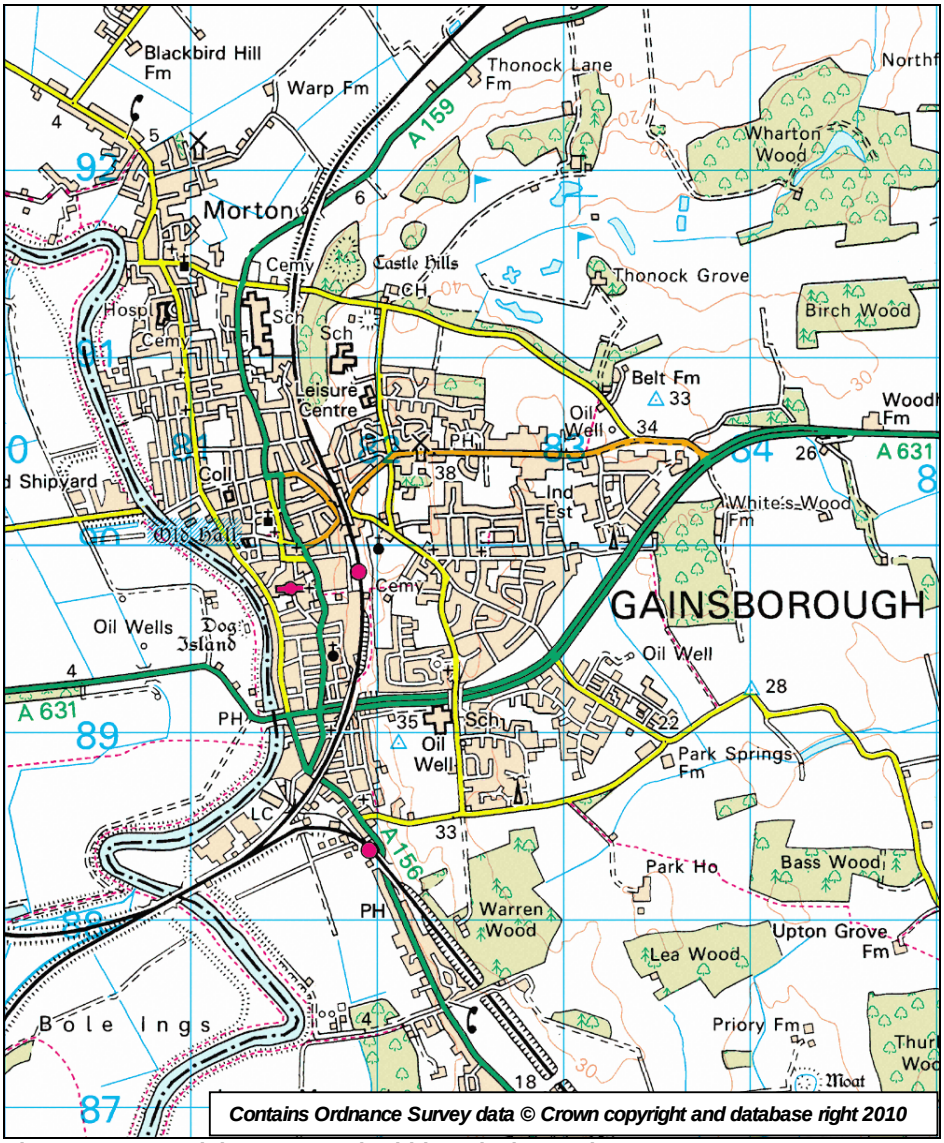


Figure 2-A Highway Network within Gainsborough

2.4.2 Public Transport

Bus

Due to its rural location and size, Gainsborough has a relatively low provision of bus services that provide routes to the surrounding rural areas; however, within the town the service provision is good. The main bus operator is Stagecoach which operates the town 1, 1A and 2 services. Stagecoach also operates an hourly InterConnect 100 Lincoln – Gainsborough – Scunthorpe route as well as lower frequency services to Retford, Scunthorpe, Market Rasen and Belton. The other main bus operator serving Gainsborough is Veolia Transport, operating daily services to Worksop and Bawtry, and an evening service to Retford.

Rail

Gainsborough has two railway stations, Gainsborough Central and Gainsborough Lea Road. Gainsborough Central Station is situated directly behind Marshall's Yard, off Spring Gardens. The railway station is managed by Northern Rail, and is on the Cleethorpes – Sheffield line. The only passenger services are on a Saturday when there are 3 trains in each direction calling at the station.

Gainsborough Lea Road Station is situated on the corner of Summergangs Lane and the A156 Lea Road. The station is on the Lincoln – Sheffield line where there is an hourly service in each direction Monday – Saturday and an every two hour service on Sundays. The station is also on the Doncaster – Lincoln line operated by East Midlands Trains where there are 5 trains per day in each direction Monday – Friday.

2.4.3 Cycling

There are a number of off-road cycle routes, mainly in the residential areas in the south-east of the town and along the River Trent. The National Byway cycling route also passes through Gainsborough along The Flood Road, Bridge Street and Ropery Road. The only other designated cycle route provided within the town centre is the signed route from Lea Road along Sandsfield Lane and Heaton Street to the bus station.

2.4.4 Walking

The majority of roads have footways alongside and pedestrian crossings across the major routes. There are, however, two features which cause some segregation in the town. These are the railway line and the A631 Thorndike Way, which, as a dual carriageway road, has no pedestrian footpaths and no walking is permitted. There are, however, a limited number of subways and bridges allowing travel across these barriers.

2.5 Transport Conditions

2.5.1 Travel Patterns

The Gainsborough Transport Model provides a range of data on travel patterns, traffic volumes, and congestion. The model is able to show the daily pattern of journeys that take place in the town for all types of transport. The information presented below summarise the typical morning peak (08:00-09:00) travel patterns.

Car

Around 70% of all journeys made within Gainsborough during peak travel times are by the private car. The highest volumes of traffic originating from within Gainsborough travel to the town centre. Similarly, there are significant movements into Gainsborough from areas to the south and west. There is also traffic passing through the town along the east-west axis. The impact of this movement is magnified significantly during seasonal peaks in travel associated with tourist traffic heading to the coastal areas of the county. These trips put pressure on the key east-west corridors and junctions within the town, and congestion is reported to materialise on the Flood Road.

Bus

Approximately 12% of peak period journeys are made by bus. The most popular bus travel is associated with schools, particularly to Queen Elizabeth's High School towards the northern end of the town, and also to the town centre. The largest movements are from external areas to the south, west and north of the town.

Walking and Cycling

This mode of travel is more predominant than bus use, with approximately 17% of all peak period journeys made by walking and cycling. The principal journeys by cycle and walk modes include travel from residential areas to the leisure centre and to the town centre.

2.5.2 Traffic Congestion

There is minimal queuing of traffic in the town during peak periods, which is an indication that the road network operates within capacity. The most significant queuing is found on the A631 The Flood Road where the road crosses the River Trent which is due to delays at the junction at Bridge Road. Overall, there are no significant road capacity problems in Gainsborough during typical weekday peak periods.

There are some increases in the volume of east-west traffic during summer months due to tourists heading to and from the coastal areas such as Mablethorpe, Skegness and Cleethorpes, which has an impact upon the A631 The Flood Road.

2.5.3 Public Transport

Bus Patronage

Passenger surveys were carried out onboard buses within the town and at the bus station. There were approximately 660 passengers recorded during the surveys using the bus station for services to other urban areas, the three IntoTown services or the InterConnect 100 service.

The survey results indicated that considerably more people use the bus services to travel within the town than to travel to other urban or rural areas. Although the InterConnect 100 allows travel wholly within the town, over 60% of the journeys recorded on this service were longer distance trips involving origins or destinations outside the town. Over 30% of journeys on this service remained within the town, leaving less than 10% of journeys which passed completely through the town.

Public Transport Accessibility

The majority of areas within town are within 300m of a bus stop, and all residential areas are within 400m of a bus stop. In terms of journey times, it is possible to access the town centre from the majority of the urban area within 15 minutes by bus.

Rail Patronage

Figure 2-B based on recorded survey data shows that the trend for passenger movements by rail is to leave Gainsborough during the morning and return during the evening. A higher proportion of the passengers departing Gainsborough were heading towards Lincoln than Sheffield or Doncaster.

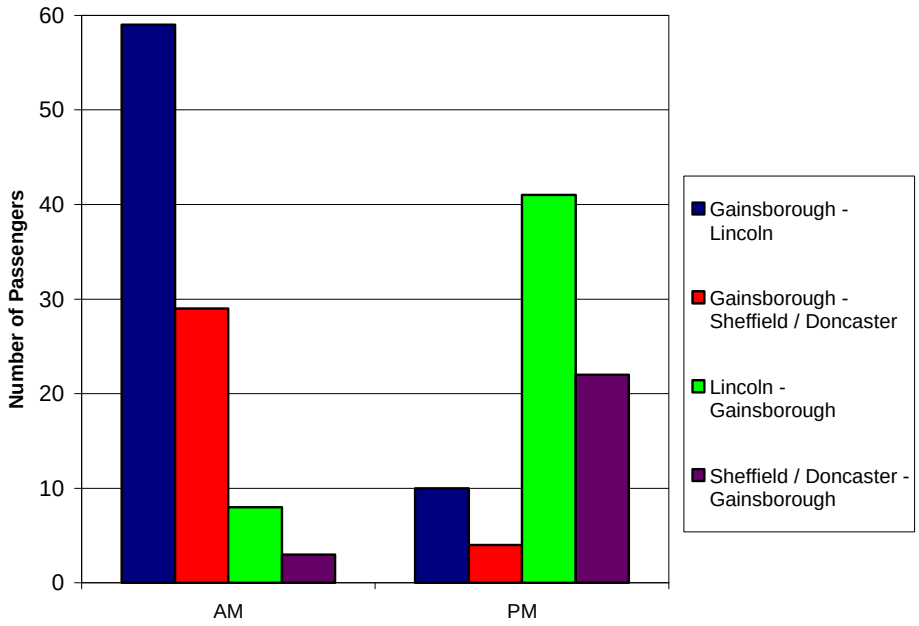


Figure 2-B Peak Time Station Movements

2.5.4 Walking

The town centre is accessible within 15 minutes from the majority of the town, with the exception of some areas of the Park Springs estate, Morton and Lea Road. However, the severance caused by the A631 Thorndike Way is apparent as the travel time increased from south of the road. The Lea Road Station is located to the south of the town centre, with a typical walking time of some 20 to 25 minutes to central Gainsborough.

2.5.5 Cycling

There are few locations where dedicated on-road cycle routes are provided. There were few cyclists observed in Gainsborough and data from the 2009 Pupil Level Annual School Census indicated relatively low levels of cycling as a mode of travel to school.

2.6 Collision Analysis

There is a cluster of collisions at A631 Thorndike Way and B1433 Corringham Road junction, where two of the four fatal collisions occurred in Gainsborough over a 3 year period from June 2006 to September 2009.

Motor vehicles featured in the majority of accidents (70%), whilst motorcycles and pedal cycles together were attributable to 29% of the collisions. A high proportion of collisions occurred, either partly or completely, as a result of drivers or pedestrians failing to look properly. Failing to judge the other person's path or speed also featured as a frequent contributory factor over the period analysed.

3 Policy Objectives

3.1 Introduction

Policy objectives have been established for the Transport Strategy in accordance with local, regional and national policy and guidance. The policies and objectives contained within these documents provide a legislative framework within which the development of local transport improvement schemes can be justified. The reports that were the subject of this review are listed in Appendix A.

3.2 Policy Objectives

The key local, regional and national land use and transport policy documents that were used to inform the policies and objectives of this Transport Strategy included:

The Eddington Transport Study: December 2006

This study highlights how transport is pivotal in supporting the UK's future economic success. The primary conclusions centered on making better use of the existing transport network in preference over entirely new infrastructure investment.

New Approach to Transport Appraisal (NATA): October 2007

The New Approach to Appraisal (NATA) is a framework used to appraise transport projects and proposals in the United Kingdom. Within the NATA framework, the impacts of transport projects are categorised in terms of five high level criteria (economy, safety, environment, accessibility and integration) which reflect the Government's objectives for transport.

Towards a Sustainable Transport System: Supporting Economic Growth in Low Carbon World: 2007

This document describes how the Government is responding to the recommendations made in the Eddington study to improve transport's contribution to economic growth and productivity, and how it is ensuring that transport will play its part in delivering the overall level of reductions in carbon emissions recommended by the Stern Review of the Economics of Climate Change.

Delivering a Sustainable Transport System (DaSTS)

DaSTS explains how the Government are putting into action the plans outlined in TaSTS in a way that both tackles our immediate economic downturn problems and also shapes our transport system to meet the longer-term challenges that are critical for our prosperity and way of life.

3.2.1 Masterplan Objectives

The Policy objectives defined as part of this study are informed by the objectives in the Gainsborough Masterplan and the five key Policy Objectives as defined by NATA. Gainsborough Regained the Masterplan, launched in 2007, sets out a clear signal of intent both locally and regionally, for the growth and regeneration of the town. The Masterplan identified that a number of elements needed developing as soon as possible to ensure that the provision of effective alternatives to the car are underway and that behavioural changes in residents' movements around the town

are embedded before significant growth occurs. The sustainable travel objectives were developed to encourage a shift away from unnecessary car usage for both the Growth Point expansion areas and the existing town, and to integrate the expansion areas within the existing town with pedestrian, cycle and bus linkages.

3.2.2 CIF Objectives

The Community Infrastructure Fund (CIF) supports transport infrastructure delivery across the Growth Areas and Growth Points. CIF will support the type of transport schemes that are vital locally in unlocking large housing development sites, enabling the acceleration of sustainable housing growth for new and existing communities.

The CIF proposals identify five key objectives for transport, detailed below, as defined by NATA.

- ***Environment***
- ***Safety***
- ***Economy***
- ***Accessibility***
- ***Integration***

3.2.3 Transport Policy Objectives

Current guidance and policy, the CIF objectives, and the objectives set through Lincolnshire Transport Strategies were used as a basis for the development of a set of bespoke Policy Objectives. The following 8 objectives are the Policy Objectives that have been generated through the study process. The 5 DaSTS goals are a complementary set of objectives and are similarly listed below.

Policy Objectives

- ***PO1 - To improve sustainable transport in order to reduce dependence on the private car***
- ***PO2 - To manage the level of congestion in Gainsborough***
- ***PO3 - To improve accessibility for all***
- ***PO4 - To improve safety and security for all transport users***
- ***PO5 - To improve air quality and reduce noise impact***
- ***PO6 - To encourage sustainable inward investment in Gainsborough***
- ***PO7 - To support the regeneration of Gainsborough***
- ***PO8 - To protect and enhance the built and natural environment***

DaSTS Goals

- ***DG1 - To support national economic competitiveness and growth, by delivering reliable and efficient transport networks***
- ***DG2 - To reduce transport's emissions of carbon dioxide and other greenhouse gases, with the desired outcome of tackling climate change***
- ***DG3 - To contribute to better safety, security and health by reducing the risk of death, injury or illness arising from transport, and by promoting travel modes that are beneficial to health***
- ***DG4 - To promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society***
- ***DG5 - To improve quality of life for transport users and non-transport users, and to promote a healthy natural environment***

The Policy Objectives provide a framework for the Transport Strategy and are taken forward with the DaSTS goals to appraise the transport options developed within the study.

4 Problems and Issues

4.1 Introduction

This chapter describes the current and potential future issues associated with travelling to, from and within Gainsborough using a wide range of desktop data sources, information derived from site visits, information obtained from stakeholder workshops, and data collected in association with the baseline review (Chapter 2) and traffic forecasting (Chapter 5) study work. The key problems, issues and opportunities for each mode of transport are highlighted and provide a basis to develop targeted options for improvement.

4.2 Accessibility and Severance

4.2.1 Road Safety

There are a number of road safety concerns in Gainsborough. Two of the main roads into Gainsborough, the A156 Lea Road and the A631 Thorndike Way, have the highest number of recorded collisions in the Gainsborough area in the 3 year period between June 2006 and September 2009. There is also a potential safety issue on Flood Road approaching the Trent Bridge as there is a restricted sight line and limited visibility towards the junction. A 20mph zone has been introduced in the area surrounding Morton Primary School. There is an opportunity to introduce 20mph zones in other areas of the town.

4.3 Severance

There are three major physical barriers to movement in Gainsborough creating severance issues: the River Trent, the railway line and Thorndike Way.
The River Trent restricts access to areas to the west of Gainsborough as there is only one crossing point, the Trent Bridge on Flood Road. The railway line through the centre of Gainsborough segregates the residential and employment areas to the east from the main town centre area to the west. The A631 Thorndike Way is a dual carriageway segregating two residential areas and the employment sites to the east of Gainsborough from the rest of the town.

4.4 Land Use Planning

It is of upmost importance in order to ensure Gainsborough is a well connected coherent town, and therefore careful consideration and planning is required for potential new areas of development. With the growth of the town it will be vital that any new developments and Urban Extensions are fully integrated to the existing town, providing good access for all modes of transport.

4.5 Regional Links

There are concerns that the limited accessibility of Gainsborough from regional locations may deter investment in the town. Gainsborough is better connected than some other areas of Lincolnshire but the town is still some distance away from the A1 and motorway network, and accessibility to regional destinations by public transport is currently limited.

4.6 Demographics

The Gainsborough wards are the most deprived wards in the whole of West Lindsey District. Gainsborough also has a significantly lower level of car ownership then in West Lindsey, with 34% of households not owning a vehicle.

There are limited travel options to access employment, education, key services, and shopping and leisure facilities for those sections of the population of Gainsborough on a low income or without access to a private car.

4.7 Walking and Cycling

4.7.1 Cycle Routes

The cycle paths in Gainsborough lack continuity and generally stop short of the town centre, except along Sandsfield Lane, Colville Terrace and Southholme. The routes are often incorrectly signed or not signed at all.

4.7.2 Cycling Facilities

There are a limited number of cycling facilities within Gainsborough. Cycle lockers are only available at the bus station and Roseway car park, and are of a poor standard. There is no cycle storage provided at either the Lea Road or Central Rail stations.

4.7.3 Walking Routes

The walking routes within Gainsborough are varied in terms of signage, accessibility and the quality of the surrounding urban realm.

4.7.4 Signage

The signage provided along pedestrian routes is lacking in clarity and consistency. The town centre lacks direct routes satisfying desire lines and comprehensive signing is vital to prevent pedestrians from being discouraged from using walking routes. Inadequate signage at the transport interchanges is of particular concern.

4.7.5 Subways

Gainsborough has a number of subways, footbridges and at-grade crossings to negotiate the physical barriers to pedestrian movement of Thorndike Way and the railway line.

The subways are generally in a run down state. Issues include extensive presence of graffiti, litter, broken glass and other signs of anti-social behaviour. The condition of the subways is likely to be a deterrant to their usage.

4.7.6 At-Grade Crossings

The majority of roads have footways alongside and pedestrian crossings across the major routes. However, additional at-grade crossings could be considered to improve access to key locations around the town, as well as providing access to the proposed Urban Extensions and employment development sites.

4.7.7 Footway Quality

The overall footway quality in Gainsborough is considered largely satisfactory. A large proportion of the footway crossing locations have tactile paving installed. However, there were a number of examples where the quality of the footways were in a poor state and in need of repair and replacement. There are also areas which are lacking in any tactile paving at the designated crossing locations or, where it is provided, it is in a poor condition.

4.7.8 Urban Realm

The overall appearance of the urban realm around Gainsborough is of mixed quality. There is very little evidence of graffiti around the town centre and street lighting is provided throughout much of the town centre and residential areas. However, the presence of litter is a concern. The overall appearance and location of street furniture, such as benches, in and around Gainsborough are deemed to be too few, poorly positioned and in a state of disrepair.

4.7.9 Green Space

Within Gainsborough, there are a number of different areas of green space, ranging from recreational areas to areas of landscaping. However, some areas of green space are currently not well kept, suffering from an absence of bins and a lack of natural surveillance and as a result create no sense of public ownership.

4.8 Congestion

Gainsborough is relatively free from congestion, although the A631 The Flood Road is reported to suffer from queuing extending back across the Trent Bridge from the junction with Lea Road and Bridge Road. However, future growth of the town centre and the development of the Urban Extensions will put added pressures on the urban area in terms of increasing levels of congestion at specific locations. Some locations within the urban area already suffer from a number of issues, which are listed below.

4.8.1 Local Issues

Narrow Streets

The origins of Gainsborough are a medieval town with narrow streets. The layout of this historic core has remained to the present day, which results in problems for traffic and pedestrians when HGVs access the town centre.

The Belt Road

This road is not suitable for use as a distributor road, particularly for use by HGVs due to a height-limiting bridge and the narrow road.

Traffic Demand Increases

There is an increase in traffic during the summer months on Friday afternoons and evenings, primarily on the west to east route along the A631 The Flood Road and Thorndike Way, as people head from areas inland to the coast for the weekend. Gainsborough is also forecast to experience significant expansion in housing and employment development in the future as a result of the designation of the town as a Growth Point.

Emergency Access

There are areas where traffic calming measures have been used, such as along the residential areas around Heapham Road, to limit vehicle speeds and discourage 'rat-running'. However, these measures can inhibit access for the emergency services.

HGV Signage and Routing

There are no signs to direct HGV drivers along the most appropriate route in the town. However, there are warnings of low bridges on route signs to prevent drivers of over height vehicles from taking a wrong turning.

Taxi Ranks

There is currently one designated taxi rank located on the Market Street/Heaton Street site. Permission exists for space for four vehicles at this site. A further temporary rank is provided on the corner of Lord Street/Parnell Street during the undertaking of public realm works which has also resulted in a temporary relocation of the market to the former Guildhall site.

4.9 Bus Services and Facilities

4.9.1 Services

The bus services within Gainsborough can be considered in two groups; those which operate within the town and those which provide travel to external urban areas. These external services vary from the high frequency IntoTown services, to routes which operate only one service per week. However both groups lack adequate evening services and during the weekend the frequency of the services become much lower.

4.9.2 Bus Station

The bus station, located on Hickman Street to the south of the town centre, is not an attractive facility to use and does not feature as a 'gateway' to the town. There is also no signage directing passengers to Marshall's Yard. The low levels of pedestrian activity result in a low level of perceived personal safety for bus passengers, particularly in the early morning or evenings.

4.9.3 Bus Stops

Although there are a good number of bus stops around the town, there are some problems with the quality of the facilities. Some stops lack a raised kerb and others have missing or damaged timetable information.

4.9.4 Shelters

There are a limited number of locations where bus shelters are provided in Gainsborough. Those which are provided differ in attractiveness, with some covered in graffiti and others in litter.

4.9.5 Seating at Bus Stops

There are very few locations where a shelter and seating is provided, and where seating is provided, this tends to be of a low quality with many of the benches broken.

4.10 Rail Services and Stations

4.10.1 Lea Road Station

Station Facilities

Lea Road Station has a run down appearance and is generally poorly maintained. The platform surfacing is very uneven in places. There is no real time information or PA system. There is also no information provided for onward travel, maps of the local area or tourist information. The passenger facilities at the station are extremely limited. The station is unmanned with no ticket facilities or help points.

Station Access

Lea Road Station is located around 1 mile outside of Gainsborough town centre, making it a 20-25 minute walk to the town centre. The train station is on the busy Lea Road and pedestrians may find it difficult to cross the road outside the station without a formal crossing. There is limited signage for both pedestrians and cyclists to and from the station. In terms of a bus link there is only an hourly service to the station, the Inter Connect 100 service, and it is not timetabled to coordinate with the rail services. The rail fare to Lincoln is the same price as the bus. Despite the poor connectivity with the town centre and basic station facilities, the station serves 140,000 passengers a year and there is a good level of rail services available.

4.10.2 Central Station

The only services from Central Station are three trains on a Saturday between Sheffield and Cleethorpes, and as a result the station is reported to have the lowest patronage in the UK. The station area is run down and poorly maintained, with only basic facilities. There are no signed access routes for pedestrians and cyclists, no bus routes serve the station and there is no designated parking available. There are no facilities available for wheelchair users or passengers with impaired mobility, with access to the other platform via a footbridge or crossing point on the railway tracks.

5 Traffic Forecasting

5.1 Introduction

This chapter sets out the transport conditions which could be expected with future development and growth in Gainsborough and identifies any problems and issues associated with the growth of the town. This enables the development of the Strategy to focus on key areas and identify options for improvement.

The Gainsborough Transport Model used for the forecasting was developed to provide the capability to model both existing and future traffic and land use scenarios, as well as testing road network infrastructure and public transport improvement options. The model is validated to a 2009 base year and reflects typical morning and evening peak traffic conditions. Details on the 2009 base year model may be viewed in the Local Model Validation Report, dated December 2009.

5.2 Land Use Assumptions

5.2.1 Committed Development

The West Lindsey Annual Housing Supply Assessment 2008/09 stated there were 1,188 completions between 2001 and March 2009, and therefore only a further 327 are required to meet the housing requirement for 2016. However, a total of 1,631 dwellings are under construction or have been granted full or outline planning permission and a further 402 dwellings are included in residual Local Plan Allocations, giving a total of 2,033 planned new dwellings. The committed and additional local plan for housing in Gainsborough and the sites for this development are shown in Figure 5-A, along with land allocated as potential strategic development areas.

5.2.2 Urban Extensions: Planning Horizons and Order of Development

The horizon years for the development of the three possible Urban Extensions were determined by considering the following:

- ***The assumptions included in the Development Application for the Southern Urban Extension (developed by TTHC for Thonock and Somerby Estates)***
- ***Programme of Development (2008-2026) for Gainsborough Growth Point (dated October 2008).***
- ***Programme of Development: Appendix One – Report on Extensions Housing Delivery Scenarios developed by DTZ for Thonock and Somerby Estates.***

Based on the wide variety of growth rate assumptions contained within these documents, the latest Development Application for the Southern Urban Extension was used as the benchmark and it was assumed that each extension would take 14 years to develop. It was also assumed that the extensions would be developed consecutively.

Hence, the horizons for the Urban Extension development are as follows:

- ***Southern Urban Extension = 2023***
- ***Northern Urban Extension = 2037***
- ***Eastern Urban Extension = 2051***

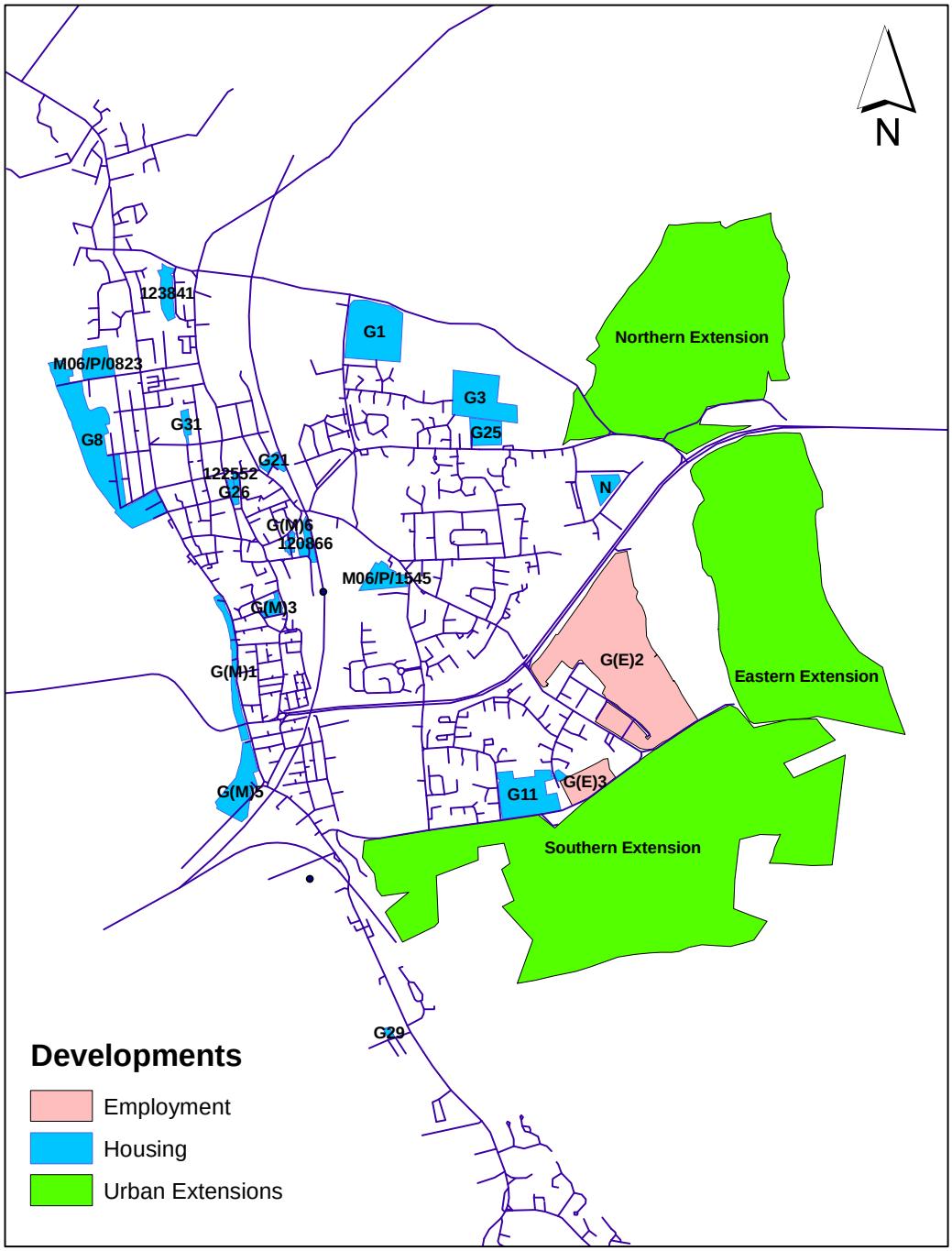


Figure 5-A Locations of the Committed Allocated Development in the West Lindsey Local Plan Review 2006

5.2.3 Southern Urban Extension

The 2023 Southern Urban Extension scenario includes all of the committed development and the proposed Urban Extension. In addition to the 2,500 dwellings and 13,445 m^2 of employment development, the proposed Southern Urban Extension would also include:

- ***2 Schools (545 pupils in total)***
- ***2 Local Centres***
- ***Neighbourhood Centre***
- ***Health Facilities***
- ***Ancillary Services***

5.2.4 Northern and Eastern Urban Extensions

In the absence of detailed information, the mix of development and community facilities for the Northern and Eastern Extensions are assumed to be the same as for the Southern Extension detailed above, with the exception of secondary schools.

5.3 Transport Provision

5.3.1 Urban Extension Transport Provision

The provision for highway network access to the possible Urban Extension sites is shown in Figure 5-B. The public transport provision for the three sites is shown in Figure 5-C, and includes an extension of the bus service linking the new Heapham Road industrial estate to the Eastern Urban Extension.

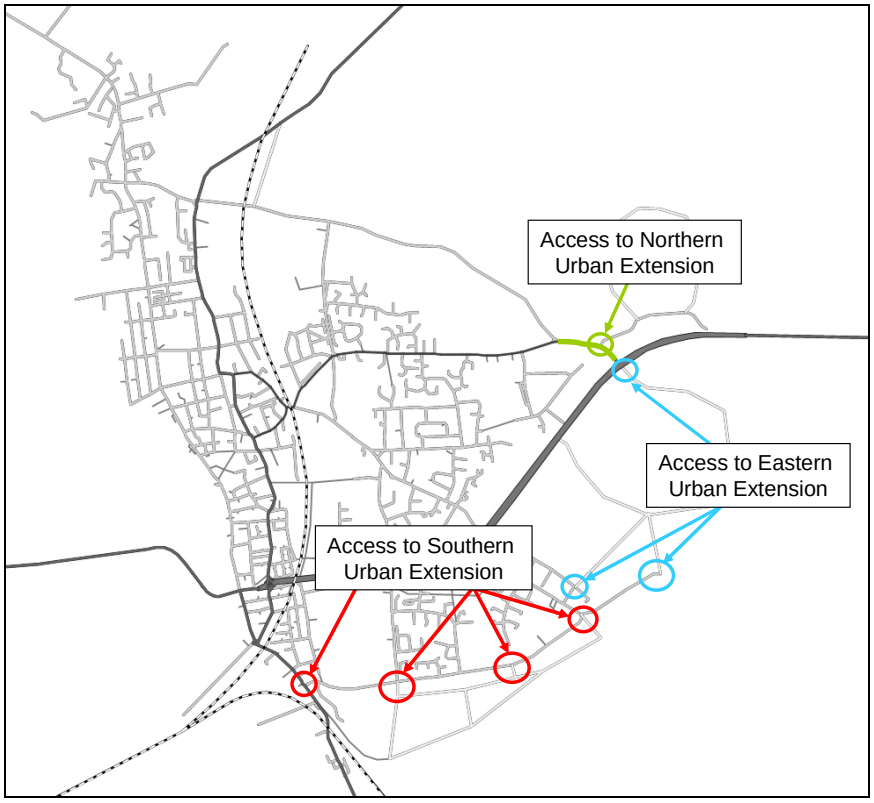


Figure 5-B Highway Network Access Provision

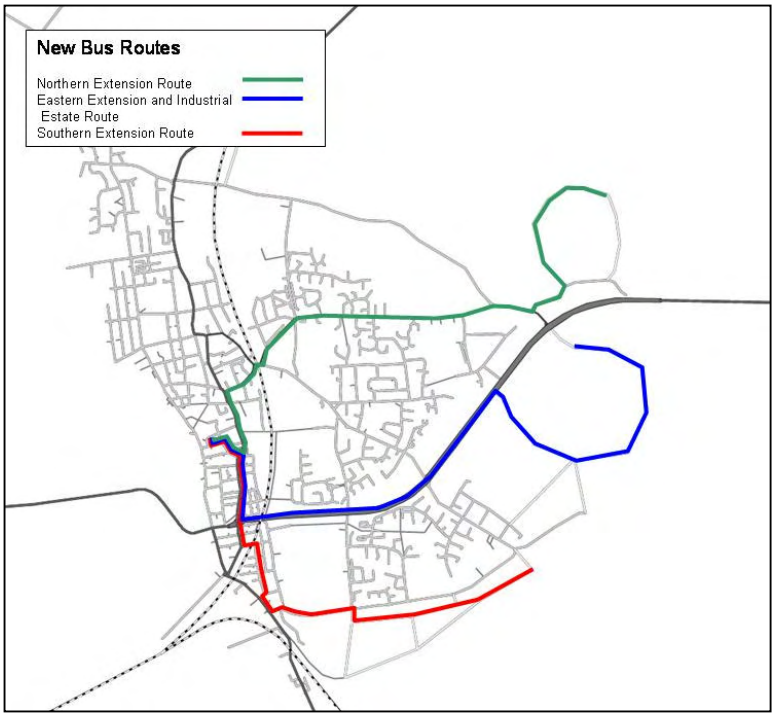


Figure 5-C New Bus Networks and Services

5.3.2 Additional Highway Network Changes

A small number of changes to the highway network are assumed to take place in future and are shown in Figure 5-D. These changes include any committed improvements occurring after June 2009.

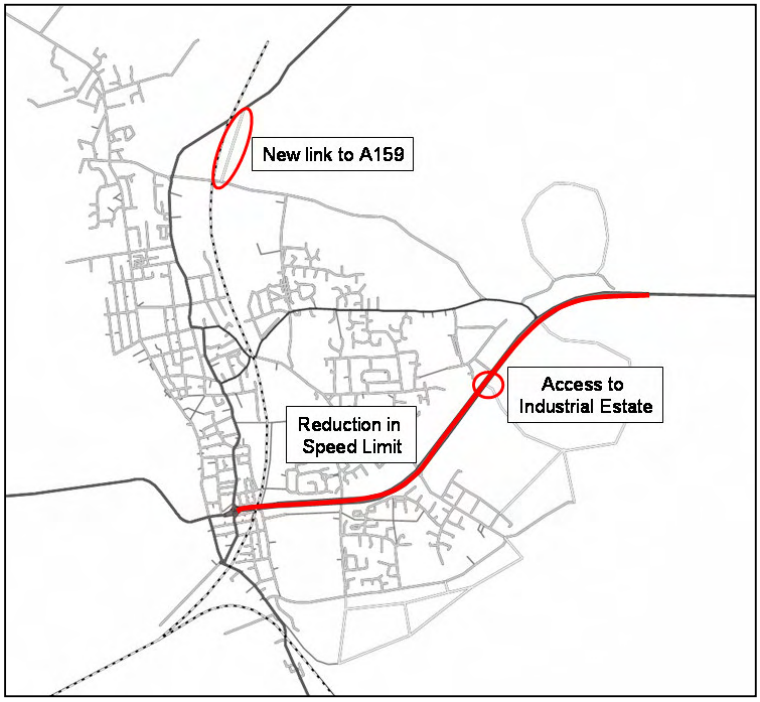


Figure 5-D Additional Highway Network Changes

5.4 Traffic Forecasting

5.4.1 Overview of Modelling Methodology

The modelling approach was designed to provide the capability to analyse both existing and future traffic and land use scenarios, as well as testing road network infrastructure and public transport improvement options.

A 2023 reference case was derived from the 2009 base year model by the application of TEMPRO growth factors to the external-to-external movements (through trips) in the 2009 base model. The 2023 forecast scenario was developed within the DfT WebTAG guidelines for forecast modelling.

The 2037 and 2051 scenarios were generated by adding land use changes and TEMPRO background growth (those passing through the town) to the 2023 Southern Urban Extension scenario.

5.4.2 Growth Factors

Whilst no TEMPRO growth factors were applied to the trips within Gainsborough, the trips external to Gainsborough (external-to-external trips) did need to be factored up to represent growth in the areas surrounding Gainsborough. The growth factors applied to the external trips in the 2009 base model are shown in Table 5-A.

	Factor applied to 2009 trips	
Year	**AM**	**PM**
2023	1.139	1.157
2037	1.243	1.256
2051	1.278	1.330

Table 5-A Factors for External Trips by Forecast Year

5.4.3 Trip Generation

The trip generation was produced by the VISUM model with trip rate data obtained from the TRICS database for the committed housing and employment developments in the Urban Extensions in the AM and PM peak periods.

5.4.4 Final Forecast Matrix

Table 5-B presents the total person trips generated by the modelling process for the scenarios considered. The proportional growth in the AM peak was higher than the PM peak growth due to the lower number of trips in the 2009 AM base, and the inclusion of significant school and employment trips to and from the Urban Extension zones during the AM peak.

Scenario	AM (08:00 – 09:00)		PM (16:30 – 17:30)	
	Total Person Trips	% Growth	Total Person Trips	% Growth
2009 Base	23,920		30,715	
2023 Southern Urban Extension	34,577	44.6%	41,229	34.2%
2037 Southern and Northern Urban Extensions	42,224	22.1%	49,253	19.5%
2051 All Urban Extensions	50,343	19.2%	58,038	17.8%

Table 5-B Total Trips for the Forecast Scenarios

5.5 Modelling Results

The various scenarios, listed below, were assessed in terms of overall road network traffic volumes, total road network performance and the level of congestion that is likely to occur at a number of key junctions on the strategic road network. This exercise provides data to reveal the likely transportation conditions in the future without the successful implementation of a sustainable transport Strategy.

- ***2023 – Southern Urban Extension***
- ***2037 – Southern and Northern Urban Extensions***
- ***2051 – All Urban Extensions***

5.5.1 Road Network Performance

The forecast modelling indicated that a worsening of conditions can be expected with the introduction of each possible Urban Extension, as the average speed of traffic decreases in each successive future year scenario.

5.5.2 Junction Performance

A number of the key junctions in Gainsborough have been analysed for the various scenarios considered. A junction has been considered to be over capacity if the highest volume / capacity ratio for any arm is greater than 85%.

5.5.3 2023 Southern Extension Scenario

Figures 5-E to 5-G show the junctions that are forecast to operate over-capacity during one or both peak periods. In 2023, the following junctions are over capacity in the AM peak:

- ***Bridge Street and The Flood Road***
- ***Thorndike Way and Ashcroft Road***
- ***Lea Road and Ashcroft Road***
- ***Foxby Lane and Heapham Road***
- ***Thorndike Way and Corringham Road***

During the PM Heapham Road and Foxby Lane junction is over capacity.

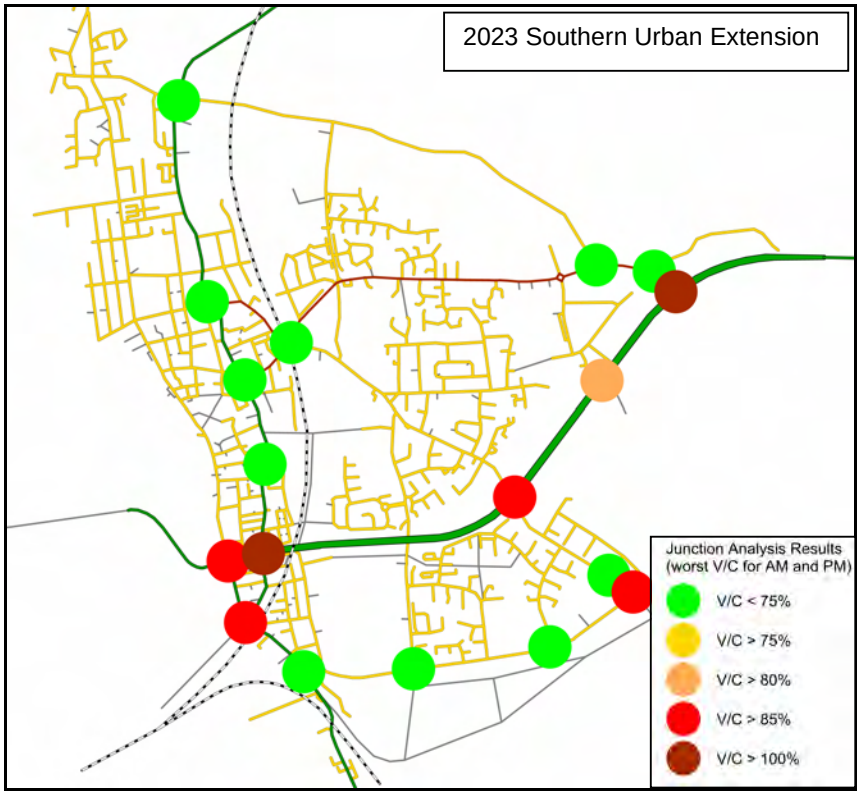


Figure 5-E 2023 Southern Urban Extension Junction Assessment Results

5.5.4 2037 Southern and Northern Extensions Scenario

Figure 5-F shows that the access to the Northern Urban Extension is over capacity during the AM peak as is the junction of Cox's Hill onto Spital Hill. During the PM peak, there is congestion at the junction to Tesco.

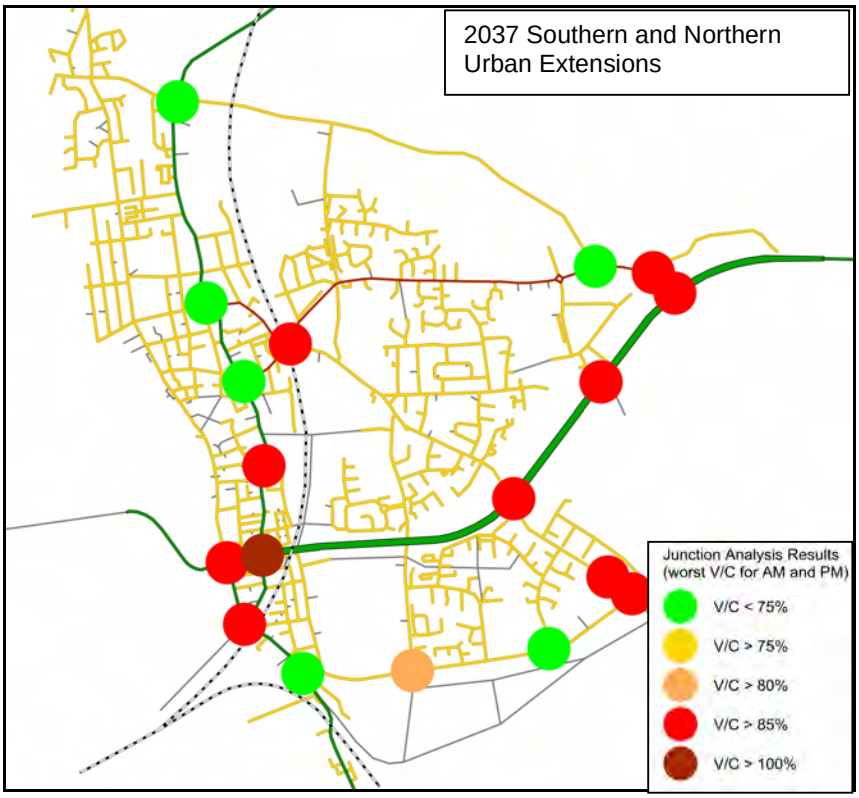


Figure 5-F 2037 Southern and Northern Urban Extensions Junction Assessment Results

5.5.5 2051 Southern, Northern and Eastern Urban Extensions Scenario

Figure 5-G shows that there are a significant number of junctions over capacity in both the AM and PM peak periods. It may be possible to apply mitigation measures to decrease the impact of forecast traffic increases with junction improvements and therefore delay the onset of congestion. It may also be possible to mitigate this impact through a package of sustainable travel measures. These options are examined as part of the study process which informs the Final Gainsborough Transport Strategy.

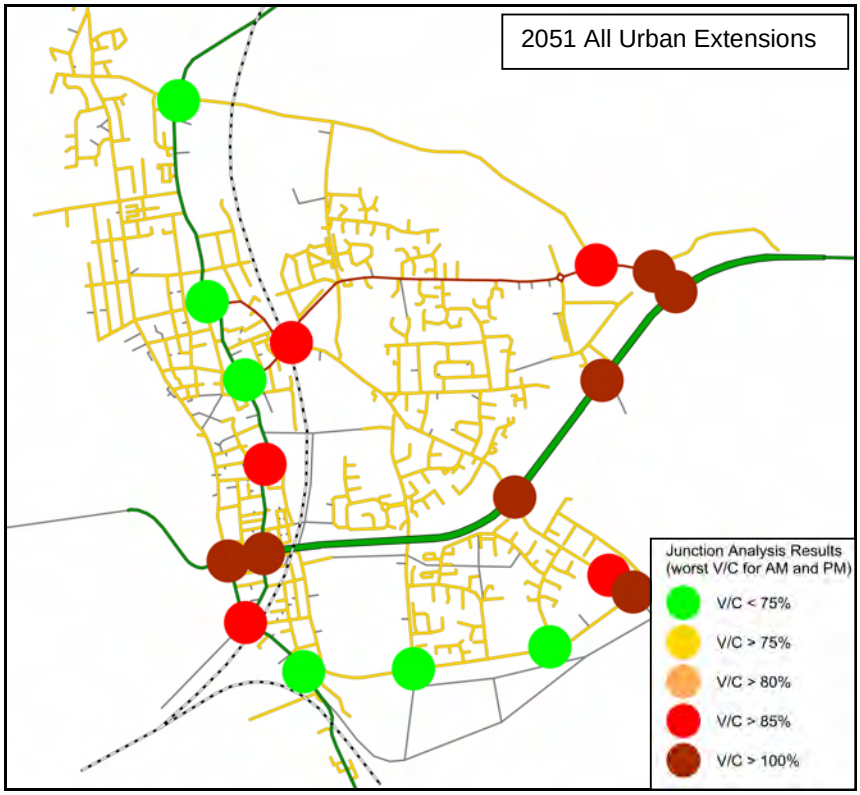


Figure 5-G 2051 All Urban Extensions Junction Assessment Results

6 Option Appraisal

6.1 Introduction

This chapter presents the identification, development and qualitative appraisal of possible transport schemes and options to address the problems, issues and opportunities identified in Chapters 4 and 5 and to contribute to the Strategy policy objectives identified in Chapter 3.

6.2 Appraisal Methodology

A flowchart indicating the stages and inputs is shown below in Figure 6-A.

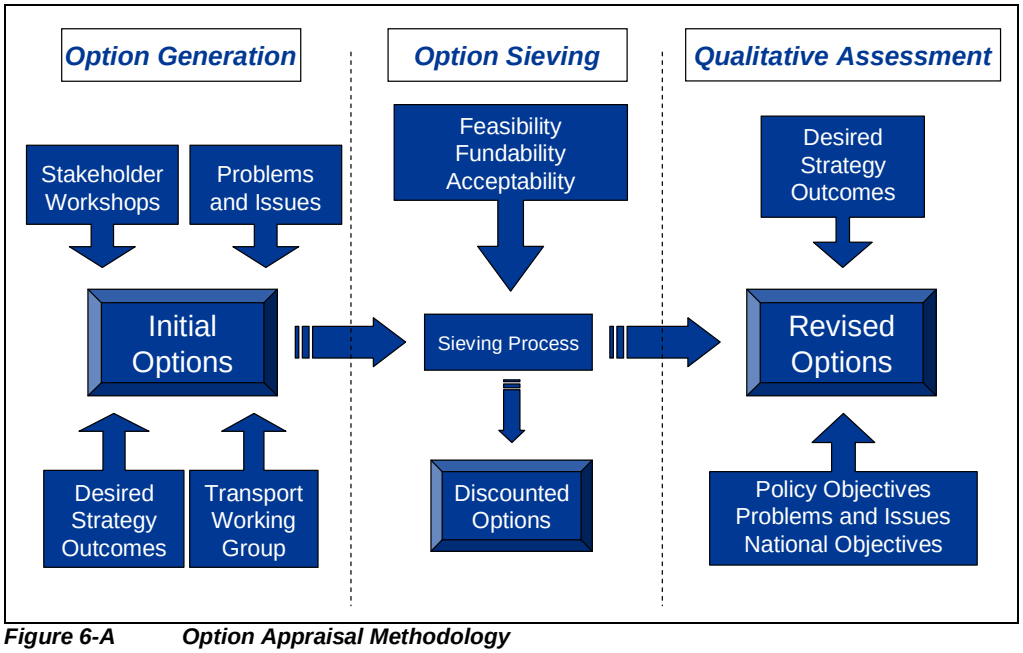


Figure 6-A Option Appraisal Methodology

An initial set of transport improvement options was developed. These initial options were then sieved with consideration of issues relating to feasibility, funding and acceptability. This process removed certain options and also allowed options to be refined and clarified. The process also identified any existing schemes to avoid duplication in the Strategy.

6.3 Recently Completed Schemes

6.3.1 Thorndike Way / Corringham Road

A road safety scheme was completed during summer 2009 at the junction of the A631 Thorndike Way and the B1433 Corringham Road. This scheme reduced the eastbound carriageway of Thorndike Way from two lanes to one through the junction, to give vehicles turning right from Corringham Road a safer manoeuvre.

6.3.2 A159 North Street / B1433 Spital Terrace / Roseway

The junctions of the A159 North Street with the B1433 Spital Terrace and with Roseway, were converted in Summer 2009 from give-way junctions to mini-roundabouts, which included improved pedestrian crossing facilities.

6.4 Schemes Currently Underway

6.4.1 Public Realm Improvement Scheme

A significant improvement scheme is underway in the town centre to resurface the Market Place, Lord Street and Silver Street shopping areas, and to provide high quality street furniture such as benches, litter bins and signposts. This scheme is expected to be completed during summer 2010.

6.5 Committed or Potential Schemes

6.5.1 Tesco Expansion

A Planning Application has been approved for Tesco to expand their existing store on Trinity Street.

6.5.2 Summer Hill Ghost Islands

A transport mitigation scheme is proposed for an installation of a new ghost island, which will facilitate right turning traffic accessing an area of new development in the area of Summer Hill.

6.6 Option Sieving

6.6.1 Options Removed from Appraisal Process

The options which were removed from further consideration at this stage are listed below:

- ***Park and Ride***
- ***Town Bypass***
- ***Ferry Service on River Trent***
- ***Realignment of railway to Central Station***
- ***Connecting Central and Lea Road stations***
- ***Improving the East-West highway corridor***

The options to connect Central and Lea Road stations and to improve the East-West highway corridor as part of the Coastal Access Strategy have both been discounted at this stage but do warrant particularly commentary. While challenging to fund and deliver, both these options have merit and would serve to meet particular strategic and longer distance transportation objectives.

The options are not appropriate as part of the Transport Strategy which is being developed in accordance with the sustainable principles of the CIF Business case but the recommendation of this study is that these particular options should be retained for further study and feasibility assessment in accordance with future strategic transportation studies.

6.6.2 Options for Appraisal

The options which remained after the sieving process were grouped under the same categories as were used to identify the Problems and Issues, in order to facilitate the development of options which target solutions to particular problems. These categories are:

1. Congestion
2. Accessibility and Severance
3. Walking and Cycling
4. Bus Services
5. Rail Services

The appraisal process produced an initial set of transport options which were consulted on in June/July 2010. The final list of options are presented in Chapter 9

Each option is described in more detail including an outline cost, potential funding sources and timescale for implementation are given for each option, along with key strengths or issues.

6.7 Qualitative Assessment

The qualitative assessment examined how well each option would contribute to the objectives of the Strategy and transport related policies, and how well it would target the identified problems and issues.

6.7.1 Qualitative Assessment Scoring

Each of the options have been assessed in terms of the extent to which they contribute to addressing the problem themes of congestion, accessibility and severance, provision for cycling and walking, bus services and rail services; and to achieving the policy objectives for the Gainsborough Transport Strategy and DaSTS goals. The following scoring system has been used for the assessment:

Score	
+2	Significant Positive Impact
+1	Slight Positive Impact
0	Mixed Impact or Negligible Impact
-1	Slight Negative Impact
-2	Significant Negative Impact

Table 6-A Qualitative Assessment Scoring System

6.7.2 Sensitivity Testing

The options were taken forward through sensitivity testing in order to check the robustness of the original scoring method. This was deemed necessary due to the natural weighting implicit within the scoring system used, which was slightly in favour of Policy Objectives, there were eight policy objectives and five each of the remaining appraisal elements (5 each for Problem Themes, DASTS goals and Supporting Analysis). Whilst a change in the weightings altered the results of each

of the Option's scores, the overall picture did not materially change under any of the tests. The final outcome of the scoring process of the options is in Table 6-B below.

PR1 - Congestion	Cost	Timescale	Overall Score
1A - Re-design of On-Street Parking on Trinity Street	< £50k	Short-term	16
1D - Friday Traffic Signal Plan	< £50k	Short-term	15
1I - Town Centre Pedestrian Improvements	N/A	Long-term	14
1C - Freight Management Plan	N/A	Short-term	12
1K - Taxi Rank Relocation	N/A	Short-term	11
1B - Car Park Guidance System	£300k	Short-term	9
1G - Connect Heapham Road to Thorndike Way	£300k	Medium-term	9
1H - Junction Improvements	N/A	Medium-term	9
1F - Belt Road Upgrade	>£1m	Long-term	6
1J - Parking CCTV Improvements	£200-£400k	Short-term	5
1E - Parking Review	£200-£400k	Short-term	3
PR2 - Accessibility and Severance			
2E - Personalised Travel Planning	£400k	Short-term	33
2C - Transport Information	£100-£250k	Short-term	29
2D - Sustainable Transport Promotion	N/A	Short-term	26
2F - School Travel Planning	£70k	Short-term	23
2I - Land Use Planning	N/A	Long-term	22
2A - 20mph Zones	£500-£700k	Short-term	21
2H - Ensure Developments Provide Appropriate Section 106 Contributions	N/A	Short-term	20
2G - Workplace Travel Planning	N/A	Short-term	19
2B - Road Safety Improvements	N/A	Short-term	16
PR3 - Provision for Cycling and Walking			
3C - Walking Infrastructure Improvements	£500k	Short-term	29
3A - Cycle Infrastructure Improvements	£200k	Short-term	27
3B - Cycle Parking Provision	£50-£100k	Short-term	26
3D - DDA Audit	£50k	Short-term	17
3E - Riverside	£200k-£1m	Short-term	8
3F - Recreational Routes	>£1m	Short-term	8
PR4 - Bus Services			
4I - Extension of Bus Routes	£500k	Medium-term	21
4B - Bus Station Upgrade	£400k	Short-term	17
4H - Improve Bus Stops	>200k	Short-term	16
4A - Bus Station Relocation	>£1m	Short-term	14
4G - Evening Bus Services	£100k	Short-term	14
4E - Real-time Bus Information	£500k	Short-term	12
4F - Shuttle Bus to Lea Road Station	£100k	Medium-term	12
4C - Connect Heapham Road to Thorndike Way - Bus Only	£300k	Medium-term	10
4D - Smartcard Ticketing	>£1m	Short-term	9
4J - Bus Onboard Information	£50k	Short-term	9
4L - Bus Priority Junctions	>500k	Long-term	4
4M - Bus Express Ways	>£5m	Long-term	3
4K - Shuttle Bus to Robin Hood Airport	£100k	Medium-term	1
PR5 - Rail Services			
5B - Lea Road Train Station Re-Development (Land Take)	>£1m	Short-term	17
5A - Lea Road Train Station Re-Development (No Land Take)	>£1m	Short-term	16

Table 6-B Overall Scores for Options

7 Emerging Transport Strategy

7.1 Introduction

The chapter provides a description of the options presented in Chapter 6 that are part of the Emerging Transport Strategy.

7.2 Description of Strategy Packages

A detailed description of the options contained in each of the Strategy packages is available in the Emerging Transport Strategy Report. Options have been packaged together according to the key problem themes that have been used throughout the study. Each option is given a timetable for implementation on a short (by 2013), medium (by 2023) and long term (by 2037).

Each package of options is focused upon providing positive outcomes by addressing some of the issues in each of the following five problem themes.

- ***Congestion***
- ***Accessibility***
- ***Walking and Cycling***
- ***Bus***
- ***Rail***

7.3 Congestion

The following options would assist with the management of congestion in Gainsborough both in the short-term and longer-term as the proposed Urban Extensions are developed.

- ***1C – Freight Management Plan***
- ***1D – Friday Traffic Signal Plan***
- ***1A, 1E, 1K – Parking Review***
- ***1I – Improved Provision for Pedestrians***
- ***1J – Parking CCTV Improvements***
- ***1H – Junction Improvements***
- ***1F – The Belt Road Upgrade***

The options aim to minimise congestion and maintain reliable journey times within the town, reducing the traffic impact particularly within the town centre and providing benefits in terms of minimising intrusive traffic noise and potential future issues of poor air quality.

7.3.1 1C – Freight Management Plan (Short-Term)

The introduction of a freight management plan would ensure that Heavy Goods Vehicles (HGVs) and delivery vehicles would use the most appropriate routes when delivering within and travelling through Gainsborough, and ensure that disruption to general vehicular traffic and the travelling public is minimised during deliveries and servicing.

7.3.2 1D - Friday Traffic Signal Plan (Short-Term)

Optimising signal settings for specific traffic scenarios is an effective way to manage traffic flow and reduce delays without providing additional road capacity. It is understood that this junction has undergone significant optimisation work, however this option involves the development of a signal timings plan specifically for Friday afternoon at the Flood Road / Bridge Street junction and to include an assessment of the potential for small scale improvements to the geometry and capacity of the junction

7.3.3 Parking Review (Short-Term)

Within Gainsborough, a parking review would assess the measures required to encourage sustainable travel whilst ensuring accessibility for those who continue to need to park. The availability of parking has been shown to be a key influential factor on travel behaviour. Reducing or maintaining the number of on and off street parking spaces, coupled with good alternative means of access, may therefore prove an effective measure to encourage modal shift and promote the use of alternative modes of transport to the private car.

7.3.4 1I - Improved Provision for Pedestrians (Long-Term)

This option would promote pedestrian activity by reducing the severance effect of motorised traffic. Better facilities would be provided to assist pedestrian movement between key town centre destinations and across some main roads. The urban realm would be designed to encourage drivers to have a greater awareness of each other and pedestrians and cyclists.

7.3.5 1J - Parking CCTV Improvements (Short-Term)

Improving the standard of the car parks, to ensure all car parks within Gainsborough have appropriate levels of surveillance, lighting, signage and cleanliness, contributing to improved personal safety and security. Improvements to the standard of parking facilities further offer the opportunity to enhance the built environment in Gainsborough.

7.3.6 1H - Junction Improvements (Medium-Term)

The identification of targeted junction improvements in order to relieve congestion around certain areas. The addition of the potential Urban Extensions combined with general growth within Gainsborough is likely to increase travel demand in the town. Where such increases in travel demand cannot be accommodated by other measures, junction improvements would be necessary to relieve congestion.

7.3.7 1F - The Belt Road Upgrade (Long-Term)

This option involves upgrading The Belt Road to serve as a distributor road linking the areas to the north of Gainsborough to the Corringham Road and Heapham Road Industrial Estates, avoiding the town centre. This route would then also serve the proposed Northern and Eastern Urban Extensions.

7.4 Accessibility and Severance

The following options would ensure all members of society are informed of and able to access the travel options available to them within Gainsborough, improving accessibility to employment, education, key services, and shopping and leisure facilities. This package includes the following options:

- ***2A – 20mph Zones***
- ***2B – Road Safety Improvements***
- ***2C – Transport Information***
- ***2D – Sustainable Transport Promotion***
- ***2E – Personalised Travel Planning***
- ***2F – School Travel Planning***
- ***2G – Workplace Travel Planning***
- ***2H – Ensure all Development Provide Section 106 Contributions***
- ***2I – Urban Extension Land Use Planning***

7.4.1 2A - 20mph Zones (Short-Term)

To ensure traffic speeds are appropriate in areas with a high level of pedestrian activity, 20mph zones would be introduced in the town. The 20mph zones would require appropriate signing and could be introduced in combination with other traffic calming measures such as road humps, speed cushions or narrowed lanes.

7.4.2 2B - Road Safety Improvements (Short-Term)

A road safety review would build upon the collision data analysis carried out as part of the wider Gainsborough Transport Strategy. Through site visits and safety auditing, the review would identify potential areas for road safety improvements and the appropriate types of interventions required. Vehicle speed data would be collected to identify areas where speeding may be of concern and to provide justification for proposed road safety interventions.

7.4.3 2C - Transport Information (Short-Term)

The improved quality and distribution of travel information throughout Gainsborough would help raise public awareness of alternative modes of transport and of the local area. Through improving the quality and availability of local transport information, a number of positive outcomes can be generated, including:

- ***Raising the profile of walking, cycling and public transport within Gainsborough***
- ***Providing accurate travel information via new technology***

7.4.4 2D - Sustainable Transport Promotion (Short-Term)

A comprehensive travel awareness campaign and on-going promotions would help to raise public knowledge of sustainable transport within Gainsborough. There are a number of benefits that travel awareness campaigns can offer to Gainsborough:

- ***Promotion of walking, cycling, public transport and car sharing as attractive and feasible modes of transport***
- ***Promotion of alternative working options, for example through tele- or home working***

- ***Raised awareness of the environmental, health and community impacts of dependency on car travel***

7.4.5 2E - Personalised Travel Planning (Short-Term)

Personal Travel Planning would be used in Gainsborough to target specific residential areas through a variety of tools and techniques in order to encourage a change in travel habits. One-to-one conversations, at the doorstep or by telephone, with trained travel advisors, improved travel information and offers of gifts/incentives could all be utilised to promote the use of sustainable modes.

7.4.6 2F - School Travel Planning (Short-Term)

Although all schools in Gainsborough have travel plans in place, this option would ensure that ongoing support is provided to schools to review, monitor and update their travel plans regularly.

7.4.7 2G - Workplace Travel Planning (Short-Term)

This option would coordinate and support major local employers to implement Workplace Travel Plans. Through writing and implementing Workplace Travel Plans, businesses can play an important role in encouraging sustainable travel to, from and during work. All new employment developments would be required to create Workplace Travel Plans.

7.4.8 2H - Ensure all Developments Provide Appropriate Section 106 Contributions (Short-Term)

This option is to ensure that the Section 106 system is applied to all new developments in Gainsborough to ensure that maximum reasonable benefit is derived from the process. To ensure that new developments do not result in significant increase in congestion on the local road network, improvements to both highway and sustainable transport provision must be included.

7.4.9 2I - Urban Extension Land Use Planning (Long-Term)

This option aims to ensure that planning applications for the proposed Northern and Eastern Urban Extensions, and any other new developments, are only accepted if developments can be shown to be sustainable. The Urban Extensions should be designed to ensure the development is attractive, useable, durable and adaptable; creating an environment where everyone can safely access and benefit from the range of opportunities available to society.

7.5 Cycling and Walking

This package of options would improve the facilities for pedestrians and cyclists within Gainsborough, promoting walking and cycling as an attractive, safe and healthy travel option. The options included in this package are:

- ***3A – Cycle Infrastructure Improvements***
- ***3B – Cycle Parking Provision***
- ***3C – Walking infrastructure Improvements***
- ***3D – DDA Audit***
- ***3E – Riverside***
- ***3F – Recreational Routes***

7.5.1 Cycle Infrastructure Improvements (Short-Term)

A number of new cycle lanes and a signed cycle route would link to existing cycle lanes throughout Gainsborough. This would provide a complete cycle lane network across the town.

7.5.2 3B - Cycle Parking Provision (Short-Term)

Cycle parking is a key element to encouraging cycling as it provides a convenient and secure place to store bicycles for both short term and long term stops.

Lea Road Railway Station and Bus Station

To help meet the needs of commuters, cycle parking is required to provide secure and safe storage for their bicycles.

Cycling storage locations throughout Gainsborough

Cycle storage locations throughout Gainsborough should be in areas where there would be high turnover of cyclist parking; typically these are near shops, leisure centres and the council offices.

7.5.3 3C - Walking Infrastructure Improvements (Short-Term)

This option would prioritise walking routes for infrastructure improvements through the use of a footway hierarchy, creating a set of high quality pedestrian routes which would be the focus of improvements and investment.

7.5.4 3D - DDA Audit (Short-Term)

An extensive DDA audit could help understand the needs of mobility impaired individuals and by incorporating them into transport planning across Gainsborough, an accessible, barrier-free environment can be provided. This not only benefits those with disabilities but also those travelling with small children, carrying luggage and many older people.

7.5.5 3E - Riverside (Short-Term)

The River Trent is an attractive natural feature of the town. This option would ensure that Gainsborough achieves the maximum benefit from this feature by improving connectivity between the riverside and the town centre, and creating a key venue for recreational activities.

7.5.6 3F - Recreational Routes (Short-Term)

This option involves the creation of a ‘green corridor’ of walking and cycle routes around the outskirts of the town linking the Urban Extensions and other potential new areas of development, and aiming to improve access to the countryside whilst linking with existing green space within the town.

7.6 Bus Services

This package of options would improve the facilities for travel by bus, both onboard and at waiting areas, and would ensure all areas of Gainsborough are served by a convenient, reliable and frequent bus service. The options included in this package are:

- ***4A – Bus Station Relocation***
- ***4B – Bus Station Upgrade***
- ***4D – Smartcard Ticketing***
- ***4E – Real-time Passenger Information***
- ***4G – Evening Bus Services***
- ***4H – Improve Bus Stops***
- ***4C – Connect Heapham Road to Thorndike Way Buses Only***
- ***4I – Extension of Bus Routes***
- ***4L – Bus Priority Junctions***
- ***4M – Bus Express Ways***

7.6.1 4A - Bus Station Relocation (Short-Term)

The option to re-locate Gainsborough Bus Station provides an opportunity to create a high quality public transport interchange. There are two proposed sites, although further potential sites could be investigated, the existing Roseway car park or alternatively the disused Council offices along Lord Street. Both are close to the main shopping and employment areas.

7.6.2 4B - Bus Station Upgrade (Short-Term)

Gainsborough Bus Station is currently located on Heaton Street, adjacent to the Lindsey Centre. Should options to relocate the bus station be undeliverable, there is potential to improve the existing site to make the facility more attractive in order to encourage the uptake of bus travel.

Possible site improvements for the existing bus station focus on improving passenger comfort and safety, and include:

- ***Improved waiting facilities at the bus station***
- ***Increased seating within bus shelters***
- ***Increased CCTV coverage of bus station area***
- ***Compliance with the Disability Discrimination Act***

7.6.3 4D - Smartcard Ticketing (Short-Term)

Smartcard ticketing for bus services would involve the introduction of electronic cards which would enable pre-payment for season tickets or standard fares and be accepted on all services in and around Gainsborough.

7.6.4 4E - Real-Time Passenger Information (Short-Term)

This option would provide a Real Time Passenger Information (RTPI) system at the bus station and at key bus stops throughout Gainsborough. Two types of information can be displayed:

1. Real-time information on the number of minutes until the next bus service will arrive
2. The timetabled departure time of the next bus service

7.6.5 4G - Evening Bus Services (Short-Term)

This option would provide additional bus services both in the evening and on Sundays on the IntoTown and InterConnect routes to supplement the existing services which are currently well used during the peak periods. The CallConnect minibus dial-a-bus service which supplements the InterConnect service should also be extended to operate in the evening and Sundays.

7.6.6 4H - Improve Bus Stops (Short-Term)

Throughout Gainsborough, bus stops need to be upgraded to achieve a consistent standard and design. Key bus stop improvements aim to focus on the following:

- ***Application of town 'transport branding' to bus shelters***
- ***Identification of bus stops where the installation of shelters would be beneficial***
- ***Ensure all bus stops are DDA compliant***
- ***Increased provision of improved seating***

7.6.7 4C - Connect Heapham Road to Thorndike Way Bus Only (Medium-Term)

The junction between Thorndike Way and Heapham Road currently provides access for pedestrians and cyclists only to the northern section of Heapham Road. This option would provide a bus-only link in both directions to connect the northern and southern sections of Heapham Road. This would provide an additional route for buses and help ease the severance associated with the limited crossing points over Thorndike Way.

7.6.8 4I - Extension of Bus Routes (Medium-Term)

Although the IntoTown bus routes provide frequent services to the town centre, they do not serve all areas of Gainsborough. This option would extend the IntoTown routes to ensure that all residential areas, Lea Road Station and other key destinations are served, providing a complete public transport network within Gainsborough.

7.6.9 4L - Bus Priority Junctions (Long-Term)

This option would provide bus priority measures at designated signalised junctions in order to reduce journey times and improve reliability for bus services using these junctions. This is considered a long-term option as congestion levels in Gainsborough are currently not adversely affecting bus reliability. However, if in the future the proposed Urban Extensions are developed, the forecast increases in traffic volumes in the town centre may result in bus priority measures being required at the key signalised junctions, to ensure bus services remain an attractive alternative to the private car.

7.6.10 4M - Bus Expressways (Long-Term)

This option would introduce designated bus expressways along the two main east to west routes within the town. This would involve introducing bus lanes at key points along the route in the form of bus priority measures at junctions along Thorndike Way and Corringham Road. These improvements may be introduced either through use of existing road space or road widening although land constraints are likely to limit the implementation of this option only to specific points on each corridor. Any improvements would be subject to a feasibility study to ensure that the most appropriate measures are put in place. This option would require close liaison with the bus operators to ensure bus services would utilise these new facilities.

7.7 Rail Services

7.7.1 5A - Lea Road Station Re-Development (Short-Term)

This option would improve the facilities at Lea Road Station, to encourage rail travel to and from Gainsborough. The station would be significantly upgraded to address the current rundown appearance and improve the passenger waiting experience. Improvements would include:

- ***Improved waiting and seating facilities on both platforms***
- ***Increased CCTV coverage of entire station area***
- ***Compliance with the Disability Discrimination Act***
- ***Provision of information for onward travel, maps of local area and tourist information***
- ***Installation of help points***
- ***Refreshment facilities***
- ***Resurfacing of parking area***
- ***Improved signage outside and directing to the station***

7.8 Options Not Included as part of Strategy

Following the qualitative appraisal process, a number of options have been excluded from the Emerging Transport Strategy. Table 7-A presents these options and the reasons for removal.

Option	Description of Option	Reason for Removal
1B - Car Park Guidance System	Provision of electronic car park guidance system on the main access routes into Gainsborough to advise of available spaces	This option did not score highly during the appraisal process and car park capacity is not a significant issues in Gainsborough
1G – Connect Heapham Road to Thorndike Way	To provide access for general traffic to the northern section of Heapham Road	Option 4C proposes to provide access for buses only, promoting travel by public transport as opposed to the private car and as a result is included in the Emerging Strategy
4F – Shuttle Bus to Lea Road Station	Provide a shuttle bus to connect the northern areas of Gainsborough to Lea Road Station	Rather than providing a dedicated shuttle bus, extensions to existing routes (Option 4I) would also serve Lea Road Station
4K – Shuttle Bus to Robin Hood Airport	Provide a shuttle bus service to Robin Hood Airport from Gainsborough	Planning permission exists for a new rail station to serve Robin Hood Airport on the Lincoln – Gainsborough Lea Road – Doncaster line

Table 7-A Options Removed from Emerging Strategy following Qualitative Appraisal

7.9 Alignment of Strategy with CIF Business Case

It is important to demonstrate that this Emerging Transport Strategy is in alignment with the CIF Business Case. Within the CIF Business Case, a number of transport improvement schemes in Gainsborough were identified. These were:

- ***Lea Road Station Improvements***
- ***Key Junction Improvements***
- ***Cycle / Pedestrian Links – Community Travel Zones***
- ***Improving Bus Station and Facilities***
- ***Public Transport Infrastructure***

These five transport improvements have been extensively covered in this document through the option packages, which demonstrates that the Transport Strategy is fully aligned with the improvements set out in the CIF Business Case.

7.10 Transport Strategy Mode Shift Impact

In July 2005, the Department for Transport published, 'Smarter Choices – Changing the way we travel'. This report was commissioned to evaluate the results from the 'Sustainable Travel Towns' - Darlington, Peterborough and Worcester. These towns implemented packages of 'Smarter Choice' measures, which resulted in increases in cycling, walking and bus use, and decreases in car use. The assessment covered a four year period, beginning in 2004 and ending in 2008.

Smarter Choices have been effective in reducing car use, principally by overcoming barriers in terms of attitudes and information to using more sustainable modes of transport. The research authors suggested that an intensive programme of 'Smarter Choices' over a 10 year period could reduce urban peak hour traffic by up to 21% and off-peak by 13%.

7.11 Smarter Choices for Gainsborough

Gainsborough is an ideal size for these 'Smarter Choice' schemes to have an overarching impact on the population as a whole. To achieve the maximum level of mode shift, the Transport Strategy packages have been developed to focus heavily on some of the measures that have been successfully implemented in the case of the 'Sustainable Travel Towns'.

7.12 Anticipated Modal Change for Gainsborough

It is anticipated that car trips travelling wholly within the town will be reduced by 10% in 2023 as a result of the implementation of the Transport Strategy. The full Strategy should be implemented by 2037 and, therefore, it is assumed that a reduction of 18% will be achieved in 2037 and 2051. A further 1% modal shift is anticipated for trips which either start or end outside of Gainsborough in 2037 and 2051, in order to account for improvements in rail and bus station facilities.

8 Public Consultation

8.1 Introduction

This chapter sets out the process and results of the public and stakeholder consultation on the Emerging Strategy, which was undertaken during June and July 2010.

8.2 Public Consultation in the Study Process

The public consultation is an important part of the Strategy development process. It is crucial that the views of the public on the options for change are known and taken into account, to ensure that the resulting Strategy has public ownership and support. Under the Local Government Act 2000, Public Consultation is a statutory requirement for all government schemes.

8.3 Aims of the Public Consultation

The objectives of the public consultation are:

- ***To inform the public and stakeholders of the study process***
- ***To gain input from the public and stakeholders regarding the nature of the draft Strategy and the prioritisation of the various options***
- ***To ensure that the study process is transparent and complies with current guidance***

8.4 Methodology

The Public and Stakeholder Consultation exercise broadly consisted of information provision through a variety of media and the provision of various opportunities to provide feedback.

Leaflet and Questionnaire

A key part of the process was the distribution of a leaflet and questionnaire. The leaflet described the background to the study and the options for change being considered for inclusion in the Transport Strategy for Gainsborough. The questionnaire asked the public and stakeholders to tick the three options for change they would most like to see happen in Gainsborough. This ‘closed’ question was supported by an ‘open’ question, allowing the public and stakeholders an opportunity to provide any comments they may have on the study.

Public Exhibition

A public exhibition was also a key part of this process. Its purpose was to provide members of the public and interested parties with:

- ***Information on the study***
- ***An opportunity to ask the study team any questions and to express their views in person***
- ***An opportunity to provide feedback on the information presented by completing a questionnaire, writing a comment in the comments book or through other forms of correspondence***

The exhibition was held in the Lincolnshire County Council Exhibition Bus parked at Marshall's Yard on Friday 25th June 2010 and at the Market in the Guildhall Car Park on Saturday 26th June 2010.

Press Release and Local Media Coverage

An initial press release was issued on 8th February 2010 advising of the commencement of the study and what it aimed to achieve. The public were then advised of the public consultation, and particularly the public exhibitions, via a variety of means:

- ***An advert was printed in the Gainsborough Target issued on 18th and 25th June 2010.***
- ***A press release was issued to the media by Lincolnshire County Council supported by a Press Briefing on 24th June 2010.***
- ***Posters were issued to a variety of public buildings, including Libraries, local shops, post offices and community facilities, to further publicise the events.***

Website

A new page of the Lincolnshire County Council website was set up within the Transport, Travel and Roads/Transport Studies section to provide information specifically on the Gainsborough Transport Study. This information comprised a copy of the leaflet, questionnaire and exhibition display boards. It was also possible to complete the questionnaire on-line. By the end of the consultation period (23rd July 2010), this section of the website had received approximately 190 visits.

Attendance and Feedback

It was estimated that approximately 380 members of the public looked at some aspect of the Public Exhibition over the two day period.

Feedback from the public was received via a variety of means:

- ***Questionnaires were the main source of feedback. 414 were received in total.***
- ***Comments were written down in the Comments Book at the Public Exhibition.***
- ***Letters and e-mails have been sent to Lincolnshire County Council by members of the public using the dedicated postal and e-mail addresses provided in the leaflet.***

Stakeholder Group

Leaflets and questionnaires were sent out to the members of the Stakeholder Reference Group for the study. For the purposes of this stage of the public consultation process, schools and colleges were added to the stakeholder list to ensure the views of younger people in Gainsborough were gathered.

8.5 Questionnaire Results

The questionnaire was designed to obtain the views of the public on the options for change being considered for inclusion in the Gainsborough Transport Strategy.

In total, exactly 400 paper questionnaires were received by the close of the consultation period on 23rd July 2010. It is broadly estimated that approximately 5000 paper copies of the leaflet and questionnaire were distributed to the public in total. This equated to an 8% response rate. A further 14 questionnaires were completed online.

Almost half of the respondents were in the 45-64 age group, and a third were in the 65-84 age group. More than a quarter of those who responded had a long standing illness, disability or infirmity, with most of those having their activities limited due to this.

8.5.1 Questionnaire Responses

Question 1: 'Please place a tick next to the three options you would most like to see happen in Gainsborough'

This closed question asked respondents to tick 3 of 18 boxes indicating which of the following transport improvements they would like to see in Gainsborough.

A summary of responses received to Question 1 is given in Table 8-A below.

Response	Number of Respondents	% of Total Number of Respondents*
1. Better information to help inform travel choices	33	8%
2. Further road safety improvements	63	15%
3. Ensure new development is supported by good quality transport facilities	103	25%
4. Better facilities and routes for pedestrians	46	11%
5. Better routes and facilities for cyclists	55	13%
6. Improved connectivity to provide continuous routes and facilities for pedestrians and cyclists	43	10%
7. Improvements to car parks to increase security and safety	37	9%
8. Better control of on-street parking to maintain clear roads	89	21%
9. Specific junction capacity improvements	53	13%
10. Planning for better management of HGV routes	58	14%
11. Longer Term Upgrade to The Belt Road	71	17%
12. Relocation of the Bus Station to a more central location at the Roseway Car Park	39	9%
13. Improvements to the Bus Station if Roseway Car Park is not viable	55	13%
14. Priority for Buses at junctions	11	3%
15. More bus routes and extended timetables	135	33%
16. Provision of real time passenger information	22	5%
17. Improve Lea Road Station environment and facilities	168	41%
18. Improve Public Transport connectivity	84	20%

* The percentages total to more than 100% as respondents were asked to tick three boxes.

Table 8-A Response to Question 1

The results shown numerically in Table 8-A reveal that the most popular options were:

17: 'Improve Lea Road Station environment and facilities' (41%);
15: 'More bus routes and extended timetables' (33%);
3: 'Ensure new development is supported by good quality transport facilities' (25%).

The least popular options were:

16: 'Provision of real time passenger information' (5%)
14: 'Priority for buses at junctions' (3%).

While the support for improved public transport was strong, it is thought that the concept and benefits of 'real time passenger information' could not be communicated in detail in the questionnaire and leaflet and hence scored poorly in the surveys. It is thought that the lack of support for providing buses with priority at junctions is the lack of current need, as the levels of delay in the town are very low. This option would have greater relevance in the longer term as the town grows.

Question 2: 'If you have any other comments on the Gainsborough Transport Study, please write them here'

The purpose of this open question was to give the public the opportunity to provide Lincolnshire County Council with their general comments on the transport situation in Gainsborough, the study itself, and to raise any issues they felt are important. It was necessary then to code the responses into the specific categories below:

Comments on walking routes or pedestrian issues

32 comments (8%) fell into this category. They included:

- ***Footpath condition***
- ***Safety of subway conditions***
- ***Cyclist riding on the pavement***

Comments on cycling provision or issues

23 comments (6%) fell into this category. They included:

- ***Lack of cycling facilities throughout the town***
- ***Quality and safety concerns of the existing facilities.***

Comments on physical accessibility for those with reduced mobility

8 comments (2%) fell into this category. They included:

- ***Inability to access all public transport vehicles with pushchairs and wheelchairs.***
- ***Accessibility through the town via mobility scooters.***

Comments on relocation of the bus station

24 comments (6%) fell into this category. They included:

- ***Comments regarding relocation of the bus station were negative***
- ***Existing location being seen as convenient***

Comments on bus station facilities

11 comments (3%) fell into this category. They included:

- ***Extra provision of shelters to cover all passengers at all stands***
- ***Requested toilet facilities at the station.***
- ***The new station at Retford was seen as an ideal standard***

Comments on bus services

81 comments (20%) fell into this category. They included:

- ***Lack of services during weekends and evenings***
- ***Lack of peak time services***
- ***Poor interconnectivity of bus services with rail services***
- ***General lack of services between central Gainsborough and Lea Road Station***
- ***Improved direct services to nearby towns and cities***
- ***Lack of bus services to local schools***

Comments on the train stations

33 comments (8%) fell into this category. These included:

- ***Toilets, staffing, lighting/security, waiting areas and general appearance at Lea Road Station***

Comments on train services

25 comments (6%) fell into this category. These included

- ***Central Station is currently underutilised, given its location***

Comments on parking

27 comments (7%) fell into this category. These included:

- ***The lack of available parking in central Gainsborough***
- ***The lack of available parking in Lea Road Station***
- ***Problems caused by commercial vehicles parking in residential areas***

Comments on HGVs

17 comments (4%) fell into this category. These included:

- ***Suggestions to provide HGV specific routes***
- ***Various problem locations noted at bridges and residential roads***

Comments on road safety

31 comments (8%) fell into this category. These included:

- ***Concerns over the speed limit on The Avenue (with a 30mph limit suggested by some)***
- ***Concerns at the junction of The Avenue and Corringham Road (with a roundabout suggested by some)***
- ***Improved pedestrian facilities at various points***

Comments on highway improvements

56 comments (14%) fell into this category. These included:

- ***A perceived need for an additional river crossing, which some respondents suggested would alleviate HGV routing issues as well as improving traffic flow to the west***
- ***A north-south bypass for the town***
- ***Issues at the mini-roundabout at North Street/ Roseway due to driver behaviour***
- ***A filter phase for right turners onto the Trent Bridge would improve journey times***

Any other comments not included above

29 comments (7%) fell into this category. The comments were varied and spread over a broad range of topics, which can be categorised as follows:

- ***Road maintenance (3 comments)***
- ***The expansion of the town (9 comments)***
- ***The study, consultation or questionnaire (6 comments)***
- ***Public transport information (3 comments)***

8.6 Conclusion

The public consultation exercise was considered to have been a success in informing the public of the Study and generating views. The public exhibition was reasonably well attended and generated an 8% questionnaire response rate.

There appears to be support for the sustainably-led Strategy with support for bus and rail improvements featuring strongly in the response. There is also support for the majority of the specific measures outlined in the consultation material. These views have helped to refine the Emerging Strategy towards a full post-consultation Final Transport Strategy.

9 Final Transport Strategy

9.1 Introduction

As set out in the preceding chapters of this report, a review of the baseline transport conditions and policy objectives have helped to establish five key problem and opportunity themes to aid the development of a Strategy that addresses the key issues relevant to Gainsborough and is in line with local, regional and national policy. Appropriate measures have been identified in relation to the five problem, issue and opportunity themes of Walking and Cycling, Bus Services, Congestion, Rail Services and Accessibility and Severance.

9.2 Final Strategy Post-Consultation Refinements

The results from the consultation showed strong support for a sustainably-led Strategy which focuses upon public transport, walking and cycling measures. The consultation has helped to guide the Strategy in key areas, and a number of important decisions can be made on the direction and content of the Strategy. This chapter describes the changes and refinements that were made to the Emerging Strategy and hence confirms the Final Strategy.

A set of maps are presented in Appendix C which summarise the components of the Final Strategy packages. These maps reflect the feedback gained from the consultation.

9.2.1 Public Transport Option Refinements

Option 5B - Lea Road Station Re-Development

The consultation feedback revealed the most popular option to be the improvement in the Lea Road Station environment and facilities. The Emerging Strategy considered two options for the improvement at Lea Road, a comprehensive improvement, involving land-take and improved car parking provision, and a simpler option. The Final Strategy includes Option 5B, the full improvement involving land-take. Option 5A is therefore removed from the Strategy. The Lea Road re-development option therefore includes:

- ***Improved waiting and seating facilities on both platforms***
- ***Increased CCTV coverage of entire train station area***
- ***Compliance with the Disability Discrimination Act***
- ***Provision of information for onward travel, maps of local area and tourist information***
- ***Installation of help points***
- ***Refreshment facilities***
- ***Resurfacing of parking area***
- ***Improved signage outside and directing to the station***

Option 4A - Bus Station Relocation/Upgrade

The Emerging Strategy consultation material included two options for the Bus Station; to relocate (Option 4A) or to upgrade the existing facility (Option 4B). Feedback from the public consultation identified a strong negative response to the option for relocation of the Bus Station to the Roseway Car Park (Option 4A).

Improvements to bus station facilities will now focus on upgrading the current Bus Station located at Heaton Street. Option 4B is therefore included as part of the final Strategy.

Following the refinements, as directed by the feedback from the consultation, the final table of transport improvement measures is presented below.

Option	Description
1A	Examine the potential to re-design on-street parking along Trinity Street and provide alternative parking
1C	Introduce a freight management plan
1D	Optimise the traffic signals located on the Flood Road/ Bridge Street junction on Friday afternoons to assist east-west movement
1E	Review parking provision and pricing to encourage sustainable travel
1F	Upgrade The Belt Road to serve as a distributor road linking the Corringham Road and Heapham Road Industrial Estates
1H	Implement targeted junction improvements which will be used to relieve congestion
1I	Convert the main road through the town centre (Beaumont Street) to a more pedestrian friendly layout
1J	Improve public car parks with increased CCTV coverage and general improvement in standards
1K	Introduce the permanent operation of a taxi rank on Lord St / Parnell St
2A	Establish 20 mph zones outside schools and in the town centre
2B	Identify appropriate areas and types of interventions required to improve road safety
2C	Improve the quality of cyclist and pedestrian route maps supplied to the public increasing transport information
2D	Implement a comprehensive publicity campaign with on-going promotions to raise public awareness of sustainable transport options
2E	Promote personalised travel planning by contacting individuals to provide information and advice on travel options
2F	Co-operate with local schools to produce travel plans and promote sustainable travel to school
2G	Co-operate with local employers to produce travel plans and promote sustainable travel to work
2H	Ensure that Section 106 agreements are applied to new developments to obtain funding for appropriate transport measures
2I	Ensure that the Northern and Eastern Urban Extensions are well planned for land use
3A	Install cycle lanes in both directions on busier roads to connect to existing cycle lanes and serve cyclist desire lines
3B	Install secure cycle storage and cycle parking stands at key destinations throughout the town centre
3C	Implement public realm improvements introducing high quality paving and street furniture to the key pedestrian routes in Gainsborough
3D	Carry out an audit to ensure compliance with the Disability and Discrimination Act
3E	Develop and improve the riverside area
3F	Introduce a green corridor of pedestrian and cycle routes
4B	Upgrade the bus station to make the facility more attractive to use
4C	Link the northern section of Heapham Road to the Thorndike Way dual carriageway for buses
4D	Introduce Smartcard ticketing for bus fares
4E	Provide a real-time bus information system at the bus station and at key stops throughout the town
4G	Provide more evening and Sunday bus services on Into Town and regional routes

4H	Upgrade bus stops to a consistent standard throughout town
4I	Extend the IntoTown services to areas which are not currently part of the bus network
4J	Provide onboard information to make travel by bus more attractive
4L	Provide a series of bus priority measures at designated signalised junctions
4M	Introduce two designated bus expressways
5B	Improve Lea Road Station with land take

Table 9-A Final Table of Transport Improvement Measures

9.2.2 Highway and Road Safety Improvements

Highway and road safety improvements were considered an option as part of the Emerging Strategy in Chapter 7. There was a positive response to this option during the consultation process. This option has been considered further following the consultation, and specific schemes have emerged. The improvements included in the final Strategy are listed below:

Speed Limit Reduction on The Avenue to 30mph

The speed limit on The Avenue heading north from the junction with Dunster Road is currently an area of national speed limit. A new area of housing has been constructed with access to this section of road and the high speed limit is currently perceived as a danger by the residents. Reducing the speed limit in this area will help to make access to the new development safer. Access to those wanting to cross the road to make use of the leisure centre may also benefit from a reduced speed of vehicles when crossing.

Summer Hill / The Avenue Junction Safety Improvement

Currently at this location there are a number of conflicting movements and poor sight lines making this junction potentially unsafe. The Highway Authority are examining options to improve the junction and to mitigate safety issues.

Linking Heapham Road North with Thorndike Way

The Highway Authority, in accordance with Option 4C, are examining the potential for improving bus accessibility along Heapham Road, providing better links between the town centre, the industrial areas in the South-east of the town and the Southern Urban Extension. The possibility of improving the junction further to provide limited local access benefits for nearby residential areas is being considered.

10 Transport Strategy Modelling Results

10.1 Scenario Overview

The scenarios modelled for testing the Final Transport Strategy were developed as per the Traffic Forecasting Assumptions (See Chapter 5). The results show the levels of congestion that would prevail in the town in future, and the benefits gained by the implementation of the Final Transport Strategy including a package of relevant highway improvements for each of the Urban Extensions.

10.2 Modal Split

In order to calculate the modal split as a result of the Strategy, the reduction in car trips was applied as described in Section 7.12 of this report.

The change in the modal split due to implementation of the Strategy is shown in Tables 10-A and 10-B below.

Mode	2023		2037		2051	
	Forecast	+ Strategy	Forecast	+ Strategy	Forecast	+ Strategy
Car	69.7%	62.9%	71.5%	60.5%	70.8%	59.4%
Rail	0.3%	0.4%	0.3%	0.4%	0.2%	0.3%
Walk/ Cycle	18.8%	22.7%	18.7%	25.9%	20.7%	28.7%
Bus	11.2%	14.0%	9.5%	13.2%	8.2%	11.6%

Table 10-A Modal Split for Whole of Gainsborough

Mode	Southern Extension Only		Northern Extension Only		Eastern Extension Only	
	Forecast	+ Strategy	Forecast	+ Strategy	Forecast	+ Strategy
Car	65.4%	58.1%	69.6%	61.1%	62.7%	51.4%
Rail	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%
Walk/ Cycle	22.9%	26.3%	21.6%	25.3%	31.3%	40.3%
Bus	11.5%	15.4%	8.8%	13.6%	5.9%	8.4%

Table 10-B Modal Split for Urban Extensions Only

The modal split data show a high proportion of walking and cycling, particularly for the eastern extension. This is due to a significant proportion of residents in the Eastern Extension walking to and from the employment and education opportunities in the other Urban Extensions and the expansion of the Heapham Road industrial estate.

10.3 Road Network Performance

The network performance is presented below in Table 10-C, showing the travel time, travel distance and average speed both with and without the Strategy implemented. The data show that journey times and distances are reduced and average speed is improved with the Strategy implemented.

Year	Total Travel Time (vehicle hours)		Total Distance Travelled (vehicle km)		Average Speed (kph)	
	Forecast	Strategy	Forecast	Strategy	Forecast	Strategy
- AM Peak -						
2023	915	853	36374	34875	**43.5**	**43.8**
2037	1131	931	43849	38527	**43.0**	**43.5**
2051	1271	1032	47962	41961	**42.6**	**43.2**
- PM Peak -						
2023	872	830	34844	33330	**41.8**	**42.0**
2037	1086	886	42186	36685	**41.2**	**41.8**
2051	1206	976	45993	39816	**40.9**	**41.5**

Table 10-C Network Performance

- ***Total Time Travelled (Vehicle Hours) - the cumulative travel time for all journeys undertaken within and around Gainsborough in the peak hour.***
- ***Total Distance Travelled (Vehicle km) - the cumulative distance travelled for all journeys undertaken within and around Gainsborough in the peak hour.***
- ***Average Speed (km/h) - the average vehicle speed on the road network within and around Gainsborough for all journeys undertaken in the peak hour. In order to represent the impact on the network independent of the amount of traffic assigned these speeds were determined from the changes in current travel times throughout the network.***

10.4 Junction Performance

A number of the key junctions in Gainsborough have been analysed for the various scenarios considered. A junction has been considered to be over capacity if the highest volume / capacity ratio for any arm is greater than 85%.

Table 10-D below shows the number of junctions where the performance is within capacity as a result of the Strategy. The junctions included in the assessment are presented in Appendix B.

		2023	2037	2051
Without Strategy	Junctions Within Capacity	11	7	6
	Junctions Over Capacity	6	11	12
With Strategy	Junctions Within Capacity	14	14	11
	Junctions Over Capacity	3	4	7
Improvement		***3***	***7***	***5***

Table 10-D Junctions Within Capacity from Strategy Implementation

Tables 10-E and 10-F summarise the results of the junction assessment. Figures 10-A to 10-C describe the results of the junction assessments in a visual format. This shows the change in junction performance without the Strategy to the junction performance with the Strategy implemented.

No	Junction Assessed	2023 Southern		2037 Southern & Northern		2051 All Extensions	
		V/C	Comment	V/C	Comment	V/C	Comment
1	Thorndike Way/Ashcroft Road (roundabout)	100%	Bridge Road (west approach) is over capacity	98%	Bridge Road is over capacity	107%	Bridge Road and Ashcroft Road are over capacity
2	Bridge Street/The Flood Road	88%	Bridge Street (north approach) and The Flood Road are over capacity	89%	Bridge Street (north approach), Bridge Road and The Flood Road are over capacity	90%	Bridge Street (north approach), Bridge Road and The Flood Road are over capacity
3	Lea Road/Ashcroft Road (roundabout)	88%	Lea Rd (south approach) is over capacity	87%	Lea Road is over capacity	93%	Lea Road (northbound) is over capacity
4	Foxby Lane / Lea Road (roundabout)	82%	Lea Rd (south approach) is nearing capacity	84%	Lea Road (northbound) is nearing capacity	90%	Lea Road (northbound) is over capacity
5	Middlefield Lane / Southern Extension access (roundabout)	40%	OK	42%	OK	53%	OK
6	Foxby Lane / Southern Extension 2nd access (roundabout)	61%	OK	57%	OK	60%	OK
7	Foxby Lane / Heapham Road (roundabout)	74%	OK	77%	OK	96%	Foxby Lane is over capacity
8	Heapham Road/Industrial Park Access	23%	OK	25%	OK	28%	OK
9	Heapham Road/Thorndike Way	77%	OK	71%	OK	80%	OK
10	Thorndike Way/Access to new Heapham Industrial Park	57%	OK	79%	OK	81%	Thorndike Way is nearing capacity
11	Thorndike Way/Corringham Road	41%	OK	72%	OK	83%	Corringham Road is nearing capacity
12	Corringham Road/Access to Northern Urban Extension		N/A	74%	Delays on Corringham Road	91%	Urban Extension Exit is over capacity
13	Corringham Road/The Belt Road	44%	OK	82%	Urban Extension Exit is nearing capacity	80%	OK
14	Spital Hill / Cox's Hill	64%	OK	72%	OK	79%	OK
15	Spital Terrace/North Street (roundabout)	38%	OK	52%	OK	50%	OK
16	Trinity Street/Colville Terrace (Tesco)	61%	Delays on Heaton St	69%	OK	63%	OK
17	North Street / Church Street	17%	OK	15%	OK	15%	OK
18	Blyton Road / The Little Belt / Front Street	49%	OK	45%	OK*	62%	OK*

**** Link between The Little Belt and Blyton Road (A159) included in 2037 and 2051 scenarios***

Table 10-E AM Peak Junction Assessment

No	Junction Assessed	2023 Southern		2037 Southern & Northern		2051 All Extensions	
		V/C	Comment	V/C	Comment	V/C	Comment
1	Thorndike Way/Ashcroft Road (roundabout)	76%	OK	83%	Bridge Road is nearing capacity	97%	Bridge Road and Trinity Street are over capacity
2	Bridge Street/The Flood Road	87%	Bridge Road (east approach) is over capacity	85%	Bridge Street (north approach), Bridge Road and The Flood Road are at capacity	95%	Bridge Street (north approach) and The Flood Road are over capacity
3	Lea Road/Ashcroft Road (roundabout)	56%	OK	63%	OK	65%	OK
4	Foxby Lane / Lea Road (roundabout)	69%	OK	89%	Lea Road (north approach) is over capacity	87%	Lea Road (north approach) is over capacity
5	Middlefield Lane / Southern Extension access (roundabout)	48%	OK	54%	OK	52%	OK
6	Foxby Lane / Southern Extension 2nd access (roundabout)	48%	OK	51%	OK	55%	OK
7	Foxby Lane / Heapham Road (roundabout)	74%	OK	70%	OK	79%	OK
8	Heapham Road/Industrial Park Access	65%	High delays on industrial estate exit	56%	OK	74%	OK
9	Heapham Road/Thorndike Way	82%	Thorndike Way (east approach) and Heapham Road are nearing capacity	81%	Thorndike Way (east and west approaches) are nearing capacity	83%	Thorndike Way (north approach) and Thorndike Way (south approach) are nearing capacity
10	Thorndike Way/Access to new Heapham Industrial Park	66%	OK	72%	OK	74%	OK
11	Thorndike Way/Corringham Road	36%	OK	57%	OK	71%	OK
12	Corringham Road/Access to Northern Urban Extension		N/A	58%	OK	82%	Corringham Road east approach is nearing capacity
13	Corringham Road/The Belt Road	24%	OK	59%	OK	73%	OK
14	Spital Hill / Cox's Hill	44%	Delays on Cox's Hill	33%	OK	39%	OK
15	Spital Terrace/North Street (roundabout)	53%	OK	50%	OK	54%	OK
16	Trinity Street/Colville Terrace (Tesco)	64%	Delays on exit from Tesco	72%	Delays on exit from Tesco	93%	Tesco exit is over capacity
17	North Street / Church Street	12%	OK	10%	OK	15%	OK
18	Blyton Road / The Little Belt / Front Street	35%	OK	42%	OK*	56%	OK*

**** The Thorndike Way / Corringham Road junction is signalised in the 2037 and 2051 forecast scenarios***

***** Link between The Little Belt and Blyton Road (A159) included in 2037 and 2051 scenarios***

Table 10-F PM Peak Junction Assessment

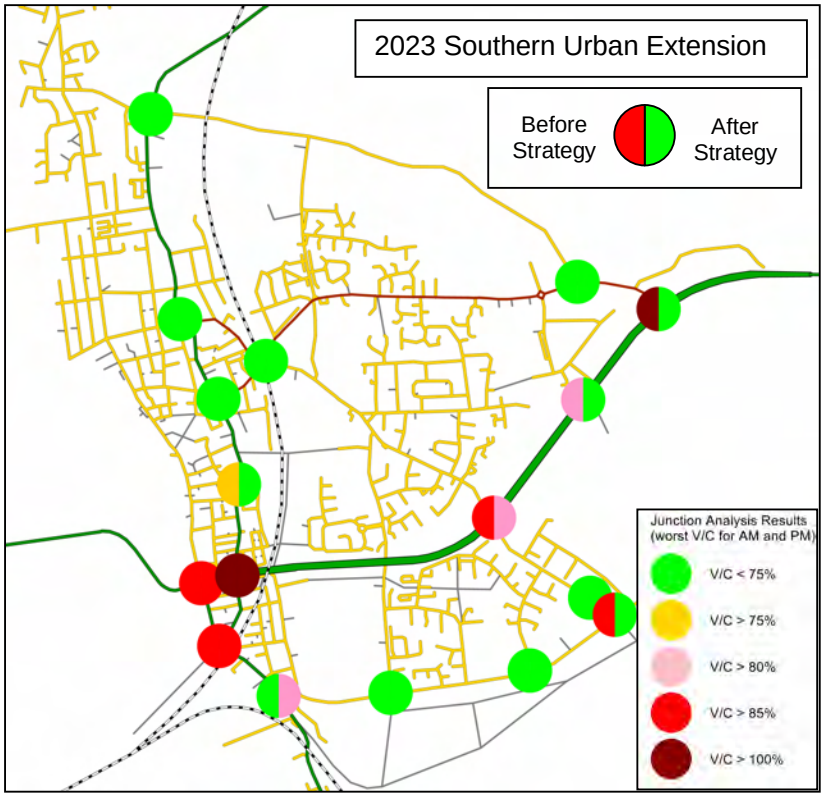


Figure 10-A 2023 Southern Urban Extension Junction Assessment Results

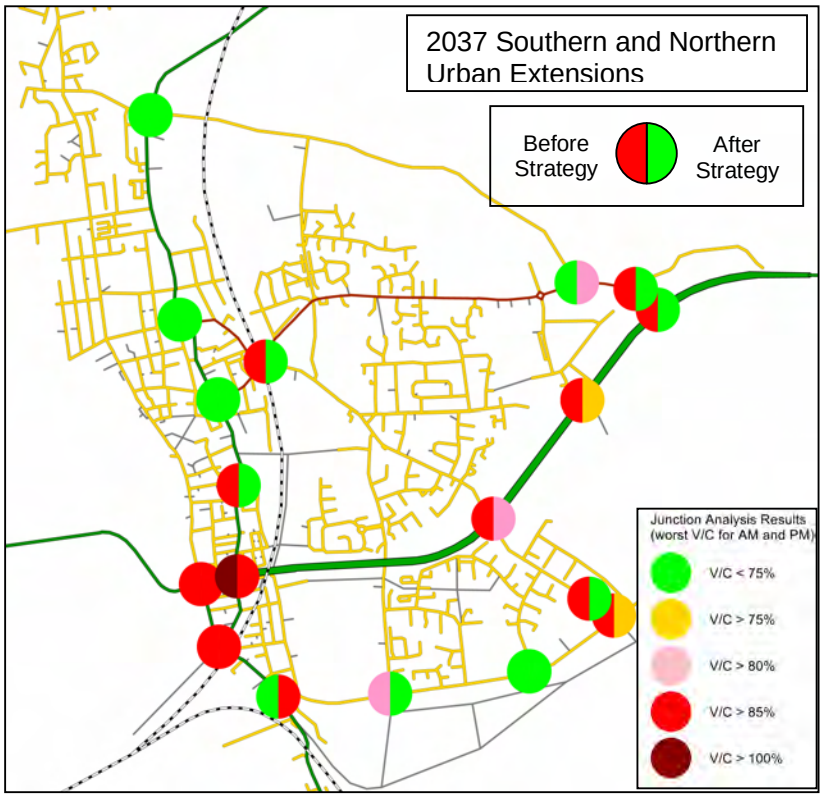


Figure 10-B 2037 Southern and Northern Urban Extensions Junction Assessment Results

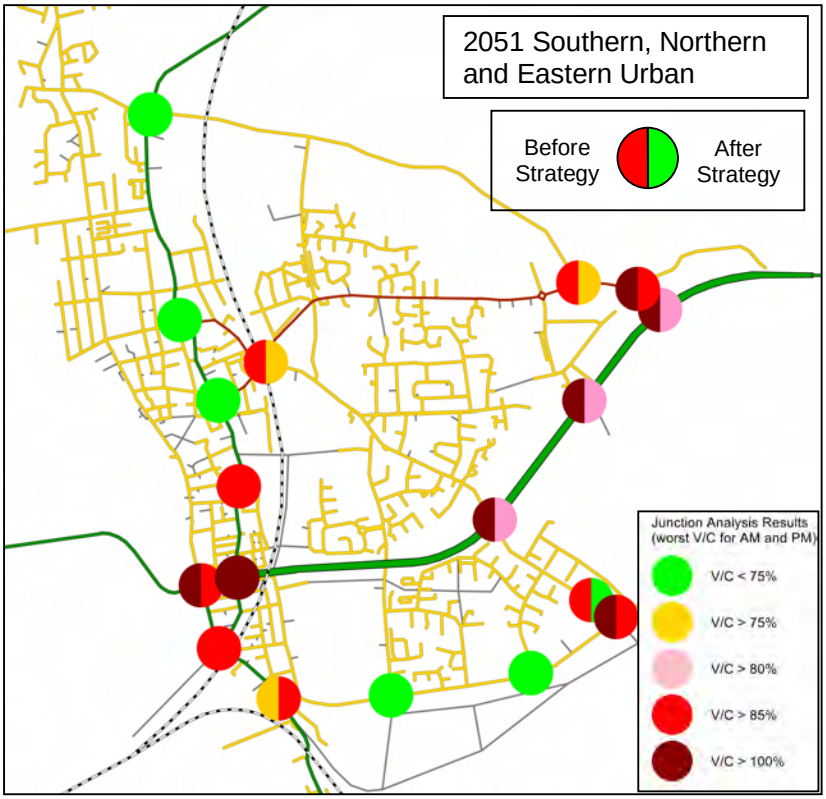


Figure 10-C 2051 All Urban Extensions Junction Assessment Results

10.4.1 2023 Southern Extension Scenario

The junctions of Heapham Road and Foxby Lane and Thorndike Way and Heapham Road operate within capacity as a result of the Strategy, and other key junctions are improved in performance. Only one junction operates in excess of 100% V/C during peak times by 2051. However, there is no significant improvement in performance at the junctions on Lea Road at The Flood Road and Ashcroft Road and at Thorndike Way and Trinity Street. The proposed roundabout at Lea Road and Foxby Lane would just be approaching its theoretical capacity.

10.4.2 2037 Southern and Northern Extensions Scenario

The Strategy has a significant impact on junction performance in 2037 when the Northern Extension is introduced, with seven junctions operating within capacity compared with not implementing the Strategy, and improvements in performance on junctions operating under capacity.

10.4.3 2051 Southern, Northern and Eastern Urban Extensions Scenario

There are six junctions which are estimated to be within capacity with the Strategy implemented. Three junctions would experience an improvement in performance, although remain over capacity.

10.5 Summary of Results

The Transport Strategy modelling results show that there is a strong benefit in carrying out the full Strategy through until 2051, as there are only a small number of junctions that exceed capacity in the final forecast year. The Final Strategy therefore

shows that even in the very long-term the transportation system will function well, with an effective Transport Strategy mitigating the impact of the growth of the town.

11 Delivery and Monitoring

11.1 Introduction

The purpose of this Chapter is to set out the possible funding sources and timescale for the transport improvement measures that would deliver the Strategy. This Chapter also outlines an approach for monitoring the performance of the Strategy, once implemented.

11.2 Delivery

11.2.1 Public Funding Context

The Coalition Government has announced significant cuts in public spending in order to manage the national debt. The mechanism for acquiring funding is also uncertain at this time. Clearly the approach to funding the various elements of the Strategy will be affected in the short term by budgetary decisions made by the Government over the coming months.

11.2.2 Funding Transport Schemes

The following capital and revenue budgets have been identified as confirmed or potential sources of funding for the delivery of schemes that would achieve the objectives of the Transport Strategy.

Community Infrastructure Fund (CIF)

LCC have confirmed that the £1.85m funding received from CIF is guaranteed for Gainsborough. This budget must be spent by end of March 2011 and LCC are delivering a series of relatively small scale transportation infrastructure improvements in accordance with the Transport Strategy.

Growth Area Fund (GAF)

The future of these funds should be viewed as uncertain pending the Comprehensive Spending Review.

Local Transport Plan (LTP)

It is highly likely that LTP funding will be reduced following the Comprehensive Spending Review.

Developer Funding (Section 106, 278)

The size of the contribution is related to the scale of the development, its impact on the local transport system and the strength of the commercial case for the development. This may give the best prospects for funding individual improvements associated with new developments.

Sustrans

This should be seen as a significant but minor contributor to larger schemes or programmes involving cycling improvements.

Bus Operating Companies

The operator will invest in vehicle numbers and quality with the Local Authority investing to improve the public transport network where such measures have a significant business case and support wider transport policy and Strategy.

Homes and Communities Agency (HCA)

Funding has been on a site by site basis with a brief business case to justify the funds needed.

11.3 Strategy Funding Sources

The transport improvement measures included in the Gainsborough Transport Strategy are set out below in Table 11-A together with the timescale for implementation and possible funding sources.

Transport Improvement Measure	Timescale	Primary Funding Source	Secondary Funding Sources
Congestion		***See Key**	***See Key**
1A – Re-design of On-Street Parking on Trinity Street	Short-term	GAF	
1C - Freight Management Plan	Short-term	LTP	
1D - Friday Traffic Signal Plan	Short-term	CIF	LTP / GAF
1E - Parking Review	Short-term	LTP	
1K - Parking CCTV Improvements	Short-term	LTP	GAF
1L - Taxi Rank	Short-term	LTP	
1I - Junction Improvements	Short-term and as necessary	Dev	CIF
1F - Belt Road Upgrade	Long-term	Dev	GAF
1J - Town Centre Improvements for Pedestrians	Long-term	LTP	GAF
Accessibility and Severance			
2A - 20mph zones	Short-term	LTP	
2B - Road Safety Improvements	Short-term	LTP	
2C - Transport Information	Short-term	LTP	Dev
2D - Sustainable Transport Promotion	Short-term	LTP	Sustrans
2E - Personalised Travel Planning	Short-term	LTP	Dev
2F - School Travel Planning	Short-term	LTP	
2G - Workplace Travel Planning	Short-term	LTP	
2H - Ensure all Developments Provide Section 106 Contributions	Short-term	No cost associated	
2I - Land Use Planning	Long-term	No cost associated	
Provision for Cycling and Walking			
3A - Cycle Infrastructure Improvements	Short-term	CIF	Sustrans
3B - Cycle Parking Provision	Short-term	CIF	
3C - Walking Infrastructure Improvements	Short-term	CIF	Sustrans
3D - DDA audit	Short-term	LTP	GAF
3E - Riverside	Short-term	LTP	
3F - Recreational Routes	Short-term	Dev	

Bus Services			
4C - Connect Heapham Road to Thorndike Way Bus Only	Short-term	CIF	
4E - Real-time Bus Information	Short-term	CIF	LTP / Bus / Dev / HCA
4G - Evening Bus Services	Short-term	LTP	Dev / Bus
4H - Improve Bus Stops	Short-term	CIF	LTP / Dev
4B - Bus Station Upgrade	Mid-term	LTP	CIF / Bus / Dev / HCA
4D - Smartcard ticketing	Mid-term	LTP	Bus / Dev / HCA
4I - Extension of Bus Routes	Mid-term	LTP	Dev / Bus
4L - Bus Priority Junctions	Long-term	GAF	Dev
4M - Bus Express Ways	Long-term	LTP	Bus / Dev / HCA
Rail Services			
5B - Lea Road Train Station Re-Development (Land Take)	Short-term	CIF	LTP / GAF

Table 11-A Strategy Funding Sources

*Key to Table 2-A	
Abbreviation	**Funding Source**
CIF	Community Infrastructure Fund
GAF	Growth Area Fund
LTP	Local Transport Plan
Dev	Developer Section 106 and Section 278 Contributions
Sustrans	Sustainable Transport Charity
Bus	Bus Operating Companies
HCA	Homes and Communities Agency Kickstart

11.4 Risk to Delivery

The majority of the transport improvement schemes included in the Strategy are low cost. The Strategy is, therefore, considered low risk. There are likely to be significant risks with funding from public funds following the Comprehensive Spending Review in autumn 2010, however, the Gainsborough Transport Strategy is a long-term plan and it can be expected that, during the course of the Strategy, the UK's economic position will improve.

11.5 Establishing Targets and Indicators

In order to monitor the performance of the Strategy, it will be necessary for the Local Highway Authority to set targets relating to traffic, public transport, walking and cycling, and transport network performance such as travel times. Interim targets should be established which would align with phases of major development.

11.5.1 Town-Wide Targets

LTP targets relating to managing congestion are to limit the increase in traffic on key roads, based on 12 hour flow volumes, to a particular percentage per annum. The volume of travel by different modes should be monitored in order to assess the performance of the Strategy and identify measures which are effective and those which are not.

Targets for public transport are to increase passenger satisfaction, achieving a set annual bus patronage and achieving particular percentages of buses arriving on time. There are no targets relating to rail use.

There is one target relating to cycling which is an increase in the annual level of cycling, however, there are no targets relating to walking.

Accessibility has a target of achieving a percentage of households within 30 minutes of a local centre or supermarket by public transport.

11.5.2 Urban Extension Targets

These targets should aim to minimise car use and maximise use of sustainable transport options. The targets should, therefore, include a specific limit on the number of car trips and targets for increasing use of bus, cycling and walking.

11.6 Data Collection

11.6.1 Town-Wide Data

Traffic counts at key locations in the town should be used to monitor traffic volumes. The locations should include the key approaches to the town and within and around the town centre.

Public transport patronage should be monitored by recording passenger numbers onboard the Into Town services, at the bus station and using rail services at Lea Road Station.

Walking and cycling should be monitored by pedestrian counts at suitable locations in the town centre and at the rail station, to monitor the total number of people arriving by these modes and to track changes over time.

11.6.2 Urban Extension Data

Traffic counts should be undertaken at the entrance and exits of the Urban Extension areas in order to monitor the level of car trips. Bus patronage should be surveyed as part of the town-wide Strategy monitoring. Walking and cycling should be surveyed through counts taken at the entrances and exits of the Extension areas, or through household surveys.

11.7 Feedback to the Strategy

Monitoring of the Strategy performance will form part of a feedback cycle. If the monitoring shows that an area of the Strategy is not having the desired impact then this will necessitate a review of the Strategy to implement any necessary changes.

12 Summary

Gainsborough has been appointed Growth Point status, under the previous Government's housing plan, which sets out a plan to double the size of Gainsborough. In order to develop the transport provision in the town, funding has been made available from the Community Infrastructure Fund (CIF) to improve sustainable transport services and facilities. The Transport Strategy measures detailed in this report are in line with the improvements and objectives set out in the CIF business case.

The development of the Gainsborough Transport Strategy involved a review of the existing transport conditions within the town to establish a baseline position under which transportation problems and options for improvement could be identified, against which the impact of the Transport Strategy can be assessed. Current and potential future issues associated with travelling to, from and within Gainsborough have been identified, taking into account the baseline review, information obtained from public and stakeholder consultation, a qualitative assessment of the town centre and data from the Gainsborough Transport Model. The key problems and opportunities for each mode of transport were highlighted and targeted options for improvement have been developed.

The initial set of transport options developed were subject to a sieving process taking into account feasibility, fundability and acceptability before undergoing the qualitative appraisal process. The remaining options were assessed based on their ability to tackle the key problem areas identified, to achieve policy objectives and to contribute to achieving the DaSTS goals. Options were then refined further and selected based on their appraisal scores for inclusion in the Emerging Transport Strategy for Gainsborough.

The Emerging Transport Strategy then underwent a number of consultation exercises to inform the development of the Final Strategy. This process sought to obtain and understand the views of the public and stakeholders on the potential options in order to gain feedback regarding the nature of the Emerging Strategy and the prioritisation of the various possible options within it.

The Final Transport Strategy has been developed alongside the feedback received from the consultation. This has helped to guide the Strategy in key areas, and a number of important decisions were made on the direction and content of the Strategy.

It is anticipated by 2037 and 2051, the full Strategy would be implemented and a modal change of 18% may be achievable for people travelling within Gainsborough. With the successful implementation of the Strategy the Gainsborough Transport System is forecast to work well, with the majority of junctions working within or close to capacity. The Transport Strategy will help to control the growth in traffic volumes and minimise the level of congestion in future, by providing a range of quality travel options for the town.

Appendix A National, Regional and Local Policy

National Policy

There were a range of national reports that examined. These included:

- ***The Eddington Transport Study: December 2006***
- ***Barker Report: December 2006***
- ***The Stern Review: October 2006***
- ***New Approach to Transport Appraisal (NATA): October 2007***
- ***Transport Analysis Guidance (WebTAG)***
- ***The Future of Transport – A Network for 2030: 2004***
- ***Guidance on Local Transport Reports: July 2009***

National Guidance: Planning

Guidance on National Planning was also consulted and examined in detail. These documents included:

- ***PPG1 – Planning Policy Statement 1: Delivering Sustainable Development: January 2005***
- ***Supplement to Planning Policy Statement 1: Planning and Climate Change: December 2007***
- ***PPG13 – Planning Policy Guidance Note 13 – Transport: March 2001***
- ***PPG3 – Planning Policy Statement 3 (PPS3): November 2006***

National Guidance: Sustainable Transport

Guidance on Sustainable Transport was then examined in detail. These documents included:

- ***Towards a Sustainable Transport System: Supporting Economic Growth in Low Carbon World: 2007***
- ***Delivering a Sustainable Transport System (DaSTS)***

Regional Policy

There are a range of policy reports for the East Midlands. The documents reviewed are:

- ***Regional Spatial Strategy for the East Midlands (RSS8): March 2009***
- ***East Midlands Regional Plan: March 2009***
- ***A flourishing region: Regional Economic Strategy for the East Midlands 2006-2020***
- ***East Midlands Regional Housing Strategy 2008-2016: November 2008***

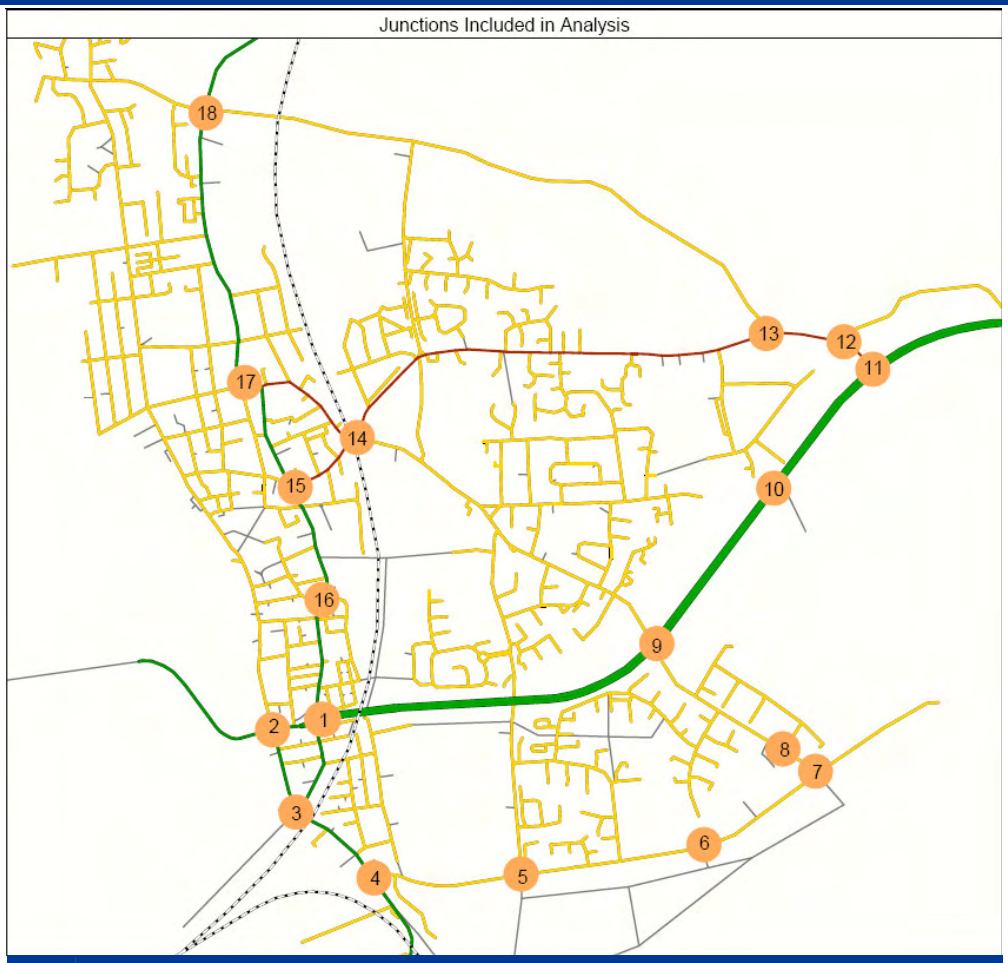
Local Policy

There are a range of local policy reports for Lincolnshire and Gainsborough. The documents reviewed are:

- ***Second Lincolnshire Transport Plan: 2006/7 to 2010/11***

- *Lincolnshire Network Management Plan: March 2009*
- *Lincolnshire Economic Strategy (LES) 2008 - 2012*
- *Lincolnshire Local Area Agreement (LAA) 2008-2011*
- *Development Guide on Transport and New Development Issues in Lincolnshire: 2007*
- *Central Lincolnshire Joint Strategic Planning Committee: 2009*
- *Gainsborough Regained: A Masterplan for Gainsborough: 2007*
- *The West Lindsey Local Plan (First Review): 2006*
- *The Development Plan for West Lindsey*
- *Regional Spatial Strategy for the East Midlands (RSS8): March 2009*
- *The Lincolnshire Waste Local Plan: 2006*
- *The Lincolnshire Minerals Local Plan: 1991*
- *Gainsborough Growth Point – Programme of Development 2008-2026*
- *Gainsborough Public Realm Improvements Scheme*
- *West Lindsey Sustainable Community Strategy 2006-2016*
- *Central and Coastal Lincolnshire Housing Market Assessment*

Appendix B Junctions for Assessment



No	Description
1	Thorndike Way (A631) / Trinity Street (A159) / Ashcroft Road / Bridge Road (roundabout)
2	Bridge Road / Bridge Street / The Flood Road (A631) / Lea Road (A156) (signalised)
3	Ashcroft Road / Lea Road (A156) (roundabout)
4	Lea Road (A156) / Foxby Lane junction (roundabout in Strategy scenarios)
5	Middlefield Lane / Foxby Lane (roundabout in Strategy scenarios)
6	Access to Southern Urban Extension from Foxby Lane east of Park Springs Road (roundabout in Strategy scenarios)
7	Heapham Road / Foxby Lane (roundabout in Strategy scenarios)
8	Southern access from Heapham Road to Industrial Estate (priority junction)
9	Thorndike Way (A631) / Heapham Road (signalised)
10	Thorndike Way (A631) access to new industrial estate and Eastern Urban Extension (signalised in Strategy scenarios)
11	Thorndike Way (A631) / Corringham Road (B1433) (roundabout in Strategy scenarios)
12	Access from Corringham Road (B1433) to Northern Urban Extension (signalised in 2037 and 2051 Strategy scenarios)
13	Corringham Road (B1433) / The Belt Road (priority junction) (roundabout in 2037 and 2051)
14	Spital Hill (B1433) / Cox's Hill (priority junction)
15	Spital Terrace (B1433) / North Street (A159) (roundabout)
16	Trinity Street (A159) / Colville Terrace (Tesco) / Heaton Street (signalised)

17	North Street (159) / Church Street (priority)
18	Blyton Road (159) / The Little Belt / Front Street (priority)

Appendix C Final Option Packages

- ***Bus Package***
- ***Walking and Cycling Package***
- ***Rail Package***
- ***Congestion Package***

Key

- Proposed new bus route
- Existing bus route
- Access improvements for pedestrians & cyclists
- Bus priority at junctions
- Real Time Passenger Information at key bus stops

Key

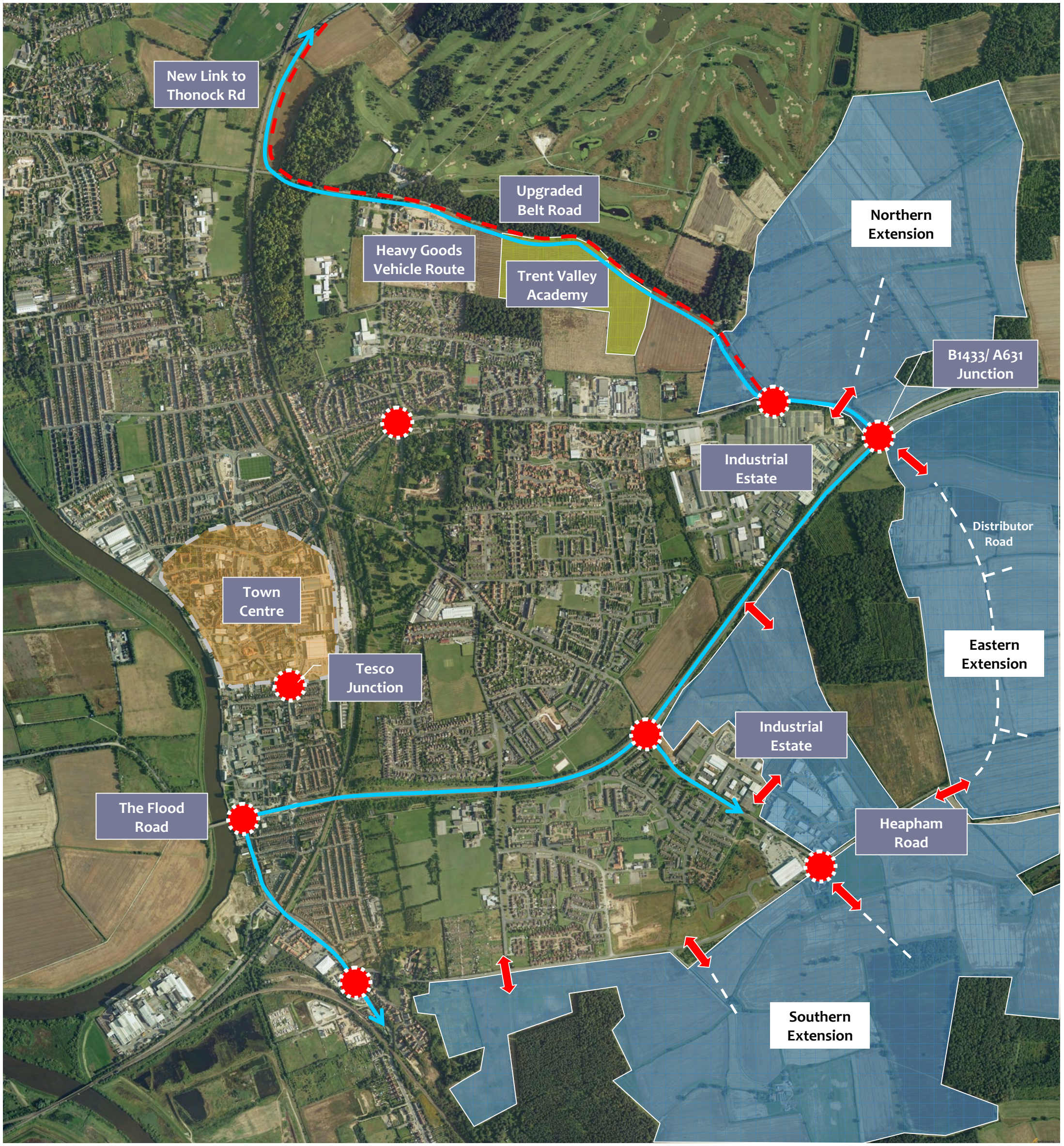
Proposed and existing high quality walking routes and cycle lanes

Signed walking & cycling routes

Advance stop lines at traffic lights for cyclists

Key

Proposed new bus route		Proposed and existing high quality walking routes and cycle lanes		Improved Lea Road Rail Station	
Existing bus route					
Improved pedestrian and cyclist crossing facilities in vicinity of station		Signed walking & cycling route		Access to new development	



Key

Heavy Goods Vehicle Route	⟷	Access Points to new developments	⟷	Urban Extension Distributor Roads	
Upgraded Belt Road	- - -	Junction Improvements	●		