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S. Jackson and Sons (Holme)

SUBMISSION TO THE EXAMINATION OF THE NORTH LINCOLNSHIRE HOUSING AND EMPLOYMENT LAND ALLOCATIONS DPD

Matter 3 – Housing Allocations – Scunthorpe Area Omission Sites

Land at Holme Lane, Scunthorpe (SITE REF 36-7)

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1.0 INTRODUCTION

1.1 This submission is made on behalf of our client S. Jackson and Sons in relation to their site at Holme Lane, Scunthorpe (site ref: 36-7).

1.2 This submission specifically responds to the Inspectors Issues and Questions Paper on the topic areas for Matter 3 – Housing Allocations, in particular Scunthorpe Area Omission Site. It should be considered alongside previous representations made on behalf of our client.

1.3 In this session we will confirm that, based on the submissions made to Matter 2 of the Hearing Process confirming that the Council do not currently have a five year housing land supply in accordance with the Core Strategy and national policy (the 'Framework'), it will be necessary to allocate additional sites for housing. Within this context, our Client's site at Holme Lane, Scunthorpe should be allocated as a deliverable and logical extension of the existing settlement boundary.

1.4 The allocation of this site is considered to be sound in accordance with the test set out in paragraph 182 of the Framework.

2.1 HOUSING ALLOCATIONS

Scunthorpe Area Omission Sites – Holme Lane (site ref: 36-7)

2.2 As set out in detail in the previous representations prepared by DLP on behalf of S. Jackson and Sons, the land at Holme Lane (LPA site ref: 36-7) is considered to represent a deliverable and logical extension to the boundary of the Scunthorpe Urban area in accordance with the Framework tests of soundness.

2.3 In terms of deliverability it can be demonstrated that the site is deliverable against the tests in the Framework (footnote 12):

Suitable location for housing development

2.4 The 2014 SHLAA identified that the sole reason for the rejection of the site as a proposed allocation was on the basis of access restrictions.

2.5 This issue has been thoroughly investigated as set out in our previous representations and the proposed second access from the roundabout on Lakeside Parkway to the north already provides an appropriate junction (as confirmed in the Transport Strategy – Appendix 2). The intervening Land is owned by the council and it is considered that the council will enter into an agreement to provide access to the south across the beck.

2.6 This second access will further improve the sites accessibility to the retail and leisure facilities to the north as well as the town's main employment centre and town centre.

2.7 The earlier work prepared for this site was not challenged by the Council's highway in any meaningful way, the councils suggestion that the site was remote now has to be seen in context of the proposed size of the town with the Lincolnshire Lakes extension and the proposed access to the north.

2.8 The site is well contained by the landscape form and has the opportunity to provide not just additional housing but also a linear park along the side of Bottesford Beck as well as other local amenities.

2.9 Given the physical constraints to further development to the east and north of Scunthorpe and taking account of delays with the delivery of the Lincolnshire Lakes development, it

is considered that the allocation of the Holme Lane site is fully justified and provides an opportunity for early release of housing land, which is not constrained by complex ownership arrangements.

2.10 The maximum capacity of the site has been estimated to be between 1,225 and 1,610 dwellings. This figure reflects physical constraints on site and achieves a density which is consistent with the adjacent existing urban areas. It also represents a significant and co-ordinated contribution to housing delivery in Scunthorpe and offers the opportunity to provide a comprehensive scheme including appropriate infrastructure and amenities.

2.11 An illustrative Master Plan that shows the immediately deliverable element of the site has been previously submitted as part of representations made in June 2014. Appendix 1 confirms the extent of the proposed allocation, with the cross-hatched area in the northern part of the site to be allocated with the potential to deliver at least 1,225 dwellings. It should also be brought within the Scunthorpe settlement limit in the HELA document. Additional land to the south should be identified for potential later release in the next plan period.

2.12 In summary, the site presents an opportunity to secure early delivery of housing in accordance with the strategic vision set out in the adopted Core Strategy. The merits of the site and this approach include:

a. Lower risk of flooding compared to many other locations the site being almost entirely in Flood Zone 1;

b. Proximity to the existing main urban area of Scunthorpe;

c. Next to a strong market area with a record of delivery.

A reasonable prospect that the site is available

2.13 The site is in a single ownership and the landowners have promoted the development of this site over a number of years demonstrating that the site is deliverable. While the owners have been approached by a number of developers they are wishing to promote the site through to allocation before entering into subject-to-planning contracts.

Be viably developed at the point envisaged.

2.14 The site is located adjacent to one of the best market areas in Scunthorpe, part of the area immediately to the other side of the beck that forms the northern boundary to the site which we have been involved in (Timberlands) has been successfully delivered by a number of different national developers over the last decade or so. At the time there was heathy competition for this site.

2.15 In terms of costs associated with bringing the site forward, there have been no significant costs identified. The site has a lower risk of flooding compared to many other locations as it is almost entirely in Flood Zone 1. The only part of the area to be excluded from development lies immediately adjacent to the Beck and will be alternatively utilised for a linear public park and additional sustainable drainage solutions.

2.16 In highways terms, as part of the road layout for the retail and residential development to the north (Lakeside), a roundabout has been provided that will facilitate access from our client's land directly north providing easy access to the facilities immediately to the north of the site, as well as access to the wider employment opportunities and the town centre. This will entail a crossing but our approaches to the Environment agency and the

Drainage Board suggest that the cost of such a structure will not be inhibiting on the development of the site.

Conclusion

2.17 Not only is the site deliverable in the terms of the Framework but we would argue that it is necessary to include the site in order to make the plan sound for the following reasons:

Positively prepared

2.18 As set out in DLP's submissions made on behalf of our client to Matter 2 of the EiP Hearing, the Council is unable to demonstrate a five year supply of housing land, and has consistently under-delivered against the housing target. As a result the housing contingency figure set out in Core Strategy Policy CS7 is triggered and additional land should be allocated now within the Scunthorpe Urban Area to deliver 1,300 dwellings to be in accordance with the Core Strategy.

2.19 To plan positively within this context, our Client's site at Holme Lane should be allocated for housing based on the contribution it can make to delivery of housing within the Plan period. Previous representations submitted by DLP in relation to the site have confirmed that it is suitable, available and deliverable within the plan period and the opportunity should be taken to support the delivery of housing in this location.

Justified

2.20 It is not considered that in its present form that the plan represents the most appropriate strategy, when considered against the reasonable alternatives. Based on current evidence it is clear that there is a continuing undersupply when considered against the Core Strategy requirement. To enhance delivery there needs to be an increase in the number and location of sites. To ignore the more market attractive location in the main urban area which has clear development potential cannot be justified in these circumstances.

Effective

2.21 The submitted plan is not effective it is too reliant upon the performance of site outside of the submitted document to deliver the Core Strategy Housing Requirement. It does nothing to address the current level of undersupply the allocation of this site will however deliver at least 1,220 dwellings within the timescale of the plan including 120 with the next five years (this allows one year for revision of the submission plan, two years for consents to be achieved and two years of build from the two site accesses by different builders at 30 dwellings a year each). If like at Timberlands there are more than two developers on site at any one time then this contribution could rise to 240 dwellings.

Consistent with National Policy

2.22 The site is considered to represent a sustainable extension to Scunthorpe in an accessible and attractive location.

2.23 The allocation of the site would increase confidence in the delivery of the needed housing requirement in the district and the additional provision would support the aspirations of a number of Core Strategy policies including CS1, CS2, CS3, CS7, and CS8.

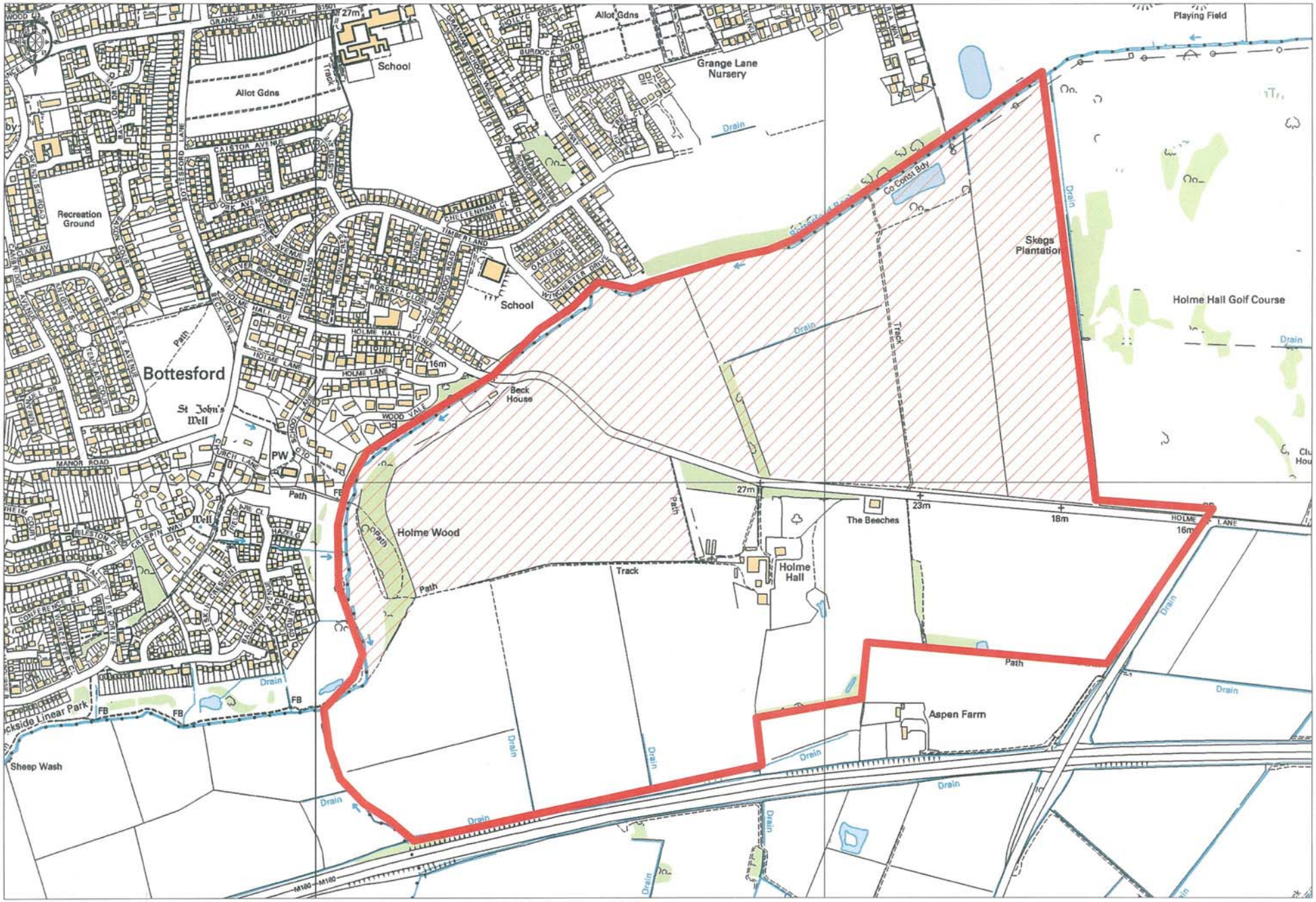
2.24 The area of the site identified in paragraph 2.11 and appendix 1 of this submission has the potential to deliver at least 1,225 dwellings. For the reasons set out above, the site at Holme Lane should be included as a housing allocation in the Housing & Employment Land Allocations DPD.

Proposed Change to ensure the Soundness of the DPD

Our client, S. Jackson and Son's land at Holme Lane, Scunthorpe should also be included as a housing allocation within the Housing and Employment Land Allocation document.

The housing allocation at Holme Lane should be based on the cross-hatched area shown within the red line plan in appendix 1 of this submission. This area should also be included within the Scunthorpe Urban Area settlement boundary.

Appendix 1 – Site Allocation Plan



This map was created with Promap

Appendix 2 – DLP Transport Report

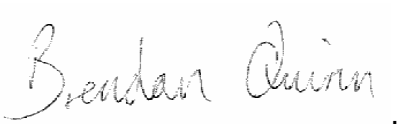
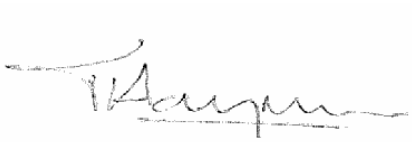
For and on behalf of
S JACKSON AND SONS

TRANSPORT STRATEGY REPORT
LAND AT HOLME LANE, SCUNTHORPE

Prepared by
DLP Transportation Ltd.

July 2010

S JACKSON AND SONS

Prepared by:		Brendan Quinn Associate Transport Planner BSc (Hons), MSc, CMILT
Checked by:		Tim Hayman Transport Director IEng AMICE MCIHT
Approved by:		Tim Hayman Transport Director IEng AMICE MCIHT
Date:	July 2010	First Issue

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EXECUTIVE SUMMARY

DLP Transportation Ltd has been appointed by S Jackson and Sons to develop a transport strategy in relation to the potential development of land at Holme Lane, Scunthorpe for up to 3,000 residential dwellings. The site is included within the Councils SHLAA and it is proposed that it should be considered as a potential development site within the Core Strategy to enable delivery of the proposed site as part of the overall housing strategy for Scunthorpe.

General constraints, in relation to highway/transport infrastructure of Scunthorpe have been identified by North Lincolnshire Council and these include existing traffic congestion on north/south routes into the town, existing traffic congestion at the Berkeley and M181 junctions at peak times, existing congestion at the roundabout junction near to the Morrisons supermarket at peak times.

Specifically in relation to the land at Holme Lane the Highways Authorities comments were that the existing infrastructure serving the site is inadequate and that accessing the site off Holme Lane or Redwood Way would not be acceptable. The preferred option would be to access the site from the 4th Roundabout on the lakeside spine road (the one before Wisteria Way).

This Transport Strategy report sets out the sustainability credentials of the site and examines potential transport impacts and how these could be addressed to enable the site area to be included within the Core Strategy

In assessing off-site facilities to the site, it was found that there were a number of potential barriers to walking and cycling from the proposed site and these are:

- No pedestrian/cycleway crossing the bridge on Holme Lane on roads to the south of Bottesford Beck.
- There is a lack of formal pedestrian and cycle crossings in the vicinity of the site along Timberland e.g. pedestrian islands, signal controlled crossings
- There is a lack of formal pedestrian and cycle crossings in the vicinity of the site along Wisteria Way also.
- Poor signage for cycle routes/facilities.

To enhance the walking and cycling network in the area, improvements are planned which address the above barriers and ensure more attractive and safer routes for pedestrians and cyclists. These improvements include pedestrian islands along Wisteria Way in the vicinity of the site, Signal controlled toucan crossing on the Wisteria Way arm of the roundabout that would connect with the access road for the site to link in with the footway/cycleway network to the north of the site carriageway providing safe and direct movement to/from Morrisons etc to the north and improved signage for cyclists to include directional signs and map of area detailing key services/facilities in the area.

There is currently an adequate level of service of running near the site, but it is recognised that public transport accessibility to/from the site would need to be improved as part of the development proposals. This would include additional bus services for service 22 to enable a bus frequency of every 10-15 minutes. This will

require approximately 4-5 additional buses per hour which will not only make the service more attractive to encourage existing car drivers to catch the bus but it will also increase capacity to accommodate the users generated by the proposed development.

Notwithstanding the above, the proposed site is located in an area with a wide variety of services/facilities within walking and cycling distance. The accessibility of the proposed site can be demonstrated in its compliance with the Institute of Highways and Transportation (IHT) “Guidelines for Providing for Journeys on Foot” (2000) in relation to acceptable walking distances to services/facilities.

The area to the north of the site benefits from excellent cycle links and the site is located within close proximity to Scunthorpe’s local cycle networks. Designated cycle paths are located adjacent to the northern edge of the site on Timberland. The cycle lanes are a combination of ‘on-road’ and ‘traffic free’ paths.

In relation to the IHT guidelines for walking, the site is within the recommended target accessibility ranges for the majority of services/facilities such as shopping, education, travel and employment facilities. For the majority of these services/facilities, the walk time to access these facilities is 20 minutes or under and are within the recommended maximum walking distance. For cycling all of the above facilities can be accessed in 10 minutes or under.

To encourage sustainable travel to/from the site, a Travel Plan is proposed to be implemented, which would include a package of measures to be implemented before and after occupation. Before occupation, this would include Travel Plan information packs on completion of purchase for residential dwellings, which could provide information of walking and cycling routes in the area, location of public transport facilities and timetables etc. After occupation the measures could include setting up a residents Travel Plan group, cycle training, health promotion of walking and cycling, car club.

There are highway constraints in terms of width, layout, alignment and gradient of Holme Lane and a bridge over the Bottelsford Beck. This is in relation to its ability to accommodate development traffic, both vehicular and non-vehicular, in terms of traffic capacity and road safety. To overcome these barriers, as part of the development, Holme Lane will be widened or replaced by a new road serving the development and also a new wider road bridge constructed across the Beck.

The proposed improvements to Holme Lane and the road bridge would provide a road of an acceptable standard and as such could be used by the development. Another access point for the development would be achieved by the construction of a road link over Bottelsford Beck in the north east corner of the site connecting to one of the existing roundabouts on Wisteria Way. This route was considered previously as part of a more strategic route which was promoted by the Council to connect with the M180.

Through discussions with North Lincolnshire Council, a number of key junctions remote from the site have been identified as either currently or have the potential for capacity issues and congestion with the addition of further traffic. Therefore, consideration has been given to the potential impacts of the proposed development upon five key junctions, including the junctions identified by the Council as having existing capacity issues.

Three of the five junctions in Scunthorpe that were analysed operate significantly over capacity on one or more of their arms ***regardless of the development being in place***. The other two junctions are shown to operate within their capacity even with the development being in place. The development traffic generation is very much a worst case scenario and in reality the phasing of development will mean that the impact will be significantly less.

Improvements are therefore likely to be required to these junctions in Scunthorpe that would help to increase capacity and reduce congestion, which could include partial or full signalisation and increasing flare lengths on certain arms at each junctions that are operating at over capacity.

It is considered that the development at Holme Lane would not have to fund all of the works as 3000 dwellings would only be a proportion of the dwellings planned to be built within Scunthorpe. Other developments are likely to affect some or all of these junctions and a co-ordinated approach to the developer contribution of highway improvements by the Council is recommended.

It is anticipated that with a robust and comprehensive Travel Plan for the site, including off-site improvements to off-site junctions, the walking and cycling network and through improvements to the existing bus services, the overall impact of the development would be minimised. The of-site improvements will not only benefit the users of the proposed site and ensure accessibility but it will also improve accessibility for those that work, live etc. surrounding the site through such measures as additional bus services in the area, thereby reducing car use in a wider context than just the development generated car use. Such an approach would help to ensure that the ‘net’ impact of the development proposals upon the existing network would be minimised.

1. INTRODUCTION

Brief

1.1 DLP Transportation Ltd has been appointed by S Jackson and Sons to develop a transport strategy in relation to the potential development of land at Holme Lane, Scunthorpe for up to 3,000 residential dwellings.

1.2 The development of land at Holme Lane will be delivered through the Core Strategy of the North Lincolnshire Local Development Framework (LDF). A plan showing the location of the proposed site is attached as **Figure 1**.

Background

1.3 The site was one of the sites considered within the Councils SHLAA and it is proposed that it should be considered as a potential development site within the Core Strategy.

1.4 A number of comments were made by the Council in their assessment of the site within the SHLAA, in respect of potential issues of sustainability in creating an urban extension in this location. The general constraints, in relation to highway/transport infrastructure of Scunthorpe were considered to be:

- Existing traffic congestion on north/south routes into the town, particularly in peak times and when a sporting event is being carried out at the football ground.
- Existing traffic congestion at the Berkeley and M181 junctions at peak times.
- Existing congestion at the roundabout junction near to the Morrisons supermarket at peak times.

1.5 Specifically in relation to the land at Holme Lane the Highways Authorities comments in the SHLAA were as follows:

- Accessing the site off Holme Lane or Redwood Way would not be acceptable. Our preferred option would be to access the site from the 4th Roundabout on the lakeside spine road (the one before Wisteria Way).

.1.6 Comments were also made by the Highway Authority in relation to the site at Holme Lane within North Lincolnshire LDF Housing and Employment land allocation DPD pre-submission second-stage and these were as follows:

- Potential significant traffic generation would warrant possible inclusion in Masterplan/Scunthorpe Area Transport Study.

- The existing infrastructure serving the site is inadequate.

1.7 The SHLAA assessment of possible urban extensions looked at broad locations to the north, east, south and west of Scunthorpe. The outcome for all but the west of Scunthorpe was that the negative issues outweigh the positive, in respect of their sustainability.

Purpose and Structure of Report

1.8 This report sets out the sustainability credentials of the site and examines potential transport impacts and how these could be addressed to enable the site area to be included within the Core Strategy

1.9 A site with the potential for up to 3,000 dwellings will have implications in terms of highways and transportation requirements within the Scunthorpe area and beyond. Therefore, it is imperative to demonstrate that the above concerns can be addressed to achieve a sustainable development, which could be acceptable for inclusion within the Core Strategy. This Transport Strategy Report sets out the initial concept of the highways and transportation requirements of the development that will enable the delivery of the supporting transport infrastructure required to serve the proposed development. Further highways technical analysis would be demonstrated as the master plan is finalised through a future, more detailed Transport Assessment.

1.10 This Transport Strategy is based on best practice guidance, the focus being on encouraging environmental sustainability, managing the existing network and mitigating the residual impacts of the proposed development. This report has been prepared to assess the development proposals in relation to the adjacent highway and transport infrastructure. The structure of the remainder of the report is summarised below:

- Section 2: Outlines the relevant planning policies against which the transport issues of the proposed development must be measured;

- Section 3: Describes the existing conditions surrounding the site;

- Section 4: Describes the development composition and assesses the impact of the development generated traffic and any mitigation works required;

- Section 5: Provides a summary of the report and identifies the main conclusions that can be drawn.

2. POLICY FRAMEWORK

Introduction

2.1 A review of national, regional and local planning and transport strategies has been conducted to ensure the development proposals adhere to the most current and relevant policy guidance.

National Guidance - Planning Policy Statement 1: Delivering Sustainable Development (2005)

2.2 The creation of sustainable communities is at the heart of all Government policy concerning new developments. PPS 1 provides a general overview of the principles of the English planning system particularly focussing on the implementation of sustainable development through the planning process. This is most clearly evident in paragraph 27 which states the general approach to delivering sustainable development. Bullet point (v) provides for improved access for all jobs, health, housing, education, shops, leisure, community facilities, open space, sport and recreation, by ensuring that new development is located where everyone can access services or facilities on foot, bicycle or public transport rather than having to rely on access by car.

2.3 Bullet point (vii) advocates reducing the need to travel and encouraging accessible public transport provision to secure more sustainable patterns of transport development. Planning should actively manage patterns of urban growth to make fullest use of public transport and focus development in existing centres and near to major public transport interchanges. As such, development plan policies should promote development that creates socially inclusive communities and should address accessibility for all members of the community.

National Guidance - Planning Policy Statement 3: Housing

2.4 Local Planning Authorities should create more sustainable patterns of development by building in ways which exploit and deliver accessibility by public transport to jobs, education and health facilities, shopping, leisure and local services. LPAs should also seek to reduce car dependence by facilitating more walking and cycling, by improving linkages by public transport between housing, jobs, local services and local amenity and by planning for mixed use.

2.5 One of the key criteria in assessing potential development sites is the location and accessibility of the site to jobs, shops and services by modes other than the car and the potential for improving such accessibility of the site to jobs, shops and services by modes other than the car and the potential for improving such accessibility. One of

the key determinants of a sustainable residential environment is it's connectivity with public transport services.

National Guidance – Planning Policy Guidance 13 'Transport'

2.6 PPG 13 overarching objectives are to:

a) promote more sustainable transport choices for both people and for moving freight;

b) promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and

c) reduce the need to travel, especially by car.

2.7 Paragraph 6 states that local authorities should make the fullest use of public transport, locate daily facilities to be accessible by walking and cycling, ensure development offers a realistic choice of access by public transport, walking and cycling, use parking policies and other measures to promote sustainable travel and reduce reliance on the car and give priority to people over ease of traffic movement. Local authorities should give particular emphasis to accessibility to ensure that sites will offer realistic, safe and easy access by a range of transport modes and not exclusively by car (pp 19).

2.8 New development should help to create places that connect with each other sustainably, providing the right conditions to encourage walking, cycling and the use of public transport. People should come before traffic (pp28).

2.9 Accessibility needs of disabled people should be met in all developments by taking account of needs in access and location arrangements of parking spaces, public transport facilities and infrastructure (pp31). Levels of parking provided in a development should be part of a package of planning and transport measures to promote sustainable transport choices (pp51).

National Guidance - The Transport White Paper

2.10 In July 2004, another Government White Paper entitled 'The Future of Transport' was published. This looks at the factors that will shape travel and transport over the next thirty years and sets out how the Government will respond to the increasing demand for travel, maximising the benefits of transport while minimising the negative impact on people and the environment.

Regional Planning Policy – Yorkshire and Humber Regional Spatial Strategy

2.11 The focus of the Yorkshire and Humber Plan Regional Spatial Strategy to 2026 (May 2008) is on promoting regeneration and renewal and promoting a wider choice in travel options, thereby reducing the reliance on the private car and improving sustainability. This is reflected in the following policies:

- Policy T1 Personal Travel Reduction and Modal Shift. This policy sets out a variety of potential demand management mechanisms to encourage travel reduction and modal shift ;

- Policy T2 Parking. This sets out parking policies to help manage the demand to travel, support the use of public transport and improve the quality of place through a consistent approach to parking management; and

- Policy T3 Public Transport. This policy set out to safeguard and improve public transport infrastructure and services

Local Policy – The Second North Lincolnshire Council Local Transport Plan

2.12 At a local level, The Second North Lincolnshire Council Local Transport Plan details the Accessibility Planning Strategy for the area. This sets out the need for developments to take place that are located with access in mind, ensuring sustainable, equitable access for all. The Accessibility Strategy has five key objectives, which are:

- Improve access to key services, including healthcare, employment and education;

- Improve access to travel information;

- Widen people's travel horizons;

- Better integrate transport and land use planning to reduce the need to travel; and

- Work with partners to deliver more services locally.

3. EXISTING CONDITIONS

The Development Site

3.1 The overall site area comprises land with a combined total of just under 140 hectares and is located in south east Scunthorpe, in the ward of Ridge. The proposed development area within the site extends to approximately 74.44 hectares. The site is currently agricultural land and is situated immediately to the south of the urban area of the town, between the Bottesford Beck and the M180 motorway to the south. The site area comprises a number of fields and the substantial properties of Holme Hall and Holme Farm. Other residential properties immediately adjacent to the site are Beck House near to the bridge over Bottesford Beck and The Beeches which is to the east of Holme Hall.

3.2 The site is bisected by Holme Lane, which runs west to east. This is the only adopted highway within the site and the road from which vehicular access is currently gained. To the east of the site there is a golf club, to the west the urban area of Bottesford and further open fields and to the south the M180 motorway. The location of the site is shown in **Figure 1**.

Surrounding Highway Network

3.3 In addition to Holme Lane the site is bounded by the M180 to the south, Bottesford Beck to the north and west and Holme Hall Golf Club to the east. The proposed site is approximately 6 km from the centre of Scunthorpe.

3.4 Through discussions with North Lincolnshire Council, a number of key junctions remote from the site have been identified as either currently or have the potential for capacity issues and congestion with the addition of further traffic. Therefore, consideration has been given to the potential impacts of the proposed development upon:

- The A18 Doncaster Road/M181/A1077 Phoenix Way roundabout junction (labelled **junction 1**);
- The A18 Doncaster Road/Scotter Road/A18 Kingsway roundabout junction (labelled **junction 2**);
- The A18 Queensway/A18 Kingsway/Ashby Road roundabout junction (labelled **junction 3**);
- The Ashby High Street/The Link/Burringham Road/Ashby Road signalised crossroads junction (labelled **junction 4**); and

- The A18 Mortal Ash/Lakeside Parkway/Queensway/Brigg Road roundabout junction (labelled **junction 5**).

3.5 The location of these junctions in relation to the site is shown in **Figure 2.**

Existing Trip Generation 2010

3.6 To assess the impact of the proposed development on the above junctions, it was first necessary to assess the existing traffic movements on the network under existing conditions.

3.7 Traffic turning count data was obtained from NLC for Junctions 1 to 5 for the hours between 0700 to 1900 to enable an assessment of the current operation of the junctions. None of the surveys were carried out in 2010 therefore a growth factor applicable to the year of survey, was applied to each of the junctions survey data to bring traffic levels in line with 2010. Each factor is calculated from a mean NRTF factor with a TEMPRO factor adjustment for the Scunthorpe area. **Appendix 1** details the turning count data and also provides a summary of the turning count movements for Junctions 1, 2 3, 4 and 5 in the AM and PM peak periods together with a summary of the growth factors used for each junction.

Existing Operation of Junction 1: A18 Doncaster Road/M181/A1077 Phoenix Way roundabout

3.8 Currently, Junction 1 is operating within its operational limits in both the AM and PM peak hours. **Table 1** provides a summary of the operation of the junction in the AM network peak period and **Table 2** summarises the operation of the junction in the PM peak. The ARCADY outputs for this junction are shown in **Appendix 2**.

Table 1 – Existing Operation of Junction 1 In The AM Peak

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/Capacity (RFC)
Doncaster Road (East)	13.23	26.53	0.499
M181	21.60	33.92	0.637
Doncaster Road (West)	11.92	19.22	0.620

Phoenix Way	7.15	17.02	0.420

Table 2 - **Existing Operation of Junction 1 In The PM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/Capacity (RFC)
Doncaster Road (East)	17.80	26.09	0.682
M181	13.52	31.10	0.435
Doncaster Road (West)	6.86	24.02	0.286
Phoenix Way	16.19	22.80	0.710

Existing Operation of Junction 2: A18 Doncaster Road/Scotter Road/A18 Kingsway roundabout

3.9 Currently, Junction 2 is operating within its operational limits in the AM peak hours on the Doncaster Road (East) arm, Kingsway arm and the Scotter Road (South) arm. However, the Doncaster Road (West) arm and in particular the Scotter Road (North) arm is operating significantly over capacity which is demonstrated by the RFC value output. The ratio of flow to capacity (RFC) is the ratio of demand to capacity and measures the degree of saturation of the junction arms. Optimal junction performance is achieved when an arm has an RFC of 90% or less. If the RFC exceeds 90% the junction arm reaches saturation point and demand outweighs capacity. This can cause queuing and delays. In the PM network peak hour all arms are operating within their operational limits apart from Scotter Road (North), which again is significantly over capacity with significant queuing and delay. **Table 3** provides a summary of the operation of the junction in the AM network peak period and **Table 4** summarises the operation of the network PM peak. The ARCADY outputs for this junction are shown in **Appendix 2**.

Table 3 - **Existing Operation of Junction 2 In The AM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	5.41	18.54	0.292
Kingsway	9.05	22.09	0.410
Scotter Road (South)	18.02	21.62	0.834
Doncaster Road (West)	18.11	20.10	0.901
Scotter Road (North)	9.74	4.68	2.079

Table 4 - **Existing Operation of Junction 2 In The PM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	10.37	17.82	0.582
Kingsway	11.16	18.51	0.603
Scotter Road (South)	6.65	19.40	0.343
Doncaster Road (West)	18.78	27.92	0.673
Scotter Road (North)	10.45	6.19	1.687

Existing Operation of Junction 3*:* A18 Queensway/A18 Kingsway/Ashby Road roundabout

3.10 Currently, Junction 3 operates within its operational limits on all arms in the AM and PM peak hours and this is shown in **Tables 5 and 6**. The ARCADY outputs for this junction are shown in **Appendix 2.**

Table 5 - **Existing Operation of Junction 3 In The AM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	21.83	29.68	0.735
Ashby Road (South)	13.68	17.02	0.804
A18 Kingsway	8.03	17.19	0.467
Ashby Road (North)	13.96	26.34	0.530

Table 6 - **Existing Operation of Junction 3 In The PM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	11.85	25.06	0.473
Ashby Road (South)	11.05	22.54	0.490
A18 Kingsway	9.91	22.53	0.440
Ashby Road (North)	21.81	26.01	0.838

Existing Operation of Junction 4: Ashby High Street/The Link/Burringham Road/Ashby Road signalised crossroads junction

3.11 Currently junction 4 does not suffer from any adverse delays or queuing vehicles. The results indicate that it would operate satisfactorily during both the morning and evening peak periods. The full details of the capacity analysis for this junction can be found in **Appendix 2**. The LINSIG outputs for the AM (0800-0900) and PM (1700-1800) network peak periods is summarised in **Table 7**.

Table 7 – Existing Operation of Junction 4 in The AM Peak and PM peak

	Arm A		Arm B		Arm C		Arm D	
Period	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**
AM	**26.5**	**3.6**	**20**	**0.9**	**41.1**	**6.0**	**40**	**4.7**
PM	**49.1**	**6.6**	**23.3**	**1.7**	**44.2**	**4.9**	**49.2**	**7.7**

Existing Operation of Junction 5: A18 Mortal Ash/Lakeside Parkway/Queensway/Brigg Road roundabout junction

3.12 Currently, in the AM network peak hour, Junction 5 operates within its operational limits on all arms except the A18 Mortal Ash arm which is over capacity. In the PM network peak hour, all arms operate within capacity. A summary of the operation of the junction is shown in **Tables 8 and 9**. The ARCADY outputs for this junction are shown in **Appendix 2**.

Table 8 - **Existing Operation of Junction 5 In The AM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	31.34	34.76	0.902
Lakeside Parkway	5.13	18.89	0.272
Queensway	15.65	20.68	0.757

Brigg Road	7.82	23.54	0.332

Table 9 - **Existing Operation of Junction 5 In The PM Peak**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	20.14	31.52	0.639
Lakeside Parkway	11.81	25.90	0.456
Queensway	17.66	23.08	0.765
Brigg Road	14.69	22.69	0.647

Existing Trip Generation 2026

3.13 The proposed completion date of the development when all units will be fully occupied is currently estimated to be 2026. Therefore, it is necessary to assess the existing trip generation on the network under existing conditions for the future year 2026.

3.14 A growth factor depending on the year of survey was applied to each junctions' survey data to bring traffic levels in line with predicted traffic flows in 2026 which was again calculated from a mean NRTF factor with a TEMPRO factor adjustment for the Scunthorpe area. **Appendix 3** provides a summary of the turning count movements for Junctions 1, 2 3, 4 and 5 in the AM and PM peak periods in 2026 together with a summary of the growth factors used for each junction.

Operation of Junction 1 in 2026: A18 Doncaster Road/M181/A1077 Phoenix Way roundabout

3.15 For the future year, under current conditions, Junction 1 would operate within its operational limits in the AM network peak hour. In the PM network peak hour, all arms would operate within their operational limits apart from Phoenix Way which would be over-capacity. **Table 10** provides a summary of the operation of the junction in the AM network peak period and **Table11** summarises the operation of the network PM peak. The ARCADY outputs for this junction are shown in **Appendix 4**.

Table 10 – Operation of Junction 1 In The AM Peak - 2026

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC
Doncaster Road (East)	15.88	25.75	0.617
M181	25.94	33.05	0.785
Doncaster Road (West)	14.31	16.65	0.859
Phoenix Way	8.59	15.54	0.553

Table 11 - **Operation of Junction 1 In The PM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC
Doncaster Road (East)	21.77	25.06	0.869
M181	16.24	29.85	0.544
Doncaster Road (West)	8.23	22.34	0.368
Phoenix Way	19.44	21.45	0.906

Operation of Junction 2 in 2026: A18 Doncaster Road/Scotter Road/A18 Kingsway roundabout

3.16 Junction 2, under current conditions for a future year of 2026, would operate within its operational limits in the AM peak hours on the Doncaster Road (East) arm and Kingsway arm. The other three arms would operate significantly over capacity. In the PM network peak hour all arms would operate within their operational limits apart from Scotter Road (North), which would be significantly over capacity with significant queuing and delay. **Table 12** provides a summary of the operation of the junction in

the AM network peak period and **Table 13** summarises the operation of the network PM peak. The ARCADY outputs for this junction are shown in **Appendix 4**.

Table 12 - **Operation of Junction 2 In The AM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	6.45	18.47	0.349
Kingsway	10.80	21.72	0.497
Scotter Road (South)	21.51	20.38	1.055
Doncaster Road (West)	21.62	18.67	1.158
Scotter Road (North)	11.62	4.09	2.838

Table 13 - **Operation of Junction 2 In The PM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	12.38	17.04	0.726
Kingsway	13.32	17.42	0.765
Scotter Road (South)	7.94	18.08	0.439
Doncaster Road (West)	22.43	27.25	0.823
Scotter Road (North)	12.47	4.53	2.754

Operation of Junction 3 in 2026*:* A18 Queensway/A18 Kingsway/Ashby Road roundabout

3.17 In the AM network peak hour, the A18 Queensway arm and the Ashby Road (South) arm would operate at over capacity in 2026, whilst in the PM peak, Ashby Road (North) would operate over capacity. **Tables 14 and 15**. The PICADY outputs for this junction are shown in **Appendix 4.**

Table 14 - **Operation of Junction 3 In The AM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	26.21	28.36	0.924
Ashby Road (South)	16.42	14.28	1.149
A18 Kingsway	9.64	15.94	0.605
Ashby Road (North)	16.76	25.66	0.653

Table 15 - **Operation of Junction 3 In The PM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	14.23	23.36	0.609
Ashby Road (South)	13.26	21.07	0.629
A18 Kingsway	11.90	21.07	0.565
Ashby Road (North)	26.19	24.90	1.052

Operation of Junction 4 in 2026: Ashby High Street/The Link/Burringham Road/Ashby Road signalised crossroads junction

3.18 The LINSIG results show that the junction does not suffer from any adverse delays or queuing vehicles under current conditions for a future year of 2026. The results

indicate that it would operate satisfactorily during both the morning and evening peak periods. The full details of the capacity analysis for this junction can be found in **Appendix 4**. The LINSIG outputs for the AM (0800-0900) and PM (1700-1800) network peak periods is summarised in **Table 16**.

Table 16 – Existing Operation of Junction 4 in The AM Peak and PM peak - 2026

	Arm A		Arm B		Arm C		Arm D	
Period	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**
AM	**31.9**	**4.5**	**25**	**1.1**	**49.6**	**7.6**	**48.2**	**5.9**
PM	**59.1**	**8.4**	**27.7**	**2.0**	**53.2**	**6.2**	**59.1**	**10**

Operation of Junction 5 in 2026: A18 Mortal Ash/Lakeside Parkway/Queensway/Brigg Road roundabout junction

3.19 Junction 5, under current conditions for a future year of 2026, would operate within its operational limits in the AM peak hours on the Lakeside Parkway arm and Brigg Road arm. The Mortal Ash and Queensway arms would operate significantly over capacity. In the PM network peak hour all arms would operate within their operational limits apart from Queensway, which would be significantly over capacity with significant queuing and delay. **Table 17** provides a summary of the operation of the junction in the AM network peak period and **Table 18** summarises the operation of the network PM peak. The ARCADY outputs for this junction are shown in **Appendix 4**.

Table 17 - **Operation of Junction 5 In The AM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	37.63	34.29	1.097
Lakeside Parkway	6.16	17.18	0.359
Queensway	18.79	19.61	0.958
Brigg Road	9.39	21.78	0.431

Table 18 - **Existing Operation of Junction 5 In The PM Peak - 2026**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	24.18	30.30	0.798
Lakeside Parkway	14.18	23.43	0.605
Queensway	21.20	21.80	0.973
Brigg Road	17.64	20.03	0.881

Public Transport Availability

3.20 There are existing bus stops are located on Timberland, immediately north of the proposed site which serves bus service 22. The service runs every 20 minutes in the morning peak hour and then every 30 minutes throughout the day, providing a shuttle service between Morrisons supermarket and Scunthorpe town centre. **Table 19** below provides a summary of the timetable.

Table 19 – Summary of Bus Services

Service Number	Route	Frequency
22	Scunthorpe – Timberlands	Every 20 minutes in the AM and then every 30 minutes thereafter (Monday – Friday)

3.21 Whilst **Table 19** demonstrates that there is currently an adequate level of service of running near the site, it is recognised that public transport accessibility to/from the site would need to be improved as part of the development proposals. As detailed later in Section 4 this will include additional bus services for service 22 to enable a bus frequency of every 10-15 minutes. This will require approximately 4-5 additional buses per hour which will not only make the service more attractive to encourage

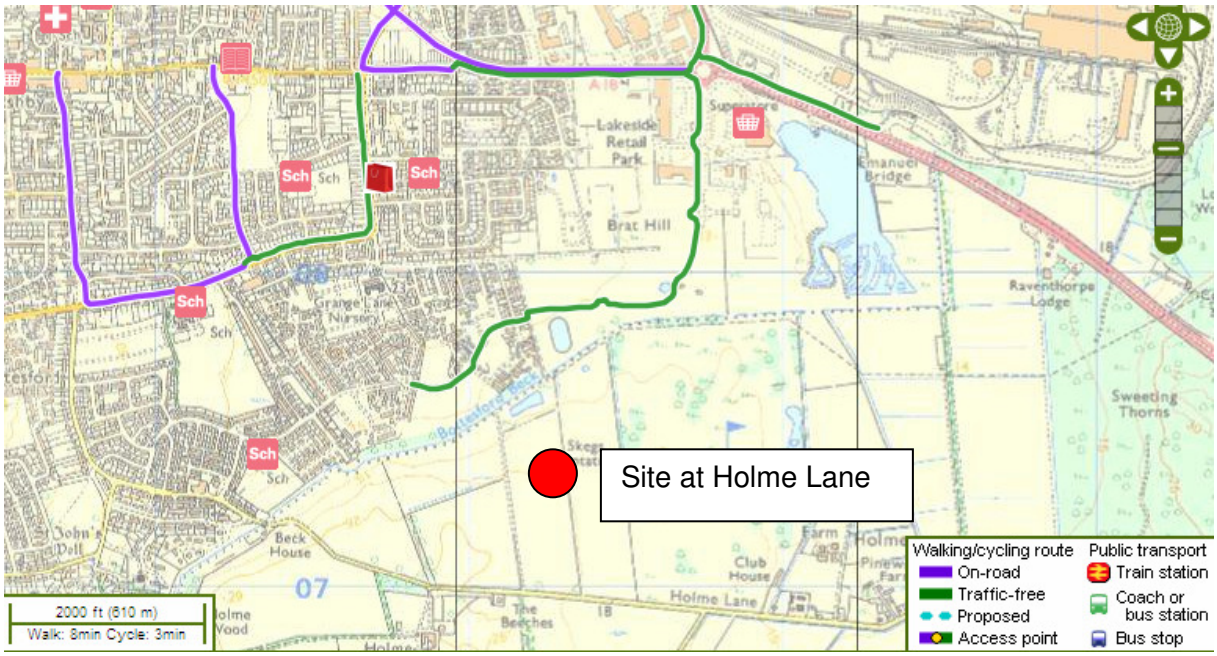
existing car drivers to catch the bus but it will also increase capacity to accommodate the users generated by the proposed development.

3.22 The closest railway link is Scunthorpe Rail Station which is located approximately 5km north of the proposed site. The station offers a basic hourly service eastwards to Grimsby and Cleethorpes and two per hour westbound to Doncaster and Sheffield. One is a limited stop TPE service that continues to Manester Piccadilly and Manchester Airport, one is the local service operated by Northern Rail and Manchester Airport and the other is the local service operated by Northern Rail that calls at all intermediate stations en-route.

Pedestrian and Cycle Facilities

3.23 The residential areas immediately to the north of the site all have footways on both sides of the carriageway and are well lit.

3.24 The area to the north of the site benefits from excellent cycle links and the site is located within close proximity to Scunthorpe's local cycle networks. Designated cycle paths are located adjacent to the northern edge of the site on Timberland. The cycle lanes are a combination of 'on-road' and 'traffic free' paths and are shown on the following excerpt from the Sustrans website.



3.25 Walking and cycling routes throughout Scunthorpe are to benefit from funding from the Connect2 project. This is part of the UK wide Sustrans project to create enhanced/new walking and cycling routes. North Lincolnshire Council have secured funding to develop o/off road pedestrian and cycle facilities in Scunthorpe. The total estimated cost for the scheme is approximately £3.3 million. This will link in with existing facilities to provide safe and direct routes into Scunthorpe from the area to the north of the proposed site.

Barriers to Walking and Cycling

3.26 There are a number of potential barriers to walking and cycling from the proposed site and these are:

- No pedestrian/cycleway crossing the bridge on Holme Lane on roads to the south of Bottesford Beck.
- There is a lack of formal pedestrian and cycle crossings in the vicinity of the site along Timberland e.g. pedestrian islands, signal controlled crossings
- There is a lack of formal pedestrian and cycle crossings in the vicinity of the site along Wisteria Way also.
- Poor signage for cycle routes/facilities.

3.27 Notwithstanding the above, the proposed site is located in an area with a wide variety of services/facilities within walking and cycling distance. The accessibility of the proposed site can be demonstrated in its compliance with the Institute of Highways and Transportation (IHT) “Guidelines for Providing for Journeys on Foot” (2000) in relation to acceptable walking distances to services/facilities.

3.28 The IHT guidelines suggest the following acceptable walking distances (for pedestrians without mobility impairment) which are shown in **Table 20.**

Table 20 – Suggested acceptable walking distances (from IHT guidelines)

Suggested acceptable walking distance			
	Town Centres	**Commuting/School**	**Elsewhere**
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Preferred maximum	800m	2000m	1200m

3.29 The following **Table 21** provides examples of the proposed facilities/services within walking distance of the site and the time it takes to walk to them. The time it takes to walk to a facility or service is based on guidance contained within "Guidelines for Providing for Journeys on Foot" (2000) which states that an average walking speed is approximately 1.4m/s. Also contained in **Table 21** is the cycle times to each of the destinations, which is based on 4m/s (source: www.cycling-london.blogspot.com). An accessibility map which shows the services and facilities in **Table 21,** which are within walking and cycling distance from the proposed site is attached as **Figure 3.**

Table 21 – Accessibility to services/facilities

Desirable/Maximum Walk Distance	Location	Distance	Travel Time Walking	Travel Time Cycling
Town Centre				
200m/800m	1) Ashby High Street	Approximately 1600m	19 minutes	7 minutes
Commuting				
500m/2000m	2) Grange Lane Industrial Estate	Approximately 1500m	18 minutes	6 minutes
500m/2000m	3) Various retail/non-retail facilities on Ashby High Street	Approximately 1600m	19 minutes	7 minutes
Schools				
500m/2000m	4) Frederick Gough School	Approximately 1400m	17 minutes	6 minutes
500m/2000m	5) Holme Valley Primary School	Approximately 460m	5 minutes	2 minutes
500m/2000m	6) Bottesford Infant School	Approximately 1300m	15 minutes	5 minutes
500m/2000m	7) Oakfield Primary School	Approximately 1600m	19 minutes	7 minutes
500m/2000m	8) Rochdale Road School	Approximately 1800m	19 minutes	7 minutes
500m/2000m	9) Grange Lane School	Approximately 1300m	15 minutes	5 minutes

Elsewhere				
400m/1200m	10) Morrisons Supermarket	Approximately 970m	11 minutes	4 minutes
400m/1200m	11) Lakeside Retail Park	Approximately 600m	6 minutes	2 minutes
400m/1200m	12) Recreation Ground	Approximately 1800m	22 minutes	6 minutes
400m/1200m	13) Dental Surgery	Approximately 130m	2 minutes	1 minute
400m/1200m	14) Place of Worship	Approximately 800m	10 minutes	3 minutes
400m/1200m	15) Library	Approximately 1600m	19 minutes	7 minutes
400m/1200m	16) Place of Worship	Approximately 1400km	17 minutes	6 minutes
400m/1200m	17) Bus Stops	Approximately 600m	6 minutes	2 minutes
400m/1200m	18) Bus Stops	Approximately 600m	6 minutes	2 minutes

3.30 In relation to the IHT guidelines for walking, the site is within the recommended target accessibility ranges for the majority of services/facilities such as shopping, education, travel and employment facilities. For the majority of these services/facilities, the walk time to access these facilities is 20 minutes or under and are within the recommended maximum walking distance. For cycling all of the above facilities can be accessed in 10 minutes or under.

3.31 All the routes to each destination have footways and are well lit. There are a number of on/off road cycle routes within the locality of the site, which are utilised partly or fully when cycling to all of the above destinations.

3.32 To encourage sustainable travel to/from the site, a Travel Plan is proposed to be implemented, which would include a package of measures to be implemented before and after occupation. Before occupation, this would include Travel Plan information packs on completion of purchase for residential dwellings, which could provide information of walking and cycling routes in the area, location of public transport facilities and timetables etc. After occupation the measures could include setting up a residents Travel Plan group, cycle training, health promotion of walking and cycling, car club. Further details of what a Travel Plan for the site would contain is detailed in Section 4. It is considered that the preparation and operation of a Travel Plan for the site would be a condition of any future planning consent.

4. PROPOSED DEVELOPMENT

Development Composition

4.1 For the purpose of this Transport Strategy report the scheme is assumed to comprise 2,978 dwellings.

4.2 An illustrative master plan of the proposed development is shown in **Appendix 5**. It is assumed that the completion year for all dwellings will be 2026. **For robustness, this Transport Strategy has assumed all dwellings to be fully occupied in the opening year.**

4.3 To forecast the multi-modal trip rates that are likely to be generated by the proposed development, reference has been made to the TRICS database. Extracts of the database are attached at **Appendix 6**. The trip rates within the AM and PM network peak hours and by mode are shown in **Table 22.**

Table 22 – Proposed Multi-Modal Trip Rates

Mode	A.M. Peak Trip Rate (08.00 – 09.00)		P.M. Peak Trip Rate (17.00-18.00)	
	Arr.	Dep.	Arr.	Dep.
All vehicles	0.148	0.433	0.414	0.228
Public transport users	0.004	0.019	0.015	0.004
Cyclists	0.005	0.010	0.013	0.009
Pedestrians	0.039	0.162	0.055	0.048

4.4 From **Table 22** the proposed multi-modal trip generation from the site in the AM and PM network peak hour can be calculated is shown in **Table 23**.

Table 23 - Trip generation by mode to/from the development in the AM and PM network peak hours and the average daily trip generation for Residential – 2026

Mode	A.M. Peak Trip Rate (08.00 – 09.00)		P.M. Peak Trip Rate (17.00-18.00)	
	Arr.	Dep.	Arr.	Dep.
All vehicles	441	1289	1233	678
Public transport users	12	57	45	12
Cyclists	15	30	39	27
Pedestrians	116	482	164	143

4.5 To reduce the potential trips from the site and to accord with current Government Guidance it is proposed that a Travel Plan will be implemented on the site, with the aim of reducing vehicle dependence and encouraging sustainable modes of transport for residents of the development.

Development Traffic Distribution

4.6 Peak hour trip data for the proposed development, obtained from the TRICS database, have been distributed onto the existing highway network to identify which routes are most likely to be used and the increase in traffic flows. In relation to the peak hour traffic, travel to work information obtained from national census statistics provides existing travel patterns that can be applied to the development proposals. The data obtained from the census is available in wards. Whilst the site is in the ward of Ridge, data from the ward of Bottesford has been used as it is the nearest urban residential area to the site.

4.7 The Census travel to work directions and their proportions have been applied to the local road network, which is shown on **Figure 4** attached.

4.8 The trip generation to/from the site and distribution at each key junction is shown on aerial photographs attached at **Figure 5**. Note that at Junctions 2 and 3 the distribution of development traffic is based on the proportions of existing flows.

4.9 Following the distribution of trips to/from the proposed site, the additional traffic flows were added to the existing peak hour turning movements at each key junction. The peak hour turning movements with the additional development traffic has been used to assess the impact of the proposed development on the key junctions. The peak hour turning movements and the outputs from ARCADY and LINSIG are shown in **Appendix 7**.

Impact of Development Traffic

Impact Summary - Junction 1

4.10 It can be seen that Junction 1 would continue to operate within its operational limits in both the AM and PM network peak hours with the additional traffic from the proposed development in the opening year of 2026 (assuming the site is fully occupied). The ARCADY outputs for the AM (0800-0900) and PM (1700-1800) network peak periods are summarised in **Tables 24** and **25**, with the full output attached as **Appendix 7**.

Table 24 - Operation of Junction 1 In The AM Peak (2026+ Development)

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC
Doncaster Road (East)	16.63	25.70	0.647
M181	26.19	33.01	0.793
Doncaster Road (West)	14.31	16.47	0.869
Phoenix Way	8.59	15.39	0.558

Table 25 - Operation of Junction 1 In The PM Peak (2026 + Development)

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC
Doncaster Road (East)	21.77	24.90	0.874

M181	16.97	29.97	0.566
Doncaster Road (West)	8.23	22.08	0.373
Phoenix Way	19.44	21.24	0.915

Impact Summary - Junction 2

4.11 From the analysis of the current operation of the junction as shown in **Appendix 2** for 2010 and **Appendix 4** for future year 2026 it can be seen that Junction 2 is currently operating ***significantly over its capacity*** in the AM and PM network peak hours on one or more of its arms, ***regardless of the proposed development*****.** It can be seen from the ARCADY output attached as **Appendix 7** that the additional traffic from the proposed development further increases queuing and delay experienced at the junction.

4.12 It should be noted that the capacity equations and calculations undertaken by the software becomes unstable as the demand reaches the theoretical capacity of an arm and the software will begin to predict very long queues. These should not be taken as literal predictions of queue length but as an indication that the junction has reached its capacity. The proposed development traffic will contribute to an already congested network. Therefore, it is essential that there is a robust travel plan in place to mitigate some of this development traffic to reduce vehicle trips to the site, details of which are contained later in this section. The ARCADY outputs for the AM (0800-0900) and PM (1700-1800) network peak periods for 2026 with development traffic are summarised in **Tables 26 and 27**.

Table 26 - **Operation of Junction 2 In The AM Peak – 2026 + Development**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	6.45	18.50	0.349
Kingsway	15.15	22.02	0.688
Scotter Road (South)	21.69	18.10	1.198

Doncaster Road (West)	21.87	17.92	1.221
Scotter Road (North)	13.04	4.66	2.797

Table 27 - **Operation of Junction 2 In The PM Peak – 2026 + Development**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
Doncaster Road (East)	12.38	16.52	0.749
Kingsway	16.28	18.94	0.860
Scotter Road (South)	8.52	17.12	0.498
Doncaster Road (West)	23.16	25.71	0.901
Scotter Road (North)	16.74	3.98	4.203

Impact Summary - Junction 3

4.13 From the analysis of the existing operation of the junction in 2026 shown attached as **Appendix 4** Junction 3 would operate ***significantly over its capacity*** in the AM and PM network peak hours on one or more of its arms, ***regardless of the proposed development.*** It can be seen from the ARCADY output attached as **Appendix 7** that the additional traffic from the proposed development further increases queuing and delay experienced at the junction. The ARCADY outputs for the AM (0800-0900) and PM (1700-1800) network peak periods for 2026 with development traffic are summarised in **Tables 28 and 29**.

Table 28 - **Operation of Junction 3 In The AM Peak – 2026 + Development**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	33.18	26.90	1.234
Ashby Road (South)	23.72	13.73	1.727
A18 Kingsway	11.49	16.00	0.718
Ashby Road (North)	19.79	24.86	0.796

Table 29 - **Operation of Junction 3 In The PM Peak – 2026 + Development**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Queensway	17.89	24.61	0.727
Ashby Road (South)	17.11	20.13	0.850
A18 Kingsway	17.48	18.58	0.941
Ashby Road (North)	34.25	21.55	1.590

Impact Summary – Junction 4

3.14 The results show that the junction does not suffer from any adverse delays or queuing vehicles under current conditions for a future year of 2026 with development traffic. The results indicate that it would operate satisfactorily during both the morning and evening peak periods. The full details of the capacity analysis for this junction can be found in **Appendix 7**. The LINSIG outputs for the AM (0800-0900) and PM (1700-1800) network peak periods is summarised in **Table 30**.

Table 30 – Existing Operation of Junction 4 in The AM Peak and PM peak - 2026

	Arm A		Arm B		Arm C		Arm D	
Period	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**	**Deg Sat**	**Q**
AM	**74.2**	**15.1**	**25**	**1.1**	**50.1**	**7.7**	**74.3**	**10.7**
PM	**87.9**	**15.4**	**27.7**	**2.0**	**62.7**	**7.0**	**88.2**	**21.7**

Impact Summary – Junction 5

3.15 As with Junctions 2 and 3, from the analysis of the existing operation of the junction in 2026 shown attached as **Appendix 4** Junction 5 is shown to operate ***significantly over its capacity*** in the AM and PM network peak hours on one or more of its arms, ***regardless of the proposed development.*** It can be seen from the ARCADY output attached as **Appendix 7** that the additional traffic from the proposed development further increases queuing and delay experienced at the junction. The ARCADY outputs for the AM (0800-0900) and PM (1700-1800) network peak periods for 2026 with development traffic are summarised in **Tables 31 and 32**.

Table 31 - **Operation of Junction 5 In The AM Peak – 2026 + Development**

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	38.31	32.03	1.196
Lakeside Parkway	19.41	18.64	1.041
Queensway	21.18	16.55	1.280
Brigg Road	10.85	21.82	0.497

Table 32 - Existing Operation of Junction 5 In The PM Peak – 2026 + Development

Arm	Demand (Veh/Min)	Capacity (Veh/Min)	Demand/ Capacity (RFC)
A18 Mortal Ash	26.06	25.67	1.015
Lakeside Parkway	21.15	24.16	0.875
Queensway	27.85	20.20	1.379
Brigg Road	21.76	19.98	1.089

Impact Conclusion

4.16 The ARCADY analysis shows that Junctions 2, 3 and 5 operate significantly over capacity on one or more of their arms regardless of the development being in place. It should be borne in mind when looking at the outputs from the analysis that the traffic growth factors used (to 2026) are the only ones recognised and generally available. Currently traffic growth (due in part to the economic climate) is significantly lower than the current prediction; therefore, the factors used will have produced an overestimate of background traffic. The development traffic generation is very much a worst case scenario and in reality the phasing of development will mean that the impact will be significantly less. Junctions 1 and 4 are shown to operate within their capacity even with the development being in place.

Mitigation

4.17 Notwithstanding the comments made above, improvements are likely to be required to Junctions 2, 3 and 5 that would help to increase capacity and reduce congestion. These include;

Junction 2

- An improvement scheme which includes the replacement of the existing roundabout with a new signal controlled crossroads is already proposed. The scheme funding for this is linked to planning permission for residential development to the north of Doncaster Road. In total the funding from the development is estimated to be £1.5m. If this did not proceed then the

Holme Lane development and other developments would need to contribute to this or similar highway improvement schemes.

Junction 3

The following works are likely to be required and funded in part by the development at Holme Lane.

- Partial or full signalisation of the roundabout.
- Increase the length of the left turn/straight ahead lane on the Kingsway arm or provide an additional lane on the approach.
- Increase the left turn flare lane on the Ashby Road (South) arm.

Junction 5

The following works are likely to be required and funded in part by the development at Holme Lane.

- Partial or full signalisation of the roundabout.
- Increase the length of the right and left turn flare lanes on the Lakeside Parkway arm.
- Increase the length of the right and left turn flare lanes on the Mortal Ash arm.
- Increase the length of the right and left turn flare lanes on the Brigg Road arm.

4.18 It is considered that the development at Holme Lane would not have to fund all of the works as 3000 dwellings would only be a proportion of the dwellings planned to be built within Scunthorpe. Other developments are likely to affect some or all of these junctions and a co-ordinated approach to the developer contribution of highway improvements by the Council is recommended.

Travel Plan

4.19 The Travel Plan for the development in conjunction with off-site enhancements to the public transport provision and walking and cycling network will help to reduce the potential for vehicular trips through these junctions, thereby reducing the impact of

the development on them. Details of what the Travel Plan would contain and the off-site enhancements are set out in the following paragraphs.

4.20 Modal shift targets will be set so that the Travel Plan has a focus for what it is trying to achieve and to measure the success of the Travel Plan. The modal shift targets will be '**SMART**' (**S**pecified-**M**easurable-**A**chieveable-**R**ealistic-**T**imebound). Initial modal shift targets can be set even if the end users are not yet known, as in the case of this development. The initial modal shift targets are 'SMART' and the baseline is derived from average trip generations obtained from the TRICS database. The Travel Plan measures are designed to:

"Reduce the reliance on single occupancy car use and encourage users of the site to consider more sustainable modes of transport when traveling to and from the site."

4.21 Empirical evidence has shown that the optimum time for introducing people to alternative travel modes is when they experience a major life change event such as moving to a new location of work or residence. The success of the Travel Plan will therefore depend on establishing a Travel Plan 'culture' among users of the site the moment they occupy their new site. For the purposes of this report, an initial Action Plan that would be contained in a Travel Plan for the site is highlighted below and is broken down into five strategy sections and these are walking, cycling, public transport, car users and reducing the need to travel. Note that this list is not exhaustive at this stage.

Walking Strategy – Prior to Occupation

Type of measure
Route Maps
Improved network provision
Pedestrian crossings
Clear and coherent sign posting

Walking Strategy – Potential Measures after Occupation

Type of measure
Provision of personal alarms
Promoting walking as a healthier way to travel
Obtain discounts from local sports shoe shops

Walking BUDDY

Cycling Strategy – Prior to Occupation

Type of measure
Provision of secure cycle parking
Clear and coherent sign posting
Improved network provision to and from the site
Formal crossing points
Route maps

Cycling Strategy – Potential Measures after Occupation

Type of measure
Obtain discounts from local bike shops
Establish a BUG
Provide cycle training
Promote cycling events
Promote cycling as a healthier way to travel
Cycle BUDDY

Public Transport Strategy - Prior to Occupation

Type of measure
Information provision
Enhancements to existing services

Public Transport Strategy – Potential Measures after Occupation

Type of measure
Personalised journey planning
Discounted bus tickets

Car Users Strategy - Prior to Occupation

Type of measure
Provision of car share database
Promotion of car sharing

Reducing the Need to Travel - Prior to Occupation

Type of measure
Publicise Travel Plan when selling the residential dwellings
Travel information pack i.e. for commencement of employment or to be sent out with confirmation receipts
Travel Plan information on house builders website
Provision of broadband in every dwelling to encourage working from home

Off-Site Enhancements to Public Transport, Walking and Cycling

4.22 As the Action Plan highlights above, there will be a number of off-site improvements to encourage sustainable travel and reduce car use in the area, specifically these could include;

- Additional bus services to service 22 to enhance frequency and increase capacity. At present the frequency is every 20 minutes in the morning peak then every 30 minutes thereafter. It is proposed to increase the frequency of the service to every 10-15 minutes, with penetration though the proposed site. It is anticipated that there will be a requirement for approximately 4-5 additional buses per hour, which will be subject to a full capacity assessment of the existing service with the submission of a future planning application and through consultation with the local authority.

- Pedestrian islands along Wisteria Way in the vicinity of the site.

- Signal controlled toucan crossing on the Wisteria Way arm of the roundabout that would connect with the access road for the site to link in with the footway/cycleway network to the north of the site carriageway and provide safe and direct movement to/from Morrisons etc to the north.

- Improved signage for cyclists to include directional signs and map of area detailing key services/facilities in the area.

- Physical improvements to Junctions 3 and 5 which could include increasing right/left turn flare lanes and/or signalisation of the roundabouts.

Improvements to Holme Lane

4.23 There are highway constraints in terms of width, layout, alignment and gradient of Holme Lane and a bridge over the Bottelsford Beck. This is in relation to its ability to accommodate development traffic, both vehicular and non-vehicular, in terms of traffic capacity and road safety. To overcome these barriers, as part of the development, Holme Lane will be widened or replaced by a new road serving the development and also a new wider road bridge constructed across the Beck.

Vehicular Access

4.24 The proposed improvements to Holme Lane and the road bridge would provide a road of an acceptable standard and as such could be used by the development. Another access point for the development would be achieved by the construction of a road link over Bottelsford Beck in the north east corner of the site connecting to one of the existing roundabouts on Wisteria Way. This route was considered previously as part of a more strategic route which was promoted by the Council to connect with the M180.

Summary

4.25 It is anticipated that with a robust and comprehensive Travel Plan for the site, including off-site improvements to off-site junctions, the walking and cycling network and through improvements to the existing bus services, the overall impact of the development would be minimised. The of-site improvements will not only benefit the users of the proposed site and ensure accessibility but it will also improve accessibility for those that work, live etc. surrounding the site through such measures as additional bus services in the area, thereby reducing car use in a wider context than just the development generated car use. Such an approach would help to ensure that the 'net' impact of the development proposals upon the existing network would be minimised.

5. SUMMARY AND CONCLUSION

Summary

5.1 This Transport Strategy has been prepared to assess the development proposal on land located at Holme Lane, Scunthorpe for up to 3,000 dwellings for inclusion within the North Lincolnshire Core Strategy.

5.2 The key issues are:

- The overall site area comprises land with a combined total of just under 140 hectares and is located in south east Scunthorpe, in the ward of Ridge. The proposed development area within the site extends to approximately 74.44 hectares. The site area comprises a number of fields and the substantial properties of Holme Hall and Holme Farm. Other residential properties immediately adjacent to the site are Beck House near to the bridge over Bottesford Beck and The Beeches which is to the east of Holme Hall.

- The site is bisected by Holme Lane, which runs west to east. This is the only adopted highway within the site and the road from which vehicular access is currently gained. To the east of the site there is a golf club, to the west the urban area of Bottesford and further open fields and to the south the M180 motorway.

- There are highway constraints in terms of width, layout, alignment and gradient of Holme Lane and a bridge over the Bottelsford Beck. This is in relation to its ability to accommodate development traffic, both vehicular and non-vehicular, in terms of traffic capacity and road safety. To overcome these barriers, as part of the development, Holme Lane will be widened or replaced by a new road serving the development and also a new wider road bridge constructed across the Beck.

- The proposed improvements to Holme Lane and the road bridge would provide a road of an acceptable standard and as such could be used by the development. Another access point for the development would be achieved by the construction of a road link over Bottelsford Beck in the north east corner of the site connecting to one of the existing roundabouts on Wisteria Way.

- The site is well served by the adjacent roads and footpaths and is located in an area with a wide variety of services/facilities within walking and cycling distance.

- In relation to the IHT guidelines for walking, the site is within the recommended target accessibility ranges for the majority of services/facilities

such as shopping, education, travel and employment facilities, which surround the site. For the majority of these services/facilities, the walk time to access them is 20 minutes or under and are within the recommended maximum walking distance. For cycling all of the above facilities can be accessed in 10 minutes or under.

- To facilitate pedestrian and cycle movement to these services/facilities, improvements to the network are proposed to ensure more attractive and safer routes for pedestrians and cyclists. These improvements include pedestrian islands along Wisteria Way in the vicinity of the site, Signal controlled toucan crossing on the Wisteria Way arm of the roundabout that would connect with the access road for the site to link in with the footway/cycleway network to the north of the site carriageway providing safe and direct movement to/from Morrisons etc to the north and improved signage for cyclists to include directional signs and map of area detailing key services/facilities in the area.

- it is recommended that bus service frequency is improved to the site through the procurement of approximately 4-5 additional buses per hour. This would significantly improve accessibility in the area.

- The sustainable transport proposals as part of the development will not only ensure accessibility to the site for those accessing it but it will also improve accessibility for the wider community e.g. additional bus services, which in turn should help to reduce congestion in the area.

- For robustness the assessment of the proposed traffic generation has been calculated as a worst case scenario and it is considered to be less in reality. Junctions 2, 3 and 5 all operate would operate, in a future year of 2026 (when it is anticipated that all development will be occupied), significantly over capacity on one or more of their arms regardless of the proposed development. Physical improvements could be made to junctions that would help to increase capacity and reduce congestion and could include increasing the length of the right and left turn flare lanes on arms at each junction and/or partial or full signalisation of each junction.

- A Travel Plan will be prepared for the site to reduce vehicle dependence and encourage sustainable modes of transport for occupants of the development. This would include targets for modal shift and an Action Plan containing a range of measures, including the off-site improvements to achieve the targets set.

Conclusion

5.3 It is concluded that the proposed development is in a location that whilst benefiting from good walking and cycling links access, will need to be improved in terms of facilitating bus use and making trips by walking and cycling more attractive and safer.

5.4 The outcome of the traffic analysis suggests that the road network appears to cope with the proposed increase in traffic from the development, apart from Junctions 2, 3 and 5. However, these junctions are currently significantly over capacity regardless of the development being in place. Notwithstanding this, to help mitigate the impacts of the development on these junctions a robust Travel Plan and off-site enhancements will be developed as part of the development proposals so that the impact is minimised.