



LINCOLNSHIRE LAKES

TRANSPORT STRATEGY

October 2010

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1. INTRODUCTION

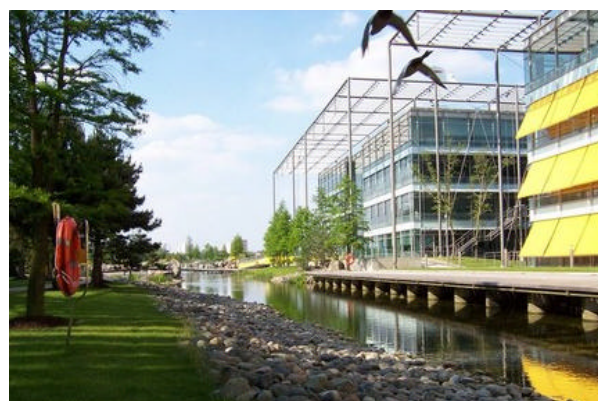
1.1 Pell Frischmann (PF) has been commissioned by the North Lincolnshire Highways Alliance to develop a multi modal transport strategy for the Lincolnshire Lakes project, which involves a major western expansion to the town of Scunthorpe.

1.2 The Lincolnshire Lakes project will be delivered through the Core Strategy of the North Lincolnshire Local Development Framework (LDF). The LDF process has identified the need to provide a substantial area of new housing to the west of Scunthorpe to meet the Authorities growth requirements and future housing needs.

1.3 At present an evidence base is being prepared to demonstrate the feasibility and deliverability of the project to support its inclusion within the Core Strategy. This report sets out a transport strategy for providing access to the site and delivering the supporting transport provision that will be required to serve it. The principles of the strategy will then be refined in the future development and masterplanning of the scheme in an Area Action Plan.

1.4 With potentially in excess of 10,000 new residential dwellings and 100,000 sq.m of employment land uses proposed on the Lincolnshire Lakes site, the implications in terms of transport, movement and access are significant and are a vital consideration in achieving a sustainable and prosperous development where people work, live and visit, which is the overarching vision for the site.

1.5 The Yorkshire and Humber Regional Spatial Strategy previously allocated North Lincolnshire the regional housing target of 15,700 homes between 2004 and 2026. Whilst the RSS has now been abolished it is still the Authorities intention to deliver the previously specific target. The Lakes site will thus represent the delivery of the majority of the authorities housing allocation over the next 10-20 years.



1.6 There is thus the need to plan a clear long term strategy for how the Project's transport needs can be catered for and designed to ensure they are consistent with national, regional and local transport policy and the authority's overall vision for the project. This is of particular importance with respect to promoting a sustainable development, where people travel and move using sustainable modes of transport. The aim will be to deliver a major development that is a leading example in sustainable transport terms, which will not only provide the Lakes area with excellent sustainable travel choice but also improve travel facilities and choice of the surrounding existing wards and indeed the entire town of Scunthorpe.

1.7 Transport planning policy is currently focused on promoting sustainable communities that reduce dependency on the private car and seek to reduce the long term carbon emissions from transport. With such a large scale development planned, which will potentially take 10-20 years to be realised, the focus is on defining a strategy that is both comprehensive and flexible and also incorporates the very latest in terms of good transport planning and design, urban design and also the latest technology. This report sets out the measures that will help achieve these aims and also defines the commitments and targets which will be imposed to ensure that the objectives are met.

1.8 The transport strategy considers access by all modes of transport and at a strategic level seeks to address the following key transport considerations:

- How can the site and areas of land be accessed?
- How will the site connect to the existing town and surrounding urban areas?
- How can sustainable access be maximised and promoted throughout the development?
- How will the public transport network need to be extended and improved to cater for such a large development?

- How much new travel demand will the site generate in order to quantify its impact and needs?
- From and where residents will travel so appropriate transport links can be developed and enhanced?
- What transport infrastructure and investment is required to support the project?
- How will the infrastructure be phased over time as the development grows?
- What commitments need to be made to make sure the schemes transport objectives are met?
- What targets can be set to measure performance to these objectives.

1.9 The proposals not only include a large area of new housing but also large scale employment opportunities and complimentary facilities such as education, health and retail land uses. This mix of development will in itself encourage internal movements and present opportunities to improve accessibility to services for neighbouring wards.

2.0 THE LINCOLNSHIRE LAKES PROJECT

2.1 Background

2.1.1 North Lincolnshire Council, along with Yorkshire Forward and Scunthorpe Town Team, published the Scunthorpe Strategic Development Framework (SSDF) in 2005. The SSDF set out a regeneration strategy for the town for the next 10-20 years, which included the Lincolnshire Lakes vision.

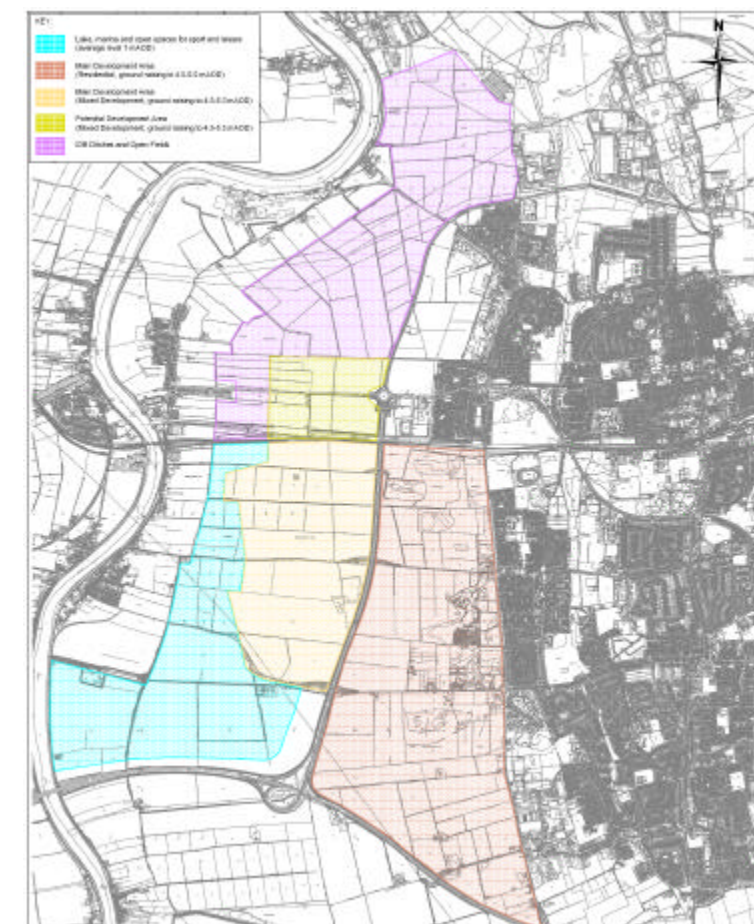
2.1.2 The vision for the Lincolnshire Lakes project was the provision of a major new waterside setting west of the existing urban area which would provide **a new gateway to the town** and be a focus for **sustainable development**, and the majority of the authority's and indeed the regions housing needs.

2.1.3 Whilst providing a sustainable development covers a whole range of issues in the context of the overall development, from a transport perspective the aims will be to promote alternatives to the private car, reduce the need to travel and provide people with a genuine choice.



2.1.4 Figure 2.1 shows the approximate extent of the area under consideration in the Lakes project.

Figure 2.1 – Lincolnshire Lakes Development Overview Plan



2.2 Scunthorpe Strategic Development Framework (SSDF)

2.2.1 The rationale behind the project is described as follows in the SSDF document:

“The starting point for the lakes concept arises from the fantastically flat landscape to the west, the existing gullies and abandoned quarries that naturally fill with water, and the tantalising closeness of the River Trent to Scunthorpe. These combine with the need for flood alleviation capacity in the region and a new external image to Scunthorpe to create a compelling case for a new waterside setting for the town.”

“The Lakes would positively transform the presently inauspicious approach to Scunthorpe and create a valuable opportunity for biodiversity and a new place for living, working and leisure. More than anything else they will put Scunthorpe positively on the map”.

2.2.2 In developing the concept through the SSDF, two scenarios were initially considered. The first being to use the area as a soft entity, incorporating lakes, wash land, woodlands, agriculture and a small amount of limited development. This would involve maximising the area for recreational, leisure and environmental purposes.

2.2.3 The second scenario, which is now being taken forward involved a much bolder concept which included features such as linking the lakes to the River Trent, provide sustainable housing and business, leisure facilities and marinas, gateway features and flood alleviation measures.

2.2.4 In terms of strategic transport access this second scenario also included the suggestion of downgrading the M181 motorway and de-trunking it, i.e. reducing the road from a motorway to a local road and changing the responsibility for it from the Highways Agency to the local authority, to allow the creation of a new junction to access the Lakes project and to allow the motorway to be downgraded to a local road.

2.2.5 The SSDF also set out the steps for taking the project forward, including setting up a multi-agency steering group and to fully address key issues and questions, such as flooding, sustainability and transport.

2.2.6 The SSDF identified a number of key functions for the Lakes project, which with respect to transport included:

- Formation of a new gateway to the town
- Creation of a **place to live sustainably**

2.3 2009 Lincolnshire Lakes Feasibility study

2.3.1 In 2009, a feasibility study was prepared by the consultant Halcrow on behalf of the council, assessing the technical and economic viability of the Lakes project.

2.3.2 In preparing the feasibility study the concept for the project evolved from the original vision into a significant mixed use development. The feasibility study included the development of a concept masterplan, refining the original SSDF ideas and presenting along with the numerous other considerations some potential strategic transport improvements.

2.3.3 The concept masterplan included a first phase of development focused around the south east corner and allowing the provision of some 3000 new residential dwellings and 25,000 m² of employment land uses.

2.3.5 In developing an evidence base for the project, the economic business case for the scheme is at present being reviewed along with the development of an evolving masterplan.

2.3.6 As part of this exercise a workshop was held on the 13th of April 2010 with key stakeholders to develop the concept masterplan further and establish the likely areas of development, land uses types and mixes and the necessary infrastructure requirements of the project. The outcomes of that workshop are thus used to inform this study.



3.0 EXISTING TRANSPORT NETWORK

3.1 General

3.1.1 The proposal site is situated to the west of the urban area of Scunthorpe, running alongside its western boundary from the M180 in the south to Flixborough to the north. The site itself is bound to the west by the River Trent.

3.1.2 The M181 motorway bisects the development area and runs in a north-south direction from the M180 motorway to the A18.

3.2 The Strategic Highway Network

3.2.1 The M181 motorway links the town of Scunthorpe to the M180 motorway. A spur off the M180, the M181 is virtually straight through its entire 2-mile (3.2 km) length. There are a number of bridges over the M181, including road and rail crossings, providing east to west linkages.



3.2.2 It currently experiences traffic flows of approximately 18,000 vehicles per day in both directions and is also subject to the national speed limit of 70mph. At its southern end it forms a grade separated free flow junction with the M180, with on and off slip roads in both directions. The M181 motorway terminates at the roundabout junction with the A18.

3.2.3 The free flow arrangement at the M180 has necessitated the need for the M181 to remain motorway over the years and not be detrunked, given that once drivers are on the M181 itself there is no alternative but to enter the motorway and no opportunities to Uturn or take an alternative route for traffic that is not suitable for motorway access.

3.2.4 The M180 itself provides an east to west route from the main motorway network in the west (M18, A1, M62) to the ports on the east coast and main towns of Scunthorpe and Grimsby. Traffic levels on the M180 are however reasonably low, in the context of the wider national motorway network, with daily two way traffic flows of approximately 40,000 vehicles.

3.3 Local Highway Network

3.3.1 The M181 terminates at the southern arm of a four arm roundabout junction with the A18 Doncaster Road. The eastern Doncaster Road arm of the junction forms the main route into Scunthorpe town centre from the east and is bound to the north and south by retail and leisure land uses, including a Tesco superstore and Scunthorpe United Football Club.



3.3.2 The western A18 arm links the villages of Gunness and Althorpe, via a bridge across the River Trent and further afield into the rural areas surrounding Scunthorpe.

3.3.3 The northern arm, the Phoenix Parkway A1077, effectively forms a northern bypass to the town and runs around the urban area.

3.3.4 Approximately 1km to the east of the M181 roundabout is the junction of Doncaster Road, Kingsway and Scotter Road known as Berkeley Circle. The junction is currently a five arm roundabout and regarded as one of the main points of localised peak hour congestion within the town.

3.4 Rail Network

3.4.1 Part of the site is bisected by the Sheffield to Cleethorpes railway line, which runs in an east to west direction across the northern part of the site.

3.4.2 A railway bridge is formed where the railway line crosses the M181 motorway and the remainder of the route generally runs along a raised embankment through the area of interest.

3.4.3 To the west of the site, on the western side of the River Trent is Althorpe train station. This station is the closest to 'The Lakes' site and currently has one service operating in each direction. The first service operates between Sheffield and Scunthorpe at a frequency of one train per hour, with the second service operating in the opposite direction between Scunthorpe and Lincoln via Sheffield, again at an hourly interval.

3.4.4 Whilst the frequency of services is relatively low from Althorpe, the number of locations served via a direct service is reasonable. These locations and the approximate journey times to each are detailed below:

- Scunthorpe 5 minutes
- Doncaster 40 minutes
- Rotherham 1 hour 4 minutes
- Meadowhall 1 hour 10 minutes
- Sheffield 1 hour 20 minutes

3.4.5 A direct service is also available to Lincoln, with trains travelling via Sheffield and a journey time of 2 hours 45 minutes.

3.4.6 In terms of station facilities, these are also limited. There is no dedicated parking or waiting room available and the station is an unmanned facility. As can be seen below, shelters are available on the platforms and a footbridge is present.



3.5 Bus Network

3.5.1 Access to 'The Lincolnshire Lakes' by bus will primarily be via services operating from Scunthorpe Bus Station in the centre of the town. Stagecoach is currently the main bus operator in Scunthorpe and as such a map showing their existing services (and some operated by Hornsby Travel) is shown in Figure 3.1. A number of additional rural bus services, which aren't included on this map but operate within the area are shown in Figure 3.2 for reference.



3.5.2 As can be seen in Figures 3.1 and 3.2, the number of services operating in the vicinity of the development is limited. This is due to fact that the area is currently primarily made up of farmland and that the roads within the area are mainly rural links with little residential or other dense development present. As such the main bus corridor in close proximity to the site is on Doncaster Road, with a number of services also operating along the northern part of Scotter Road and then Plymouth Road.

Figure 3.1 – Town Bus Services

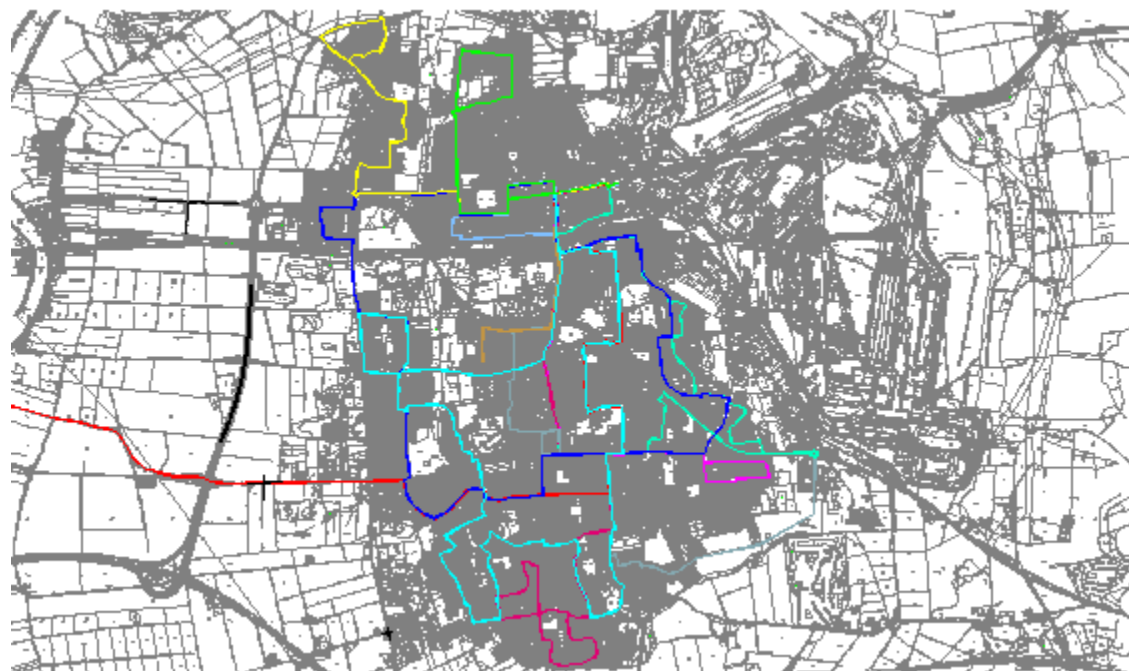
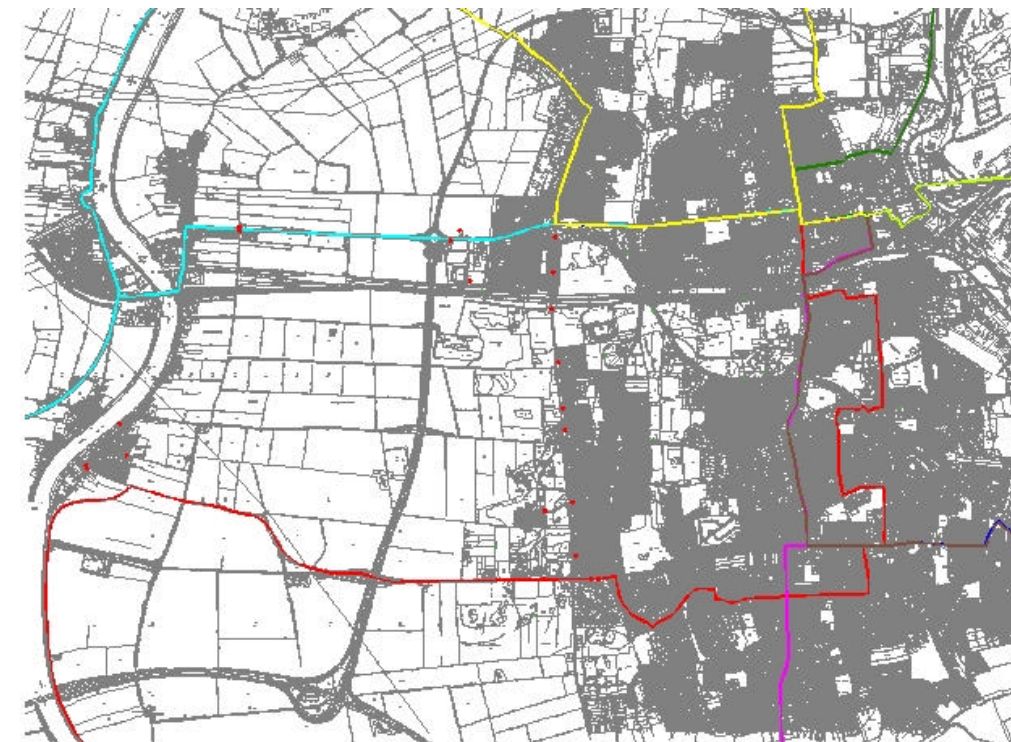


Figure 3.2 – Rural Bus services



3.5.3 A summary of the main existing services in the vicinity of the site, their route and typical frequency is provided in Table 3.1 below:

Table 3.1 – Local Bus Services

Service	Route	Frequency
12	Scunthorpe – Ashby - Ashfield	30 min (Mon – Sat)
31 / 32	Scunthorpe - Westcliff - Ashby - Frodingham	20 min (Mon – Sat)
33	Scunthorpe - Westcliff - Bottesford - Ashby	30 min (Mon – Sat)
34	Scunthorpe - Ashby - Bottesford - Westcliff	30 min (Mon – Sat)
356	Scunthorpe - Crowle - Garthorpe	2/3 hours (Mon - Sat)
909 / 910	Brigg – Scunthorpe - Doncaster	60 min (Mon – Sat)

4.0 RELEVANT TRANSPORT POLICY

4.1 General

4.1.1 In considering the options for accessing the development and providing the required transport infrastructure to support it, it is necessary to consider the various levels of transport policy and understand the policy objectives the project should be aiming to achieve.

4.1.2 All levels of policy are currently aimed at reducing the reliance on the private motor car, reducing carbon emissions, encouraging the use of non car modes of transport and giving people a genuine choice of travel. As such a summary of the relevant policies is provided below.

4.2 The Transport White Paper

4.2.1 Central governments strategic transport policy is defined in the Transport White paper “A new deal for transport: a better deal for everyone”. The principal objective of the paper is to deliver an integrated transport system to tackle congestion, pollution, promote choice and reduce car dependency. It seeks to achieve integration:

- Within and between different types of transport
- With the environment
- With land use planning
- With policies of education, health and wealth creation.

4.3 Planning Policy Guidance Note 13

4.3 Planning policy relating to transport is contained in Planning Policy Guidance (PPG) Note 13, published in March 2001. The objectives of this guidance are set out in Section 4 and are to:

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

4.4 North Lincolnshire Local Plan

4.4.1 The North Lincolnshire Local Plan was adopted in 2003 and aims to address a broad range of issues to improve the quality of life and access to facilities for local residents by working closely with local businesses and communities to sustain and develop the area through new investment and growth.

4.4.2 Policy T1 and T2 sets out criteria that need to be fulfilled by new development which includes a choice of transport modes, public transport, walking, cycling and access to the existing road network.

4.4.3 Policy T8 of the local plan relates to cycle access and parking provision and requires new developments to:

i) include cycle links with existing or proposed routes where such opportunity exists; and

ii) ensure that the provision of cycle parking facilities is in accordance with the standards set out in Appendix 2.

4.5 Local Transport Plan

4.5.1 The second Local Transport Plan (LTP) for North Lincolnshire was published in 2006. This document sets out the vision for transport between 2006 and 2011 and is described as follows:

“A well maintained transport system that supports sustainable communities within a safe and prosperous environment and contributes to the wider environmental, economic and social well being of the people who live and work in North Lincolnshire”

4.5.2 When considering transport and land use issues the LTP adopts a Road User Hierarchy that identifies the priority that is to be given to the needs of different user groups. The hierarchy adopted is as follows:

- Pedestrians, including those with restricted mobility.
- Cyclists and motorcyclists
- Public transport / taxi users.
- Commercial / business users.
- Car and coach borne shoppers and visitors.
- Car borne commuters.

- 4.5.3 The seven objectives identified in the Local Transport Plan are listed below with a brief description
- Safety – making North Lincolnshire's highway network safe for all users
 - Environment (better air quality) – to protect and maintain the environment to minimise the environmental impact of transport
 - Congestion – To minimise the adverse consequences of congestion
 - Accessibility – To improve accessibility to key services within North Lincolnshire for everyone
 - Quality of Life – To promote a transport system that contributes to a healthier society within a sustainable community
 - Network Management – To maintain and manage the existing highway infrastructure so that it contributes to the efficient use of the network
 - Economy – To support sustainable economic activity through improved transport access and efficient use of the existing network.

4.5.4 It is evident that the 'Lincolnshire Lakes' scheme is aligned with a number of the common objectives contained within LTP2, which is the current strategic document, but crucially it will also align with the goals of the third Local Transport Plan, which is currently being developed.

4.5.5 The third Local Transport Plan will be based around the five national goals for transport and will provide the Transport Strategy for North Lincolnshire between 2011 and 2026. With the Lincolnshire Lakes scheme being developed during this period, it is clear that it will assist in delivering the overall vision for not only the current LTP, but also that being developed for the next 15 years from 2011.

4.6 Future Transport Schemes in the Authority

4.6.1 There are a number of major transport projects planned and being progressed within North Lincolnshire which have varying degrees of impact on the Lincolnshire Lakes project. These include schemes to be delivered by the Highways Agency, Network Rail, private developers and through the Local Transport Plan (LTP).

4.6.2 Table 4.1 summarises these schemes along with a brief description of their scope and cost.

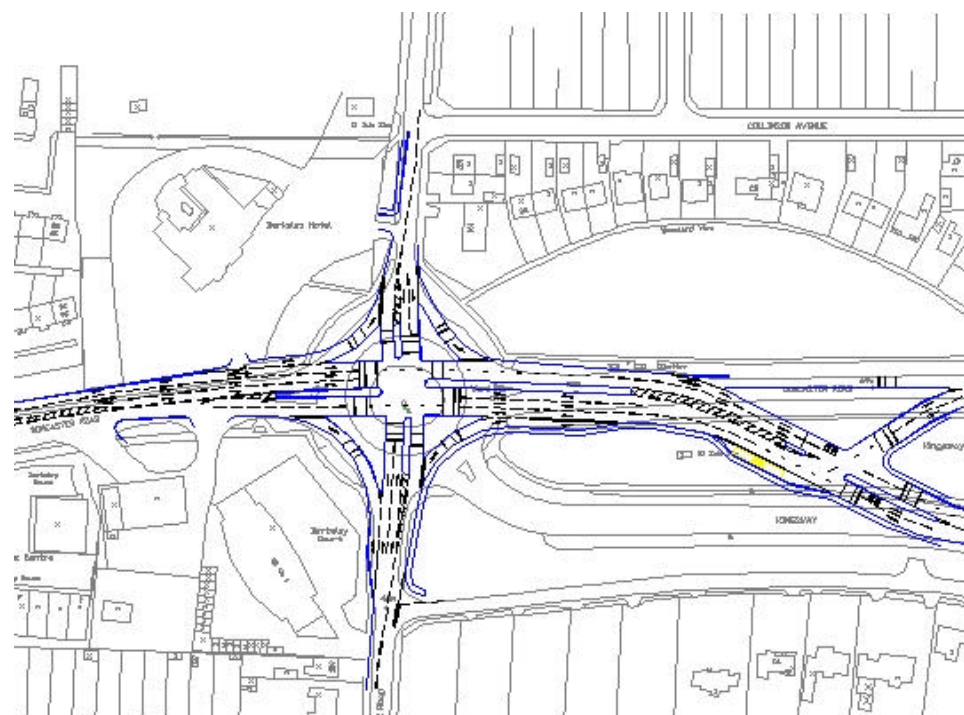
Table 4.1 – Major Transport schemes with North Lincolnshire

Scheme	Description
A160 Improvements	Upgrading of the single carriageway section of the A160 to dual and associated junction improvements along the route to improve access to the ports. RFA funding of £95M committed, with further government funding of £30M.
South Humber Bank supporting infrastructure	Local road network improvements to complement the above major scheme. Estimated cost £9M.
Killingholme Loop	Network Rail proposals to develop a one way loop close to the ports in place of existing cul-de-sac. To improve rail congestion at the ports and increase rail capacity. Estimated cost £40M
Berkeley Circle	Replacement of existing roundabout with new signal controlled crossroads. Scheme funding linked to planning permission for residential development to the north of Doncaster Road. Funding of £1.5M to come from development.
A161 access to Sandtoft employment allocation	Two highway options to improve access to Sandtoft airfield. Estimated cost £2M-7M depending on preferred option.
Humberside Airport transport improvements	Various improvements to transport at the airport, including new roundabout, road safety measures, rail improvements and Travel Plans.
Ashbyville Roundabout	Roundabout junction is to be improved in phases to improve capacity and mitigate nearby residential development. Section 106 funding secured to deliver improvements.
Urban Traffic Control	Implementation, in remaining LTP2 period, of UTC system within the authority. Includes Doncaster Road corridor. Estimated cost - £0.5M
Connect 2	Provision of an off road pedestrian and cycle route along the western edge of Scunthorpe. £2.6M of funding secured from Sustrans and Lottery
A1077 Realignment South Ferriby	Provision of alternative alignment adjacent to Reads Island.

4.6.3 The above schemes cover the whole authority and have varying degrees of impact on the Lakes Project. In total it is apparent that there is approximately **£150M of transport investment planned** within the authority to improve the local transport network and improve access to jobs.

4.6.4 There are a number of schemes that clearly given their location have a key bearing on developing a strategy for the Lakes project. Firstly the planned improvements to Berkeley Circle tackle one of the key existing bottlenecks within the town on the Doncaster Road corridor and greatly improve pedestrian facilities. Clearly this scheme is complimentary to the Lakes and assists in improving constrained infrastructure in the immediate vicinity of the site. Figure 4.1 shows the proposed layout of the improvements:

Figure 4.1 –Berkeley Circle Improvements



4.6.5 It is however noted that its delivery is reliant on the implementation of the planning permission associated with the housing land to the rear of Tesco's to the north of Doncaster Road. If this development fails to materialise so will the scheme for improving the junction.

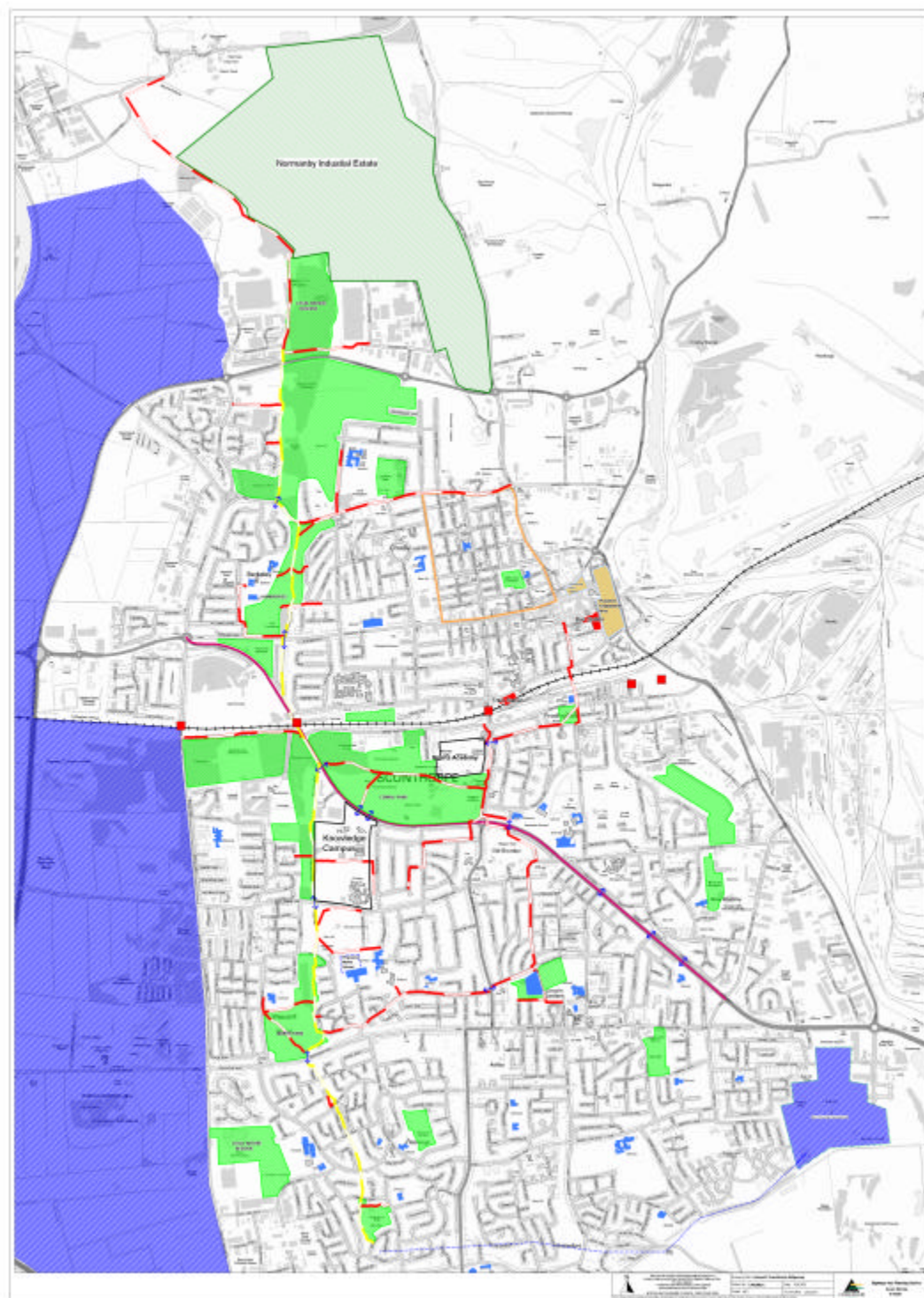
4.6.6 The implementation of a UTC (Urban Traffic Control) system in the town also assists in putting into place the technology to provide greater control and improve traffic flows within the town.

4.6.7 The LTP currently allocates £500k for the implementation and set up of a new UTC system for the town, which the council will then operate. The initial stages of the implementation will then be focused on developing the Ashby Road corridor as the first section of the network which is included in the system. There are then future aspirations to extend the network further to cover the Doncaster Road and Brigg Road corridors.

4.6.8 The Connect 2 project is a UK wide Sustrans project to create new walking and cycling routes. North Lincolnshire Council submitted a successful bid as part of the Connect2 project for the development of an off-road pedestrian/cycle facility that runs through the western side of Scunthorpe, from the A1077 to High Leys Road. The scheme is estimated to cost around £2.6 million and will provide a safe route away from traffic, encourage more sustainable travel and provide an excellent route linking some of the key facilities in the area e.g. schools, colleges, Scunthorpe town centre and central park.

4.6.9 Figure 4.2 shows the proposed route of the Connect 2 project in Scunthorpe, with the main route shown in yellow and the aspirational sections shown in red.

Figure 4.2 – Connect 2 Project



5.0 TRANSPORT CONSTRAINTS AND OPPORTUNITIES

5.1 Development Scale

- 5.1.1 The proposed allocation, which will form a western expansion to the existing urban area, will potentially yield up to 10,000 new dwellings and 100,000 sq.ft of employment land uses including not only employment but other complimentary land uses (i.e. schools, health facilities and retail).
- 5.1.2 To put that level of urban expansion into some perspective the entire North Lincolnshire authority currently includes approximately 70,000 dwellings. Of which there are some 29,000 dwellings in Scunthorpe.
- 5.1.3 With such a large scale development proposed, the potential transport infrastructure requirements are significant. This project thus presents opportunities to not only provide first class access and travel choices for the Lakes project but to also significantly enhance and improve the town's transport network and encourage sustainable travel.
- 5.1.4 In that context and with respect to the potential revenues the development will generate, there is the scope and need to consider substantial improvements and changes to the town's transport network and overall transport plans and policies. Not only will this investment help make the Lakes a leading example of sustainability but it will also have spin off benefits to the surrounding wards.
- 5.1.5 To the east of the development area is the Westcliff ward, which covers the area largely to the east of Scotter Road. This is currently one of the most deprived wards in the authority and the proposed mix of development will not only provide benefits to the local residents in terms of new and improved transport infrastructure and services but also by simply providing new facilities within an accessible distance. This will include new employment opportunities, new schools and education facilities, recreational and open space areas and health facilities.

5.2 Sustainable Access

- 5.2.1 The main transport objective and commitment of the Lakes proposal is for the site to be sustainable in terms of access and movement, encouraging the use of sustainable modes of travel, reducing the need to travel and offering a genuine choice of modes of travel for its residents, workers and visitors. In keeping with all levels of transport policy the aim for the development is to promote modes that assist in reducing carbon emissions from transport.

- 5.2.2 Given the likely scale of the proposals in trip generation terms and its current land use, it is evident that significant measures are required to provide for sustainable movement. At the present time the site area is predominately rural farming land and as would obviously be expected not well connected in terms of public transport access to the main employment areas and the town services and facilities. Whilst there are few bus services in the area, it is within an accessible distance for cycling and walking to other key facilities to the east.

- 5.2.3 The site represents a major western expansion to the existing urban area and a key focus of the transport strategy will be to provide excellent links to the main trip attractions, as well as encouraging the use of sustainable movements internally. In order to develop a sustainable travel strategy there is a need to understand where people may travel to and from and considering the opportunities for providing good links to these locations.

5.3 Physical Barriers and Constraints

- 5.3.1 The area under consideration is a large expanse and ranges from the edge of the existing Scunthorpe urban area to the villages of Burringham and Gunness next to the River Trent. There are a number of physical features which influence the potential spatial development of the area.
- 5.3.2 Firstly the railway line runs from east to west across the area, bisecting it at the northern end. Thus limiting the links that can be provided and potentially raising the need for new bridges and/or at grade rail crossings. It also provides the opportunity to link to the local rail network
- 5.3.3 The same is true for the M181 which forms a barrier down the centre of the site along a north-south axis. Although three road bridges and one rail bridge already exist along the length of the M181, allowing it to be crossed in an east-west direction, the motorway currently forms a major barrier down the centre of the development site.

5.4 Existing Local Highway Network

- 5.4.1 The existing highway network within the town of Scunthorpe is in broad terms operating reasonably well and not suffering the level of congestion experienced in other UK towns and cities. There are some areas of congestion but these are generally restricted to the peak hours and limited to a few key junctions.

5.4.2 There is some spare capacity currently in the highway network to cater for demand from the proposed Lakes allocation and general traffic growth. The future performance of specific links/junctions within the study area is investigated in greater detail in section 10 of this report.

5.5 The Strategic Highway Network

5.5.1 The site is well placed near to the local motorway network, which provides fast and convenient access to some of the surrounding employment centres in the region. These include the South Humber Gateway to the east, which includes the largest port complex in the UK (and is an area with over 1000 hectares of allocated employment) and the larger cities and national motorway network in the west.

5.5.2 Not only is the site well located in terms of general proximity to the motorway network, the M180 is from a national perspective a relatively lowly trafficked and congestion free section of motorway. The location in respect to the motorway network presents both opportunities and considerations.

5.5.3 Whilst good motorway connections are attractive to both potential business occupiers and commuters, the priority in the strategy will be to maximise sustainable access and provide good linkage to the existing Scunthorpe town centre and other employment areas and attractions. There is thus a key balance to achieve in utilising the good motorway links and encouraging sustainable modes.

5.5.4 The site itself is also physically bisected by the M181 motorway in a north-south direction through the centre of the site. This highway dominant feature thus creates a large barrier for east to west movements and severance between the two areas of this development site. In the context of the Lakes proposal, the severance created by the motorway becomes more significant as it bisects the site. Addressing and reducing this barrier will thus be significant in providing strong internal linkage.



5.5.5 This spur link (the M181) from the M180 is considered to be of limited strategic importance and in considering the development of the Lakes project previously the suggestion that it be “de-trunked” to allow a new direct access to the Lakes be provided and reduce severance, has been identified.

5.5.6 The de-trunking of roads transfers the responsibility of road management from the Highways Agency (HA) to the local authority. Section 10 of the Highways Act 1980 provides the authority for the Minister to order that a trunk road ceases to be a trunk road.

5.5.7 At present the M181 cannot in practical terms be easily “de-trunked”, as many other A roads have been in recent years, due to the free flow arrangements at its junction with the M181 which force people who enter the M181 to go onto the M180. There is thus in practical terms the need to provide a new junction of some form to allow de-trunking or partial de-trunking to occur.

5.5.8 The advantages of de-trunking are that it would allow the formation of a new access or accesses to serve the development and provide a new access in the centre of the development area. It would also provide the scope for the Authority to reduce the motorway dominant style of the road and tackle some of the severance issues raised.

5.6 Summary

5.6.1 In summary, the following key opportunities and constraints are identified:

- A relatively congestion free and lowly trafficked local and strategic network

- An existing rail line through the northern section of the site
- Limited existing sustainable access
- Potential large scale development and associated infrastructure investment
- Located in a predominately rural authority

6.0 STRATEGY OBJECTIVES

6.1 General

6.1.1 This section of the report sets out the overall objectives of the Transport Strategy, whereas the actual physical measures and structure are described later in this report.

6.1.2 It is imperative that the objectives of the strategy are consistent with the various levels of transport policy described in Section 4 of this report and with the overall vision for the proposal. Section 11 of this report looks at how these objectives will be met and sets out the developments commitment to delivering these objectives. Section 14 considers what targets should be adopted to ensure performance is properly monitored

6.1.3 In general terms the aims of the transport strategy will be to

- Provide people with a genuine choice of travel
- Maximise sustainable accessibility and movement both internally and externally
- Promote and prioritise access and facilities in line with the Council's road user hierarchy
- Reduce the need to travel
- Minimise the carbon emissions generated by transport from the development
- Improve facilities and services for the surrounding population and rest of the town
- Provide a leading example of sustainable development

These are the key streams of all levels of policy and will be the fundamental aims of the development.

6.2. Core Themes

6.2.1 Building on the general policy aims will be the core themes of the development, which are:

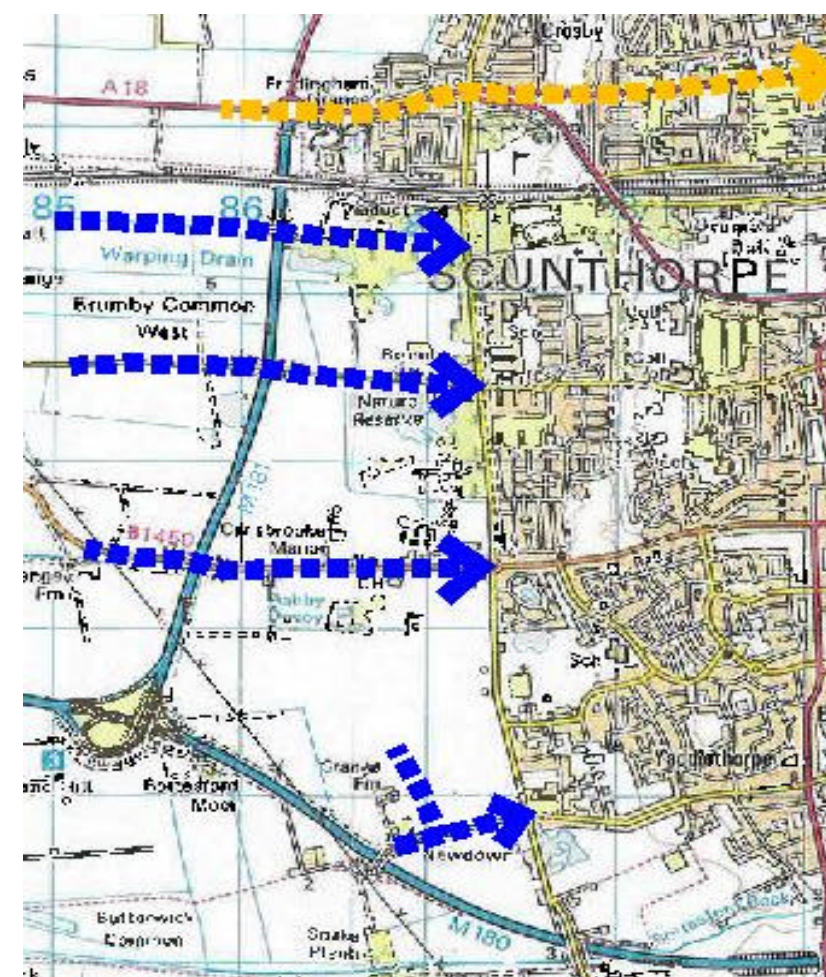
- SUSTAINABILITY
- CONNECTIVITY
- MANAGING DEMAND
- BALANCE

6.2.2 **Sustainability** will be the key transport theme in the investment programme and masterplanning of the site. Not only in influencing how people travel but also by links to the existing network through planning the internal layout of the development itself.

6.2.3 The principles of sustainable development will be applied across all aspects of the Lakes project, one of which will be the transport related aspects. The fundamental aim of which will be to reduce the need to travel by car and minimise the carbon emissions generated by transport.

6.2.4 **Connectivity** with the existing town centre and urban environment is critical in achieving a sustainable solution. The development will seek to promote strong sustainable mode links along Doncaster Road to the town centre and to the existing Scotter Road urban area to the east. As illustrated in the sketch in Figure 6.1, showing the local connections in blue and the strategic town centre connection in yellow.

Figure 6.1 - Connectivity Principal



6.2.5 The first of these connectivity themes will be developed by building on the existing public transport corridor along Doncaster Road to the town centre. This is already one of the main transport corridors in the town and a designated quality bus corridor.

- 6.2.6 The additional demand from the proposal will allow the corridor to be developed further with the dual aim of removing vehicular traffic and giving more priority to public transport services. This will be achieved through investment, physical improvement and demand management measures.
- 6.2.7 Inward connectivity to the town centre will need to be supplemented with good strategic connectivity to the main employment areas further afield. In particular the South Humber Bank and the employment opportunities that area presents.
- 6.2.8 The authority has recently commissioned a separate study looking specifically at connectivity between key employment areas and the local population, which will consider the opportunities and measures to improve connectivity and access to employment. This will also include specific assessment of connectivity issues between the Lincolnshire Lakes development site and South Humber Bank employment allocations.
- 6.2.9 In terms of **Managing Demand**, a development of this scale will clearly create new demand on the wider transport network and it's impact will need to be mitigated and the additional demand catered for by improved services and infrastructure. This will be achieved wherever possible by the promotion of alternatives to the car to reduce the vehicular demand generated by the development and also by providing alternatives for users who are already on the network.
- 6.2.10 The motorway network and local road network is in national and regional terms operating very well and with more than adequate reserve capacity. The Lakes project unlike most UK cities and towns, benefits from a relatively congestion free network which will likely result in it not having to invest significantly in new offsite highway infrastructure proposals to mitigate future congestion problems. The strategy will however seek to significantly invest in sustainable travel modes, facilities, services and provision. Although there will obviously be a need to construct new accesses to the site, there can also be comfort that the development is not likely to incur large highway costs in terms of needing to improve the motorway and local networks and can largely focus its investment into sustainable modes.
- 6.2.11 For a site of this nature and location, achieving **Balance** will also be a theme of the strategy. The proximity of the motorway network and its relatively low levels of flow are clearly positive features for the Lakes project, however the objective will not be to use this spare capacity but in fact to reduce car reliance not only at the development but also in the town and present a balanced strategy that provides for all modes of transport.

6.3 Other local objectives

- 6.3.1 In specific terms the objectives with respect to the local area, the development will seek to:
- Provide strong links to the existing town centre, neighbouring wards and other key employment sites
 - Form local links and permeability with the existing Scotter Road area along its eastern boundary
 - Provide a new Gateway feature to the town.
- 6.3.2 In respect to the masterplanning of the development itself, it will seek to
- Provide safe and direct access for all modes of transport
 - Provide a leading example of sustainable design and development.
 - Link the infrastructure to assist in meeting the aims of the overall masterplan
 - Set in place a travel planning process that evolves with the project and continues to adapt
 - Provide a range of land uses

7.0 RELEVANT DATA SOURCES AND INFORMATION

7.1 In order to assess existing traffic conditions in the area, traffic survey data for the following locations has been supplied by North Lincolnshire Council:

- Scotter Road/ Burringham Road
- Doncaster Road /A1077/ M181
- Brumby Common Lane/West Common Lane/Scotter Road
- Burringham Road/Scotter Road

7.2 In addition to local traffic flows, further information has been extracted from the TRADS website for the trunk road network. This includes the following locations on strategic road network:

- Site 1014 M181 N'bound
- Site 12/1578 M180 W'Bound Junction 2-3 (E482500, N407200)
- Site 12/1579 M180 E'Bound Junction 2-3 (E482500, N407200)
- Site 12/30015907 M181 S'Bound between A18/A1077 and M180(E486136, N409459)
- Site 12/30015908 M181 N'Bound between M180 and A18/A1077(E486118, N409447)

7.3 This survey information has been used to assess the capacity of the existing infrastructure and assess access options for the proposal.

7.4. In addition to the traffic survey data, other background data has been obtained on current travel to work patterns, car ownership levels and employment information, all of which set the context of the proposed strategy.

7.5 Using 2001 census data, it is possible to identify the existing modal splits for journeys to work carried out by the wards located close to the Lakes site (i.e. Brumby, Burringham and Burton upon Stather). The modal split data for 11,284 residents, shown in the table 7.1, infers that the car is dominant for journeys to work with on average 73% of people across the three wards accessing employment either as driver or passenger. Only 16% of journeys to work are made by modes considered sustainable, that of walk, bicycle or public transport.

Table 7.1 – Current Travel to work Modal Split by Ward

Mode to Work	Brumby	Burringham	Burton upon Stather	Average
Works mainly at or from home	6%	7%	8%	7%
Underground, metro, light rail or tram	0%	0%	0%	0%
Train	0%	0%	0%	0%
Bus, minibus or coach	7%	4%	2%	4%
Taxi or minicab	1%	0%	0%	0%
Driving a car or van	56%	65%	71%	64%
Passenger in a car or van	11%	10%	7%	9%
Motorcycle, scooter or moped	3%	2%	2%	2%
Bicycle	8%	5%	3%	5%
On foot	9%	7%	6%	7%

7.6 Table 7.2 shows how the average modal splits of the three wards compare to the town centre, regional and national values.

Table 7.2 – Current Travel to work Modal Split by region

Mode to Work	Average of 3 local wards	Scunthorpe Town centre	Yorkshire and Humber	England
Works mainly at or from home	7%	2%	8%	9%
Underground, metro, light rail or tram	0%	0%	0%	3%
Train	0%	0%	1%	4%
Bus, minibus or coach	4%	9%	10%	8%
Taxi or minicab	0%	0%	1%	1%
Driving a car or van	64%	64%	56%	55%
Passenger in a car or van	9%	9%	7%	6%
Motorcycle, scooter or moped	2%	1%	1%	1%
Bicycle	5%	4%	3%	3%
On foot	7%	11%	11%	10%

7.7 As can be seen regionally some 63% of people travel to work by car and some 61% nationally, where as the three local wards show 73% of people travelling by car. Clearly this is significantly above the average both regionally and nationally and a relatively car dominant environment.

7.8 Data has also been extracted for car ownership levels in the authority and the region and nation. Table 7.3 shows the resultant levels of ownership

Table 7.3 – Car Ownership levels

Car Ownership	Scunthorpe (%)	Yorkshire and the Humber (%)	England (%)
No car or van	29%	30%	27%
1 car or van	47%	44%	44%
2 cars or vans	20%	21%	24%
3 cars or vans	4%	4%	5%
4 or more cars or vans	1%	1%	1%
Car ownership per household	1.02	1.01	1.11

7.7 Data on occupational categories from the census 2001 data, shown in Table 7.4, indicates that compared with the regional average, there is an under-representation of managers and senior officials whereas there is an over-representation of process, plant and machine operatives and elementary occupations. This statistic is also replicated when compared nationally with a 5% difference in managers and senior officials. There is a 6% over representation of elementary occupations and a 7% over-representation of process, plant and machine operatives.

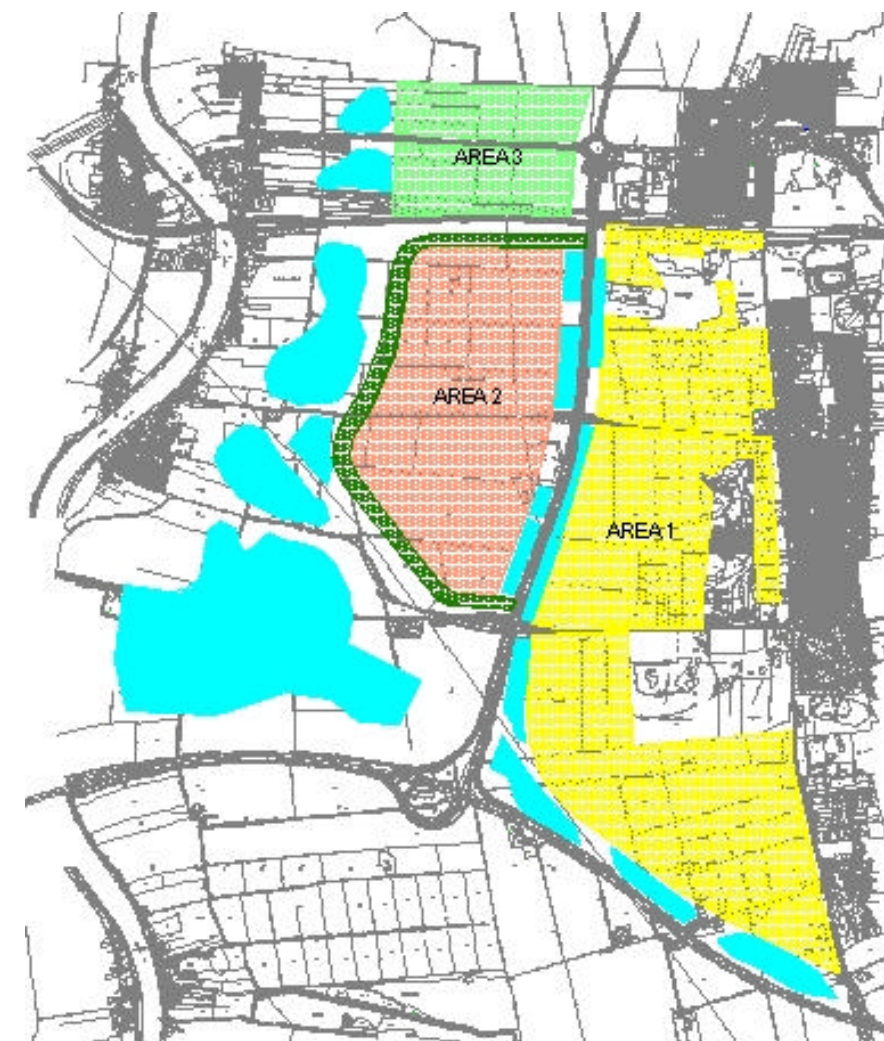
Table 7.4 – Occupation levels

	Scunthorpe	Yorkshire and The Humber	England
1. Managers and Senior Officials	10%	13%	15%
2. Professional Occupations	7%	10%	11%
3. Associate Professional and Technical Occupations	10%	12%	14%
4. Administrative and Secretarial Occupations	11%	12%	13%
5. Skilled Trades Occupations	14%	13%	12%
6. Personal Service Occupations	7%	7%	7%
7. Sales and Customer Service Occupations	8%	8%	8%
8. Process; Plant and Machine Operatives	15%	10%	8%
9. Elementary Occupations	18%	14%	12%
Total	100%	100%	100%

8.0 DEVELOPMENT ASSUMPTIONS

- 8.1 The masterplan for the proposal is currently in development, thus in order to assess the travel demand of the Lakes project it is necessary to make some assumptions about the scale, phasing and land use mix to be delivered on the site. The current working masterplan is used as a basis for this study.
- 8.2 In developing a transport strategy and to allow that strategy and the associated infrastructure delivery to be phased, the total aspirational level of development is to be tested and its requirements explored. In this instance it has been agreed with NLC that it is assumed the overall site will yield some 10,000 residential dwellings and 100,000sq.m of employment and ancillary land use.
- 8.3 Obviously such a large allocation of housing and employment will take many years to be constructed and as such assumptions are made about the phasing and timescales associated with its delivery, to allow the capacity of the transport network to be considered and new infrastructure/facilities/services to be designed, prioritised and programmed.
- 8.4 The Halcrow 2009 Feasibility study included some assumptions about these issues and has along with the current working masterplan and workshop outputs been used as a starting point for defining the assumptions of this study.
- 8.5 Following a review at the workshop of the design and land constraints the site is effectively split into three areas. Figure 8.1 illustrates this approximate areas. These are thus referred to as Areas 1-3 for reference.

Figure 8.1 – Development Overview



- 8.6 The entire lakes proposal site is approximately 2000 hectares in total. Area 1 (shown in yellow) is approximately 330 hectares and will be for predominately residential development. Area 2 (shown in red) is approximately 170 hectares and will be for mixed residential and employment land uses. Areas 1 and 2 are sufficiently large to realise the whole of the proposed allocation and are therefore anticipated to yield the full development.
- 8.7 Finally Area 3 is 76 hectares and is set aside for a number of potential additional facilities including a Park and Ride, new rail station and potentially a relocated football ground.

8.8 Table 8.1 summarises the resultant density assumptions for the two main areas.

Table 8.1 – Development assumptions by area

Area	Residential Density (no of dwellings)	Employment floorspace (sq.m)
1	6000	25,000
2	4000	75,000
<i>TOTAL</i>	<i>10,000</i>	<i>100,000</i>

9.0 TRIP ATTRACTION AND DISTRIBUTION

9.1 Assumptions

9.1.1 Given the phasing and land allocation information described in section 8, an estimation of the number of person trips to and from the site during the AM and PM peaks can be derived using appropriate trip rates from the TRICS database. This allows the quantum of transport movements generated to be appraised and the necessary additional capacity in the transport network to be considered.

9.1.2 Turning firstly to Area 1 which is anticipated to be the first area released for development, it is assumed some 6600 houses would be supplied on this area along with 25,000 sq.m of employment. The latter will include a mix of different land uses and therefore it is necessary to make sure assumptions about the mix of uses.

9.1.3 The Halcrow Feasibility Study 2009 gave initial consideration as to the types of employment located within the designated phases and these assumptions are highlighted in the table below.

Table 9.1 – Breakdown of Employment Land makeup

Area 1 - 25,000 sq m		
Employment Type	Assumed Percentage Split	Resultant Floorspace (sq m)
B1	49%	12,180
B2	16%	4,060
B8	16%	4,060
Community/Ancillary	19%	4,700

9.1.4 The table indicates the types of employment to be provided; primarily office, industrial and distribution. This table also identifies that of the 25,000sqm of employment land use, some 19% will be used for other community/ancillary facilities.

9.1.5 The community/ancillary allocation of 19% is split further amongst the following key internal facilities

- Primary Schools - 10% (2585sqm)
- Primary Health Clinic - 6% (1504sqm)
- Retail – Convenience – 1% (282sqm)
- Retail – Retail Units - 2% (329sqm)

9.2 Person Trip Rates

9.2.1 From allocating the designated employment land to different employment types, the TRICS 2010(a) database was then interrogated to produce relevant multi-modal person trip rates for each of the land uses. The resultant person trip rates are shown in Table 9.2, the supporting TRICS samples are included as Appendix A to this report.

Table 9.2 – Person Based Trip Rates (per 100.sqm of floorspace)

Site Usage	AM Arrival	AM Departure	PM Arrival	PM Departure
B1	2.43	0.162	0.355	2.114
B2	1.042	0.492	0.382	0.952
B8	1.083	0.256	0.31	1.073
Primary Schools	22.449	4.449	0.449	0.972
Primary Health Clinic	3.871	1.425	1.573	2.782
Retail - Convenience	39.659	38.308	43.234	42.882
Retail - Retail Units	14.624	13.487	9.03	9.538
Residential	0.197	0.836	0.537	0.320

9.2.2 The person based trip rates have then been factored by the relevant floorspaces to generate the gross peak period travel demand for the development, which is illustrated in Table 9.3.

Table 9.3 – Total Person Trip Generation

	Area 1		Area 2	
	Arrivals	Departures	Arrivals	Departures
AM peak	1772	2847	1870	3265
PM peak	1869	1519	2138	1679
Total	3641	4366	4008	4944

9.2.3 In order to split the person trip generation by mode of travel, the local ward population travel to work modal splits have been utilised (see Table 7.1 of this report). The resultant trip generation by mode is shown in Tables 9.4 and 9.5. These are based on the average modal splits observed in the 2001 census for the surrounding three wards, as noted in Section 7 these are considered to be a low baseline in terms of sustainable travel and are thus considered as a scenario which the strategy would seek to improve significantly at the lakes.

Table 9.4 – AM peak hour trip generation by mode

AM PEAK Travel to work Modal split	Area 1		Area 2		Total	
	Arrivals	Dep	Arrivals	Dep	Arrivals	Dep
Works mainly at or from home	124	199	131	228	255	427
Underground, metro, light rail or tram	1	2	1	2	2	4
Train	4	6	4	7	8	14
Bus, minibus or coach	77	124	81	142	158	266
Taxi or minicab	7	11	7	13	15	24
Driving a car or van	1138	1828	1201	2097	2339	3925
Passenger in a car or van	155	250	164	286	319	536
Motorcycle, scooter or moped	38	61	40	69	77	130
Bicycle	91	146	96	168	187	314
On foot	127	204	134	234	261	439
Other	10	16	10	18	20	34
Total	1772	2847	1870	3265	3642	6112

Table 9.5 – PM peak hour trip generation by mode

PM PEAK Travel to work Modal split	Area 1		Area 2		Total	
	Arrivals	Dep	Arrivals	Dep	Arrivals	Dep
Works mainly at or from home	131	106	149	117	280	224
Underground, metro, light rail or tram	1	1	1	1	2	2
Train	4	3	5	4	9	7
Bus, minibus or coach	81	66	93	73	174	139
Taxi or minicab	7	6	9	7	16	13
Driving a car or van	1200	975	1373	1078	2573	2054
Passenger in a car or van	164	133	187	147	351	280
Motorcycle, scooter or moped	40	32	45	36	85	68
Bicycle	96	78	110	86	206	164
On foot	134	109	153	121	288	230
Other	10	8	12	9	22	18
Total	1869	1519	2138	1679	4007	3198

9.2.4 The generations shown in Tables 9.3 and 9.4 are the gross trip generation generated by each individual element of the development on a stand alone basis and make no allowance for the fact that many of these trips will be between land uses and thus are double counted in the summations in these totals. For example many of the departures from residential properties will be arrivals at the schools.

9.2.5 Again all of these figures are gross trip estimates and represent forecast generations based on stand alone assessments of individual land uses. Appraising linked trips for such a large scale development is extremely difficult however it is likely that when full developed, as much as 50% of these trips will in fact be internal to the Lakes project and have little impact on the wider network. However what they do demonstrate is the sheer volume of movements likely to be generated by the proposal

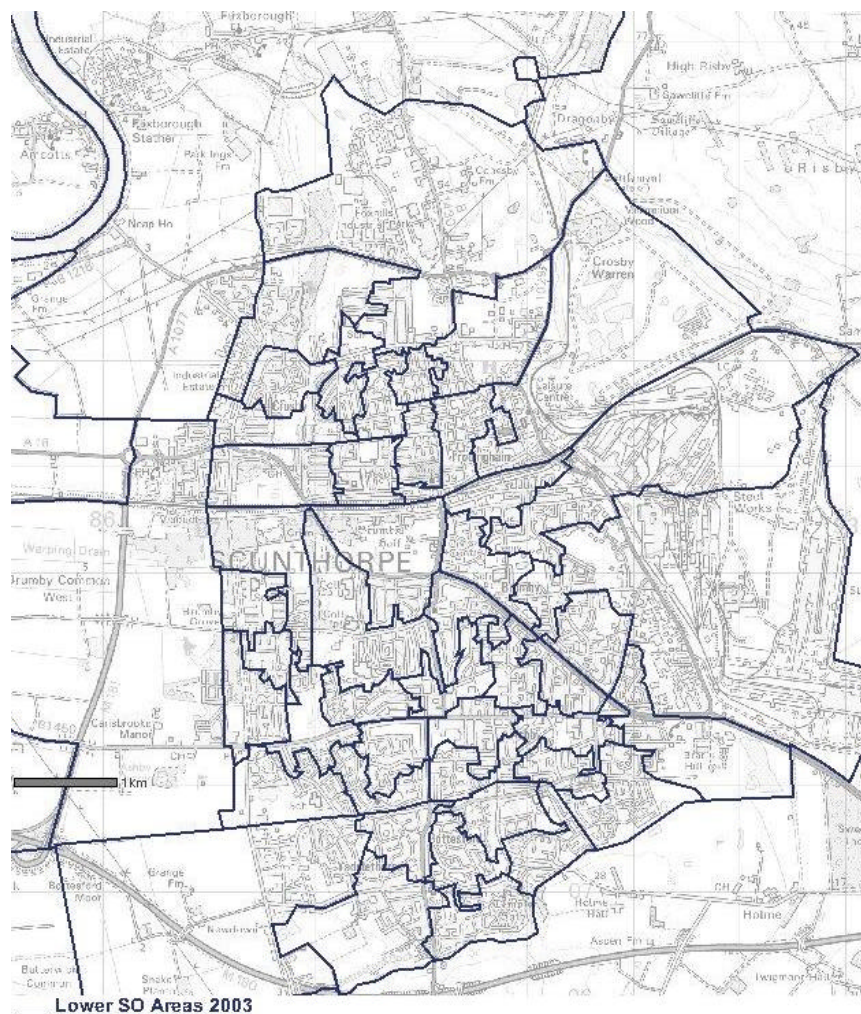
9.2.6 These generations present the level of demand that would be generated by mode if a similar level of sustainable choice were provided to that that exists in the surrounding wards, which as shown in Section 7 is a relatively poor baseline position. The aim of the strategy will be greatly improve these modal splits with a much higher level of sustainable travel.

9.3 Trip Distribution

9.3.1 In terms of where these trips will potentially travel to and from, a gravity model has been developed based on local ward populations, the population of nearby settlements and the distances from the development to these locations.

9.3.2 Figure 9.1 illustrates the local ward boundaries within Scunthorpe and the full gravity model calculations can be found at Appendix C to this report.

Figure 9.1 – Local Ward Boundaries



9.3.3 The resultant gravity model assigns traffic to the following routes:

Table 9.6 – Gravity Model assignments

Route	%	Description of direction of Travel
A1077 (N)	8%	To the north of Scunthorpe
Doncaster Rd (E)	24%	Towards the town centre
Doncaster Rd (W)	5%	To rural areas to the west
Kingsway (E)	18%	To Ashby and Bottesford
W Common Lane (E)	4%	To the western side of the town
Burringham Rd (E)	9%	To the south western side of the town
Scotter Rd (S)	6%	To the south
M180 (E)	15%	Towards Doncaster
M180 (W)	11%	Towards Brigg/Grimsby

10.0 CURRENT AND FUTURE NETWORK PERFORMANCE

10.1 Highway Links

10.1.1 The traffic survey data for the area has been utilised to appraise the performance of the existing highway network. This assessment will be conducted by firstly a review of the link capacity of the network and then specific junction testing at key locations.

Table 10.1 – Existing Link Capacities

Road	Location	2010 AM Two Way Peak Hour Flow	2010 PM Two Way Peak Hour Flow	AM Theoretical Capacity	PM Theoretical Capacity	AM % of Overall Capacity Used	PM % of Overall Capacity Used
A1077 Phoenix Parkway	North of Doncaster Road	1430	1484	4193	4196	17%	18%
Brumby Wood Lane	-	389	494	2759	2760	14%	18%
Brumby Common Lane	-	23	14	2759	2760	1%	1%
Burringham Road	West of Scotter Road	650	950	2760	2760	24%	34%
Burringham Road	East of Scotter Road	776	860	2760	2760	28%	31%
Doncaster Road	East of M181 Junction	1977	2165	4198	4198	24%	26%
Doncaster Road	West of M181 Junction	1014	1050	4197	4199	12%	13%
M180	Between Junctions 2 and 3	3257	3236	4600	4600	24%	23%
M181	-	2031	1805	4600	4600	22%	20%
Messingham Road	-	794	822	2759	2759	29%	30%
Moor Road	-	16	22	2760	2760	1%	1%
Moorwell Road	-	515	610	2758	2760	19%	22%
Priory Road	North of Burringham Road	427	450	2759	2760	15%	16%
Scotter Road	North of Brumby Common Lane	1430	1314	2759	2759	52%	48%
South Park	-	502	904	2758	2760	18%	33%
West Common Lane	-	481	339	2759	2760	17%	12%

10.1.2 As can be seen from the link capacity appraisal, there is generally considerable peak hour link capacity through the local and motorway network in this area. Indeed only the northern section of Scotter Road exceeds 50% of its theoretical link capacity at peak times.

10.2 Junctions

10.2.1 An acceptable level of link capacity is however not necessarily the controlling element in defining the impact of a development. In most cases the capacity of key junctions is reached before the theoretical link capacity is approached, although the latter is a useful guide to indicated levels of spare capacity and potential constraints. Thus further assessments have been conducted on a number of the key junctions to supplement the assessment of the networks current performance.

10.2.2 The three junctions modelled in terms of current performance were;

- The roundabout of A1077 / M181 / Doncaster Road
- The roundabout of Burringham Road /Scotter Road
- The 4 arm junction of West Common Lane/Scotter Road/Brumby Common Lane

10.2.5 Details of the assessments conducted and the results can be found in Appendix D to this report.

10.2.8 As can be seen from the Appendix D results, even these key junctions have some degree of reserve capacity during the network peak hours.

11.0 OVERALL VISION FOR TRANSPORT

11.1 There are a variety of ways in which the transport objectives of the scheme will be met. This section of the report sets out the strategic vision for transport at the Lakes over the next 10-20 years, along with how the vision will influence sustainable travel. This starts by looking at the key requirements and ideas that will be progressed and implemented to form the ultimate strategy. It also identifies the Council's key commitments.

Sustainable Vision 1 - A leading example of sustainable, high quality development

The vision and commitment is to create a development that is of high quality and of benefit to the whole region, particularly given its status and importance in terms of the scale of the proposed housing allocation. In transport terms the aim is to provide a leading example of good practice and the latest technology in respect to sustainable transport and utilise the latest thinking and means of planning and designing such a large scale development. The vision will be to influence travel behaviour and promote sustainable travel through design. This is the overarching commitment that the Council are to adopt in promoting the Lakes project and will be delivered by identifying, monitoring and meeting key strategic targets in terms of modes of travel for the development.

Impact of measure – encourage sustainable movement by providing a leading example of good design

Commitment – to deliver a leading example of sustainable development and to achieve the sustainability targets



Sustainable Vision 2

- Improving the Doncaster Road corridor as a core Public Transport Corridor

At present Doncaster Road is a mixed public transport and car borne corridor, with the latter taking the greater priority and very limited facilities for public transport. The vision for the Lakes and the town generally is that this key corridor to the town centre be developed further to provide a greater level of public transport infrastructure and priority and become the key link between the lakes and the town centre. This aim will be achieved by not only new infrastructure and technology but also measures to take background vehicular traffic off the corridor generally.



Impact of measure – improve journey times and reliability for buses on Doncaster Road, provide a key connection to the town centre

Commitment – to deliver a Public Transport corridor improvement strategy for Doncaster Road

Sustainable Vision 3

- Creation of a central hub or transport interchange within the Lakes and supplement with other smaller hubs

A critical element of the scheme to meet Vision 1 will be the creation of a key transport hub within the Lakes area to serve the new community and provide access to the wider area, forming the link between the town centre and the western expansion. This would be located at the heart of the area and be the focal point of it, with vehicular traffic kept to the periphery of the area and people directed naturally towards other modes. The development will be designed and masterplanned in a manner such that this becomes a key focus of movement internally within the site. This central hub which will be based around the main interchange point will also be supplemented by the creation of other key hubs within the development area.

Impact of measure – provide a focus for sustainable travel from the development and a central hub for interchange between modes

Commitment – to provide a central transport hub and supporting transport focal points within the masterplan for the site

Sustainable Vision 4

- Provision of a Park and Ride at the Lakes

The hub or interchange will be formed by the provision of a new Park and Ride facility. In developing a public transport corridor along Doncaster Road there will be a need to take traffic off the existing Doncaster Road corridor. This will be achieved by attracting commuters, visitors and Lakes residents to use the Park and Ride as a quick, convenient and reliable service to the town centre. This vision will thus compliment Visions 2 and 3 and provide the focus of the main transport interchange

Impact of measure – encourage modal shift away from the private car and reduce vehicular demand into the town centre

Commitment – to deliver a Park and Ride facility to support travel between the town centre and Lakes.

Sustainable Vision 5

- Potential for a new/relocated station within the development

In addition to providing a bus based Park and Ride, there is also the longer term potential to provide a rail based Park and Ride, through the relocation of Althorpe railway station across the river and into the new hub/interchange within the Lakes. This would not only allow park and rail trips to the town, but also support rail trips to the conurbations to the west.

Impact of measure – provide direct access to the rail network for residents

Commitment – investigate fully the potential for a new or relocated rail station.

Sustainable Vision 6 - Creation of a Gateway junction

In order to promote the town and provide some sort of feature to visitors from the west, a key proposal is the formation of a gateway junction of some form.

Impact of measure – act as a gateway to the town and delineate between the motorway and local road networks

Sustainable Vision 7

– Detrunk the motorway and downgrade sections of the M181

This would allow the formation of a new direct access to the motorway for the lakes project and will also aid in reducing the severance between the two main areas of the site. The provision of a new junction will firstly assist the aim of delivering a gateway junction as set out in Vision 6, which will help to promote the town and provide access to the site. From a sustainable travel perspective it will allow the severance created by the highway dominant feature to be reduced.

Impact of measure – provide access to the development, reduce the severance created by the M181.

Commitment – to partially detrunk the M181 to provide access to the site and reduce the severance created by the motorway

Sustainable Vision 8 - Providing strong links to Scotter Road.

There are currently a number of pedestrian and vehicular links to the area from the Scotter Road area, of varying standards and types. The strategy will seek to retain and enhance these as a way of linking the existing community and facilities and the new proposals, encouraging walking and cycling between the two areas and linkage with the existing pedestrian/cycle networks. There exists an opportunity to improve accessibility to services and improve sustainable access for the residents who currently live near or on Scotter Road. It is a crucial planning and transport aim that the development connects to the existing urban areas.

Impact of measure – encourage strong pedestrian linkage between the two areas and promote movements by foot/cycle.

Commitment – to develop the masterplan to provide strong pedestrian and cycle connections to the Lakes Project from the east

Sustainable Vision 9 - Building on the leisure aspects of the proposal

The aim will be to use the leisure elements, i.e. the lake/open space, of the proposal to encourage walking and cycling both within the site recreationally and then along with other complimentary measures, generally as part of peoples day to day lives. The provision of new lakes and quality environment will as a starting point assist in promoting these modes of transport

Impact of measure – encouraging sustainable transport, and prioritising green modes



Sustainable Vision 10 - Creating a best practice example of area wide Travel Planning

The strategy will seek to promote the project as a best practice example of collective travel planning. This will be achieved at an early juncture defining an overall travel plan framework which all subsequent development would be expected to adhere to, particularly with respect to residential travel planning. Provide a mechanism to monitor and influence travel patterns at the development in the future through by the formation of an Area Wide Travel Plan

Impact of measure – adopt the principals of Smarter Choices and Influencing Travel Behaviour by adopting a development wide travel plan.

Commitment – develop, commit to and implement a suitable Area Wide Travel Plan which will set out and manage the TP requirements for all subsequent development.

Sustainable Vision 11 - Higher tech employment and quality of jobs

The provision of commercial development will also aim to seek to readdress the balance between low end and high quality employment that is currently lacking in the study area. This is in order to provide a more varied job offer within the authority and the overall benefits will be much wider than simply transport. It will also help reduce the need for people to travel further afield to quality employment.

Impact of measure – reduce the need to travel

Sustainable Vision 12 –

Provision of complimentary uses as part of a large mixed use development

The sheer scale of the proposal will allow a range of complimentary land uses to be introduced to serve the new community and minimise the need to travel and encourage everyday trips and movements to be made by sustainable modes. This will also provide new facilities for existing residents and improve their accessibility to services and facilities

Impact of measure – reduce the need to travel and encourage shorter trips and sustainable travel

Sustainable Vision 13 –

Innovative Street and Home Zone design

High quality manual for streets led design throughout the whole area, to include home zones, car free zones, shared space and car reduced areas. These will be core aspects of the masterplan design and aim to reduce car dominance and create an environment which reflects the Council's road user hierarchy.

Commitment – to define design standards and expectations that are fully in keeping with this aim and seek to adopt the best practice in this area.



Sustainable Vision 14 – Direct Bus Penetration

Extension of the existing bus services into the site to ensure all residents are within a minimum of 400m of a bus stop and provision of new services where required to support the development and linking of those areas to the key internal transport hubs. The scale of the development will allow the service provision for the entire western side of the town to be reviewed and amended. Also new public transport links or services will link into and enhance the existing settlements and wards in Scunthorpe, where appropriate. The additional population growth will provide a significant boost to the town in terms of potential patrons.

Impact of measure – promote the use of public transport by making it highly accessible, attractive and conveniently located

Commitment – to implement a Public Transport Strategy to provide and encourage commercial bus services to support the site.

Sustainable Vision 15

– Use of ITS technology

A number of the other Visions will rely on the use of ITS technology, for example bus priority at signals, real time information on buses and at stops, UTC systems and CCTV. The use of this technology will be fundamental to the strategy to ensure that these uses maximise the potential modal share. The investment programme for transport will include this technology wherever possible. This approach will not only help the Lakes achieve its aims but also offer much wider benefits to the whole town and authority, where such technology is not as widely used as elsewhere in the UK.

Impact of measure – providing more priority and reducing journey times for buses, improving the flow of traffic, reducing carbon emissions and congestion.

Commitment – to extend the UTC system to cover Doncaster Road corridor and implement bus priority measures along the route.

Sustainable Vision 16

– Broadband provision in every new home

The installation of broadband at every new home to encourage working from home, potentially through the application of a wireless mesh network to serve the Lakes.

Impact of measure – reducing the need to travel and allowing people to work from home

Sustainable Vision 17

- Extend existing pedestrian and cycle network and aid the delivery of Connect 2

The authority is currently constructing the Connect 2 project which will significantly enhance the town's internal pedestrian and cycle routes. The Lakes project presents the opportunities to assist in the delivery of a number of the aspirational routes within the Connect 2 project which will also aid in creating the links to the Lakes required in Vision 8.

Impact of measure – provide a direct connection to the local pedestrian and cycle network and encourage the use of this

Commitment – to deliver the connections to Connect 2.

Vision 18 – Improve access to the villages of Burringham and Gunness

The improved infrastructure generally presents some opportunities to improve access routes to the villages that lie alongside the River Trent. The existing road network in these villages is constrained and of a rural nature, thus it is hoped that some relief can be provided through new improved links.

Impact of measure – provide links to surrounding local communities to encourage sustainable interaction

12.0 DETAILED TRANSPORT STRATEGY

12.1 Overview

12.1.1 Section 11 of the study considers the vision for the Lakes by identifying the broad strategy for Transport. This section looks at the specific measures in more detail and how the vision will be delivered. Reference in setting out the detailed strategy is again made to the core themes of Sustainability, Connectivity, Managing Demand and Balance.

12.1.2 In terms of highway access the detailed strategy is based on the delivery of a new junction on the M181 as the main strategic access to the development and partial detrunking to the north. This issue is considered in greater detail in Section 13 of this report. The remainder of this section sets out the transport measures to support sustainable access and travel to the development.

12.2 Connectivity

12.2.1 Providing a strong link to the existing town centre is critical and is in keeping with the very core of planning and transport policy over the last decade. It is proposed that this is developed by promoting Doncaster Road as a key public transport corridor.

12.2.2 At present the corridor is a Bus Quality corridor, but that is limited to the provision of improved shelters and bus boarding kerbs and relatively minor measures. The lakes proposal will take the provision for buses to another level and change the emphasis of the corridor to provide for buses, pedestrians and cyclists first, and cars as a secondary.

12.2.3 The specific measures proposed to include the provision of a new Park and Ride facility located within the very heart of the Lakes project. This facility will become not only the focal point for travel at the Lakes, forming the main transport interchange, but also provide a facility for existing commuters and shoppers to the town centre..

12.2.4 The benefits will be two fold, firstly providing a high frequency and quality public transport link from the Lakes to the centre of Scunthorpe, encouraging the use of this mode and secondly in removing vehicular trips from Doncaster Road helping to reduce delay and improve bus journey times and reliability. It is proposed that a Park and Ride facility be provided with direct services along Doncaster Road from the Lakes to the town centre and vice versa, These will be new dedicated services, at a regular frequency of approximately 10mins.

12.2.5 This will be supplemented by improvements to the Doncaster Road corridor to improve bus priority and journey times, these will include:

- Providing new bus lanes where land is available
- Providing bus priority measures at junctions
- Providing bus priority technology at traffic signal junctions along the corridor
- Implement Urban Traffic Control (UTC) along the corridor to improve flows
- Providing cycle lanes and advanced stop lines
- Providing real time information at stops and the new interchange

12.2.6 The Council is currently developing it's UTC system on a step by step basis, the first stage of which involves implementing UTC along the Ashby Road corridor through the centre of town. The Lakes transport strategy will include the delivery of UTC along the Doncaster Road corridor, which will provide the authority with the opportunity to co-ordinate the performance of the traffic signal network along the corridor and introduce bus priority measures.

12.2.7 The costs for these various elements, along with all other relevant elements of the strategy are summarised in Table 12.1 at the end of this section, These costs are based on experience of the level of investment made elsewhere to provide similar levels of provision, clearly the development of suitable schemes for many of these elements is a matter of detail and will evolve as the development progresses and is planned in more detail.

12.2.8 Connectivity to Scotter Road is a key vision of the strategy, this will be made practically in terms of road access with new/improved access junctions at the existing junctions of Moorwell Road, Brumby Wood Lane and Burringham Road. This will include potentially:

- an improved junction layout with Brumby Wood Lane with the implementation of a traffic signal crossroad including full pedestrian crossing facilities
- a new roundabout junction at Scotter Road/Moorwell Road
- Improvements to the existing east-west roads across the site, which are currently of a poor standard to include new footpaths and crossing facilities as required.
- New footway and cycleway links to the Lakes

12.2.9 Connections will also be sort from the development to the existing cycle and pedestrian network and particularly the Connect 2 scheme. This will be achieved by delivering the following cycle improvements:

- Providing the aspirational connection to Connect 2 along Brumby Wood Lane
- Providing a connection to Connect 2 along Burringham Road
- Providing a connection to Connect 2 along Doncaster Road

12.2.10 Internal connections between the two development areas will also be important and as noted before the severance created by the M181 will need to be reduced to improve the linkage. This will be achieved by partial detrunking of the M181 to allow the:

- Reduction of speed limit to allow other measures
- Removal of hard shoulders to reduce road width
- Removal of central reserve crash barriers to be replaced with planting
- Provision of two new at grade controlled pedestrian/cycle crossings
- Landscape and Streetscape improvements.
- Provision of on road cycle facilities

12.2.11 The internal design and masterplan of the development will also be very important to ensure internal trips are made by sustainable modes. The development will include a wide range of employment opportunities and local services and facilities and it is vital that people are encouraged to walk, cycle and use public transport to access these facilities. In terms of design these will be achieved by the Authority defining the standards and measures it requires in terms of infrastructure design at firstly the masterplanning stage and also ensuring these are delivered throughout all stages of the developments life cycle.

12.2.12 With such a large element of residential development, the strategy will adopt the very latest in terms of developing Home Zones throughout the proposed residential areas. This will focus on providing an environment where vehicles travel at low speed and people using the street can share the same carriageway. This will create streets where pedestrians, cyclists and vehicles share the space on equal terms, subverting the traditional distinction between carriageway and footway. They will help conceive and define the street as a valuable part of the local community's living space. These principals will be adopted in all new residential areas.

12.2.13 In the longer term the relocation of the existing Althorpe rail station offers huge benefits in terms of connectivity for the whole development to the wider catchment area. Whilst this would be at the potential expense of the much smaller population to the west of the River, the formation of a new rail hub tied in with the park and ride, offers an exciting opportunity to provide a real multi modal interchange which would benefit the proposal and the whole town.

12.3 Managing Demand

12.3.1 Whilst the town's transport network and surrounding motorway network is largely operating with reasonable spare capacity, there will potentially be the need to mitigate the impact of the development at key junctions.

12.3.2 In terms of pure highway impact the following junction improvements are anticipated at this stage in the scheme development process as potential areas of improvement:

- **Signalisation of the M181/Doncaster Road roundabout** – the introduction of signals on the existing roundabout to improve future capacity and provide greater control at this junction.
- **Improvements to Berkeley Circle** – to replace the existing roundabout with a new signal controlled junction and improve capacity and provide new pedestrian crossing facilities at the key junction on the Doncaster Road corridor.

12.3.3 It is noted that whilst there is potential for the Berkeley Circle improvement scheme to be delivered by a housing scheme which already has consent, through the associated planning permission, if that scheme fails to materialise it is proposed that the Lakes project delivers this improvement at the earliest opportunity.

12.4 Sustainability

12.4.1 To compliment the Park and Ride and Doncaster Road improvements, there will also be a need to extend and supplement the existing public transport network to incorporate the proposed site. The additional population created will offer significant opportunities to deliver bus penetration commercially without the need for separate funding. However for the purpose of defining a robust strategy and for costing the required investment in the transport strategy it is assumed that some funds will be made available to provide for bus services as the development evolves.

12.4.2 A detailed public transport strategy will be prepared to support the development which will consider which existing bus services can be extended and/or diverted to support the proposed development, what new services are required and how these can be delivered and funded, in addition to the main Park and Ride service. It will also consider the impact of the Park and Ride services on the existing bus network and how this will allow them to be rationalised to serve the Lakes and town.

12.4.3 Another feature of the strategy will be the development of an Area Wide Travel Plan (AWTP) to encourage modal shift away from the private car. With such a large volume of development it will be critical to get a travel planning framework in place at the outset to ensure all future development adopts the principles of travel planning, is conditioned through the planning process, to provide an acceptable level of commitment and monitoring and also that funds are sort and secured for a central travel planning structure that can co-ordinate the delivery of area wide initiatives.

12.4.4 The Area Wide Travel Plan will ultimately include a wide range of measures and initiatives, which will be applied to the different types of development proposed. This will include preparing a travel plan framework defining the requirements for residential travel plans, school travel plans and workplace travel plans.

12.4.5 It is envisaged that this plan will be run by the council and contributions to its running and overall measures will be sought from each element of development. Similar sustainability and travel planning contributions are now commonplace in many areas and the approach will be based on other similar schemes which secure Section 106 contributions towards such measures/initiatives.

12.5 Costs

12.5.1 Table 12.1 sets out the various elements and anticipated costs of the various elements of the strategy itself, which are over and above the normal development internal infrastructure costs.

Table 12.1 – Strategy Elements Costs

Element	Description	Cost Estimate (inc prelims and contingencies)
Public Transport	Improvements to Doncaster Road corridor	£1,000,000
	Provision and support for new/extended bus services	£250,000
	New Park and Ride facility	£3,750,000
	Investment in UTC system along Doncaster Road	£250,000
	Instigating Area Wide Travel Planning Network	£100,000
Access	New At Grade Junction with the M181	£6,500,000
	New access roundabout on Burringham Road	£550,000
	New access Roundabout on Scotter Road/Moorwell Road	£710,000
	Improvements to junction of Scotter Road/West Common Lane to facilitate Access	£400,000
Highway Improvements	Improvements to Berkeley Circle	£1,500,000
	Downgrading works to M181 post detrunking	£500,000
TOTAL		£15,510,000
TOTAL TO BE FUNDED BY THE SCHEME		£14,010,000

12.6 Phasing and Priority

12.6.1 The phasing of the various schemes will to some degree be reliant on which parcels of land are released for development first and the land uses and densities that are implemented. However it is considered likely that Area 1 (see fig. 8.1) will be brought forward first.

12.6.2 With this in mind and in the context of the overall vision, the various measures and schemes have been prioritised in terms of their relative importance in terms of the overall strategy. The schemes are ranked as HIGH priority (i.e. required at the start of the project), MEDIUM priority (i.e. a core scheme that is likely to be required in the first 5 years of the project), LONG term aspiration (i.e. a longer term aspiration or desirable scheme). Table 12.2 shows the scheme and there resultant priority.

Table 12.2 – Phasing and Priority

Element	Description	PRIORITY
Public Transport	Improvements to Doncaster Road corridor	HIGH (to be a phased programme of works)
	Provision and support for new/extended bus services	HIGH (to be in place from day one and grow with the scheme)
	New Park and Ride facility	MEDIUM
	Investment in UTC system along Doncaster Road	HIGH
	Instigating Area Wide Travel Planning Network	HIGH
	Move Rail Station	LONG
Access	New At Grade Junction with the M181	HIGH
	New access roundabout on Burringham Road	MEDIUM (access related)
	New access Roundabout on Scotter Road/Moorwell Road	MEDIUM (access related)
	Improvements to junction of Scotter Road/West Common Lane to facilitate Access	MEDIUM (access related)
Highway Improvements	Improvements to Berkeley Circle	MEDIUM
	Downgrading works to M181 post detrunking	MEDIUM

13.0 ACCESS

13.1 Overview

13.1.1 As indicated earlier in this report, strategic highway access is also a key consideration in planning for this project. The location of the site in respect to the motorway network is a strong positive, particularly with respect to the potential for attracting commercial business and employment to the site. It is thus natural for the development to seek to utilise and access this existing asset.

13.1.2 It is however acknowledged that achieving some form of direct strategic access involves negotiating a number of key barriers, notably going through the formal detrunking process. In developing a strategy to promote access to the development, a number of options to deliver this have previously been considered. The proposed option which has been identified is detailed in the remainder of this section, along with an update on progress in achieving the necessary statutory clearances.

13.2 Proposed Option for Strategic Access

13.2.1 The proposed option and original Lakes concept, was to construct a new junction on the M181 and partially detrunk the road. Logically this would involve the construction of a new at grade junction on the M181 and the detrunking of the section to the north of this.

13.2.2 In investigating the feasibility of this option, the potential locations and the form of such a junction have been appraised. There are currently four bridges across the M181 and these are used as point of first reference in determining a logical location for a new junction.

13.2.3 It is anticipated that the new junction would be at grade and form the necessary gateway to the town, allowing the remaining section of M181 to the north of it to be detrunked. The detrunking of that section would also be critical in reducing the severance that the motorway creates between the two areas of the Lakes proposal. This would be achieved through measures such as reducing the speed limit, removing the hard shoulder and reducing the road width, providing signal controlled at grade pedestrian and cycle crossings, removal of the central reserve and replacement of the barriers with planting and landscaping. All of which would be aimed at making the road less dominant and encouraging movements between the two areas and a general reallocation of road space.

13.2.4 In terms of a practical location for a new at grade junction, in order to tie in with the existing east-west road network, the most logical location is at the site of the second road bridge north of the M180. Any significant move further to the south would be too close to the M180 slip roads to provide a suitably

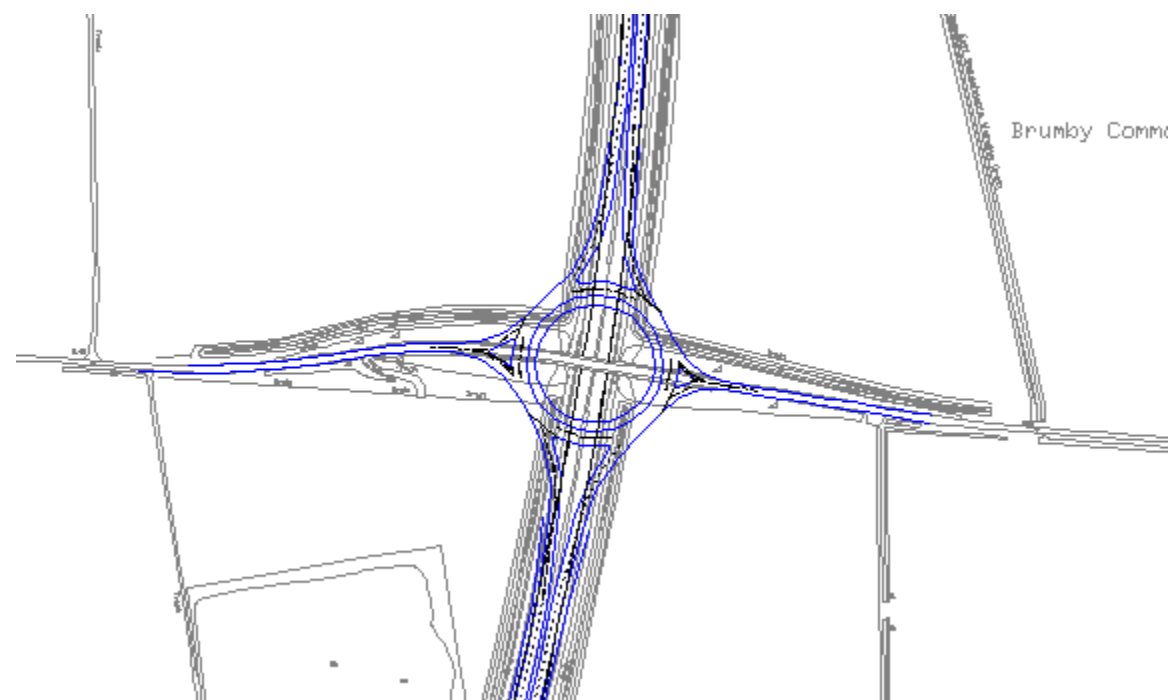
safe distance between the termination of the motorway and the existing M181/M180 junction. Any significant move further to the north would reduce the potential length of detrunking but also be in conflict with the railway bridge and M181/Doncaster Road junction.

13.2.5 Hence it is proposed that the junction be located approximately in the middle of the M181. This would require the removal of the bridge and embankments at this location and the location and layout is shown in the drawings below:

Figure 13.1 – Junction Location



Figure 13.2 – New at grade junction with M181.



13.2.6 The cost of constructing such an arrangement has been assessed in detail and the proposal is estimated to cost £6.5M.

13.2.7 The junction and associated works will:

- Provide a new gateway feature
- Open up the whole Lakes site from an access perspective
- Allow the partial detrunking of the M181 and help reduce severance between the two development areas.

13.2.8 In respect to progressing this objective, negotiations are continuing between North Lincolnshire Council and the DfT and the HA regarding the proposed partial detrunking of the M181. Current negotiations regarding the partial detrunking of the M181 are directly with the DfT regarding a DfT Action Plan, including a statement that will confirm ministerial approval without prejudicing the Secretary of State's final decision on partial detrunking of the M181. NLC are continuing to work with the DfT on the Action Plan mentioned above and this which will lead to the Secretary of State's final decision at the end of a formal detrunking process that can take up to 40 weeks.

13.2.9 This process, led by the DfT was agreed by the Council because the formal detrunking process cannot be instigated or completed in time with the Council's Local Development Framework Core Strategy timetable. The requirement for this secondary process is specifically related to the following position-

- it has been confirmed by the Highways Agency that in principle in operational terms there would be no objection to the creation of a new junction to the M181 and consequential detrunking north of any junction created subject to provisions related to sufficient distance between the M180/M181 junction and a new junction on the M181 to maintain a safe and sufficient operation of both motorways, a new junction arrangement to be constructed to appropriate standards and funding arrangements regarding a pass over of responsibilities and future maintenance to be negotiated. North Lincolnshire Council is also committed to addressing access by sustainable modes of transport, alongside and in addition to the process of partial detrunking.
- it is considered by North Lincolnshire Council that a principal connection to the M181 is required as a preferred option and is essential to enable the full development of the Western Scunthorpe Urban Extension, including the aims and objectives of the revised Lincolnshire Lakes Project.

14.0 IMPACT OF SUSTAINABLE TRANSPORT MEASURES

14.1 Targets

14.1.1 Before appraising the impact of the sustainable measures proposed, it is necessary to identify a series of targets that the strategy will set and commit and this will measure it's success and ensure that further resource is provided as appropriate to influence travel choice at the site.

14.1.2 It is evident from reviewing the observed modal splits in the town and in the surrounding three wards that the dominant mode of travel is the car and the three local wards and town centre all have levels of car use approximately 10% higher than the national average.

14.1.3 For a development such as the Lakes, which is aspiring to be a leading example of sustainable development, the target will be to improve significantly on the modal shares observed locally. The initial baseline position has thus been taken to be the national travel to work modal share with further targets identified to improve further on this baseline position.

14.1.4 Table 14.1 shows the baseline position (i.e. national mode share) and also identifies a short term and long term target for the Lakes project. Two tiers of target have been identified as it will take a considerable period of time for the entire development and transport itself to be implemented.

Table 14.1. – Target Modal Splits

Mode to Work	Baseline Target (National figures)	Short Term Target	Long Term Target
Works mainly at or from home	9%	10%	11%
Underground, metro, light rail or tram	3%	0%	0%
Train	4%	0%	4%
Bus, minibus or coach	8%	11%	12%
Taxi or minicab	1%	1%	1%
Driving a car or van	55%	50%	44%
Passenger in a car or van	6%	6%	5%
Motorcycle, scooter or moped	1%	1%	1%
Bicycle	3%	5%	6%
On foot	10%	16%	16%
TOTAL	100%	100%	100%

14.1.5 The remainder of this section looks at the various measures proposed and how they will assist in meeting these targets.

14.2 Area Wide Travel Plan

14.2.1 One of the key strands of establishing a good level of modal share will be implementing the AWTP. This will initially prepare a framework for travel plans across the site and set out issues such as:

- the required form and structure of Travel Plans (TPs) on the site
- the minimum requirements in terms of proposed measures which will be required for TPs
- targets and objectives for individual plans
- opportunities for area wide initiatives
- an approach to securing contributions and funding for individual TPs and area wide initiatives
- monitoring procedures
- planning condition requirements and commitments

14.2.2 In order to calculate the likely mode shift, due to the area wide travel plan, the DfT's publication "Making Travel Plans Work: Research Report" (2002) was utilised. Table 14.2 provides a summary of the change in mode share observed at a variety of land uses as a result of the travel plan measures.

Table 14.2 - Increase in Sustainable Modes of Transport as a Result of Travel Plan measures

	Car Sharing	Public Transport	Walk	Cycle	Work from home	Reduction in Car drivers
Residential	0%	5%	2.5%	2.5%	0%	10%
Research and Development	3%	5%	2%	3%	0%	13%
Retail	0%	5%	1%	2%	0%	8%

14.2.3 As can be seen this would potentially provide between an 8 and 13% reduction in car drivers.

14.3 Rail Station

14.3.1 The provision of a new rail station within the development will potentially have a significant impact on modal shift at the Lakes. Of the two targeted modal share scenarios, the short term scenario assumes that there will be no rail station and thus travel by rail will be very limited and the longer term scenario assumes that rail provision is available.

14.3.2 As can be seen from the national baseline position, rail access currently represents about 4% of trips. Thus in the short term scenario, with no direct rail station it is presumed that 0% will be achieved as observed in the local wards. In the longer term however, with the aspiration to deliver a station within

the site this would very conservatively allow modal share at the Lakes to reach the national 4% level. However given the location of the station, in the heart of the development area, it would be hoped that a larger percentage could be achieved. Initial discussions have taken place with Network Rail and if a rail station at Lincolnshire Lakes can be achieved it has been confirmed that a transfer of the Althorpe station may be possible in the future. Further negotiation with Network Rail will take place during the masterplan process.

14.4 Bus Travel

- 14.4.1 The Park and Ride facilities will provide a high frequency bus service from the Lakes to the town centre, if it is assumed that buses run every ten minutes in peak periods and that a standard bus can carry 52 passengers This creates the capacity to accommodate 312 bus passengers per hour.
- 14.4.2 The park and ride site would be supplemented by new and diverted services into the development, which would also meet the demand for bus travel within the development.

15.0 CONCLUSIONS

15.1 Pell Frischmann (PF) has been commissioned by the North Lincolnshire Highways Alliance to develop a transport strategy for the Lincolnshire Lakes project, which involves a major western expansion to the town of Scunthorpe.

15.2 This report sets out the proposed transport strategy taking into consideration the existing transport network, current transport and planning policy and the overall vision for the proposal.

15.3 With potentially in excess of 10,000 new residential dwellings and employment land uses proposed on the Lincolnshire Lakes site, the implications in terms of transport, movement and access are significant and are a vital consideration in achieving a sustainable and prosperous development where people work, live and visit.

15.4 The Lakes site will thus represent the delivery of the majority of the entire regions housing allocation over the next 10-20 years.

15.5 In terms of the key constraints and opportunities from which the Lakes site benefits, the following key issues have been identified.

- The area is surrounded by a relatively congestion free and lowly trafficked network
- It has excellent access to the strategic highway network
- There is an existing rail line through the northern section of the site, providing both a barrier and opportunity
- There is currently limited sustainable access for obvious reasons given the current land use
- There is the potential for a large scale development and associated infrastructure investment

15.6 The Transport Strategy's core objectives are to provide people with a genuine choice of travel, promote and prioritise access and facilities in line with the Council's road user hierarchy, reduce the need to travel and promote sustainable development.

15.7. The following key themes will be adopted in trying to achieve these overall transport objectives.

- SUSTAINABILITY
- CONNECTIVITY
- MANAGING DEMAND
- BALANCE

15.8 **Sustainability** will be a key transport theme in the investment programme and masterplanning of the site. Not only in influencing how people travel but also by linking the existing network through planning and design of the internal layout of the development itself.

15.9 **Connectivity** with the existing town centre and urban environment is critical in achieving a sustainable solution. The development will seek to promote strong sustainable mode links along Doncaster Road to the town centre and to the existing Scotter Road urban area.

15.10 The first of these connectivity themes will be developed by building on the existing public transport corridor along Doncaster Road to the town centre. This is already one of the main transport corridors into the town and a designated quality bus corridor. Inward connectivity to the town centre will also need to be supplemented with good strategic connectivity to the main employment areas.

15.11 In terms of **Managing Demand**, a development of this scale will clearly affect the operation of the wide transport network and its impact will need to be mitigated by new infrastructure and facilities across all modes of travel to create additional capacity to cater for the new demand the site will generate and by the promotion of alternatives to the car for both the development and the town in general.

15.12 For a site of this nature and location, achieving **Balance** will also be a theme of the strategy. In a location where motorway access is excellent and dominant, it is imperative that sustainable access is raised to the same level.

15.13 The proposed development will generate a considerable volume of new travel movements, increasing the pressure on the town's existing transport network, but also present opportunities to significantly enhance the same network.

15.14 The overall vision for transport to the Lakes will be achieved by:

- Providing a leading example of a sustainable, high quality development
- Improve the Doncaster Road corridor as a core Public Transport Corridor
- Creation of a central hub or transport interchange within the Lakes
- Provision of a Park and Ride at the Lakes
- Potentially relocate the Althorpe Railway station within the development
- Creation of a new Gateway junction
- Partial detrunking of the M181 motorway and downgrade sections of it
- Provide strong pedestrian/cycle links to Scotter Road.
- Build on the leisure aspects of the proposal to encourage cycle/walking
- Create a best practice example of area wide Travel Planning
- Provide Higher tech employment and quality of jobs to reduce the need travel further afield
- Provision of complimentary uses as part of a large mixed use development
- Provision of Innovative Street and Home Zone design
- Direct Bus Penetration to serve the new communities
- Use of ITS technology
- Broadband provision in every new home
- Extension of the existing cycle network
- Improving access to the villages of Burringham and Gunness

15.15 Providing a new junction on the M181 and detrunking the northern portion will:

- Provide the new gateway feature
- Open up the whole Lakes site from an access perspective
- Allow the partial detrunking of the M181 downgrade sections of it and provide an at grade junction at the point of detrunking.

15.16 The strategy includes a range of detailed measures which will be implemented to support the overall vision. These include the provision of a new Park and Ride facility, a new Gateway access mid way along the M181, detrunking works to reduce the severance created by the section of motorway to the north of the new gateway, an area wide travel plan, improvements to local junctions, new accesses to serve the development and various other measures described in Section 13 of this report.

15.17 The overall cost of the various measures within the transport strategy is estimated at approximately £14M.