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LINCS GATEWAY, SPALDING

TRANSPORT ASSESSMENT

Ashley King Developments Limited

17/12/2013

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Executive Summary

This Transport Assessment (TA) has been produced by WSP for and on behalf of Ashley King Developments. It has been prepared to support a planning submission for proposals for development on land at Barrier Bank in Spalding, Lincolnshire. This TA has been prepared in accordance with best practice, current guidance and has also been comprehensively scoped with Lincolnshire County Council (LCC) Highways.

The assessment has considered the transport impacts of:

> **'A sustainable urban extension comprising a business park (Class B1(a), B1(b), B1(c), B2 and/or B8 use(s)), hotel (Class C1 use), public house / restaurant (Class A3 and A4 use), conference and function centre (Class D1 and D2 use), petrol filling station (sui generis use), kiosk(s) (Class A1, A3 and/or A5 use(s)) (refer to schedule of proposed uses by land parcel and land parcel plan Appendix D & E), together with associated landscaping, access, highways (including footpaths and cycleways), parking, drainage (including foul and surface water pumping stations), utilities and service (including electricity substations) infrastructure works (no matters reserved for Parcels B2, B3a, B4 and C0; no matters reserved except for landscape for Parcels A1, A2 and B1; all matters reserved except for (point of) access for Parcel A3 and B5; all matters reserved for Parcels B3b and C1).'**

The B1173 routes directly through the Site, dividing it into two separate land parcels: one which lies south of B1173 Cowbit Road and covers an area of about 4.1ha and another which lies to the north of B1173 and covers an area of about 18.6ha.

The assessment has considered the land parcels that are being applied for without any matters reserved and has demonstrated, through the use of Swept Path software, that access and car park arrangements are suitable and in accordance with the appropriate design standards. In addition all car and cycle parking has been shown to accord with local parking standards.

The existing site accesses from Barrier Bank and from the B1173 are retained and re-used and an additional new access is to be provided off B1173 Cowbit Road. The Site will therefore have three vehicular accesses, all in the form of major/minor priority junctions.

The two accesses off the B1173 Cowbit Road: an existing priority junction accommodating all movements for Site A and a new entry only junction for Site B to the south, about 60m to the east of the access to Site A. This arrangement would result in a right-left staggered priority junction. A ghost island and right turn lanes will be provided at the stagger to enable development traffic to access the site without blocking straight ahead movements. This leaves a distance of about 140m between the site access and the A16/B1173 Roundabout located to the east of the site.

As the Site A proposals are expected to generate more HGV traffic, the right turn lane into this site is longer at 53 metres which can therefore accommodate 3 HGVs as they wait to enter the site, without blocking other traffic. The smaller site is expected to generate more car traffic due to its petrol filling station and therefore a right turn lane of 30m which can accommodate up to 5 passenger car units (PCUs).

For Site B, an additional exiting access allowing all movements will be retained off Barrier Bank, in the form of a priority T junction.

In addition to the design support and assessment of the detailed elements of the scheme which includes access to some land parcels, this TA has considered the forecast impacts of the proposals

on the wider transport networks. Through this assessment, it has clearly been demonstrated that the impacts are non-material and would be barely perceptible on the wider networks.

Although impacts are forecast to be minimal, the scheme does propose to deliver improvements to the pedestrian and cyclist networks, provide a commitment to design for buses in subsequent Reserve Matters Applications and provide the framework for occupier Travel Plans to be developed.

This report therefore concludes that given the lack of transport impacts associated with the proposals, and set against the associated benefit that the proposals will bring to the area, it is considered that in transport terms there is no reason for the proposals to be deemed unacceptable and they should therefore be supported.

1 Introduction

1.1 Appointment & Background to Report

1.1.1 This Transport Assessment (TA) has been produced by WSP for and on behalf of Ashley King Developments. It has been prepared to support a planning submission for proposals for development on land at Barrier Bank in Spalding, Lincolnshire. WSP's Development business has the largest dedicated team of engineers and transport planners specialising in development planning, infrastructure and transportation. We cover, in depth, all aspects of transportation, flood risk, drainage and infrastructure within the development cycle, from due diligence and land assembly through the planning approval process to delivery and adoption.

1.1.2 The location of the site is shown on Figure 1.1. The site lies about 2km south of Spalding Town Centre and is bound by the A16 and A1175 to the south, Barrier Bank to the west, residential developments to the northwest and agricultural land to the north.

1.1.3 The B1173 routes directly through the site, dividing it into two separate land parcels: one which lies to the north of B1173 and covers an area of about 18.6ha and one which lies south of B1173 Cowbit Road and covers an area of about 4.1ha.

1.1.4 From this point forward in this TA document, the whole site is referred to as the Site and the separate land parcels to the north and south of B1173 are referred to as Site A and Site B respectively.

1.1.5 This TA supports a single application for outline planning permission. However, different matters will be reserved for different parts of the application site, to be represented as separate development parcels within the overall application site area. For some areas, no matters will be reserved, whilst for others, all matters will be reserved, other than the (point of) access. This will be detailed in Section 7.

1.1.6 The Site is currently used for agriculture and has two access points, one off B1173 Cowbit Road for Site A and the other off Barrier Bank for Site B.

1.1.7 The proposed development comprises the following land uses. Section 7 sets out the development proposals in more detail including which elements are proposed in detail and which elements are applied for with all matters reserved.

Site A:

- Office Units
- Light Industrial/ Storage Units
- Industrial/ Storage Units

Site B:

- Hotel
- Pub/Restaurant
- Commercial Units
- Conference/ Function Centre
- Petrol Filling Station
- Café / restaurant / minor retail Units

1.1.8 The proposed development would have three access points: two off B1173 Cowbit Road into Site A and Site B and one off Barrier Bank into Site B and these will be shown in detail and are applied for. The detailed elements of the application will also have all access routes detailed accordingly with only the points of access detailed for the parcels for which all matters remain reserved at this stage.

1.1.9 Access to the site is discussed further in Section 7.

1.2 Report Purpose

1.2.1 A TA is required for this scale of development in accordance with Department for Transport's (DfT) Guidance on Transport Assessments (March 2007). The broad scope of this transport assessment has been discussed with Lincolnshire County Council (LCC), the local highway authority, in advance of the planning application submission, and their advice and comments have been considered in its preparation. Scoping discussions and correspondence with LCC are documented in Appendix A of this report.

1.2.2 This TA assesses the transport impacts associated with the development, and sets out, where required, the appropriate mitigation to address the impacts. The TA should be read in conjunction with the planning application drawings prepared by JB Planning and all other supporting information.

1.3 Transport Assessment Scope and Structure

1.3.1 The TA provides detail on all transport elements of the scheme and considers the impact that any development will have on the wider network and environs. It is structured as follows:

- **Section 2** shows how the proposals accord with national and local policy with emphasis on the sustainability credentials of the development;
- **Section 3** sets out the Baseline Conditions: existing land uses, and travel patterns;
- **Section 4** sets out the Baseline Conditions in regard to the walk and cycle networks;
- **Section 5** considers the Baseline Conditions with regard to public transport networks;
- **Section 6** details the Baseline Conditions relating to the local road network;
- **Section 7** describes what is proposed as part of the development and how the proposals demonstrate sustainable linkages and principles of movement for all modes. Access and servicing proposals are also set out in this section of the TA;
- **Section 8** sets out the Development Trip Modelling Methodology and demand forecasts
- **Section 9** sets out how forecast trips have been distributed and assigned to the transport networks prior to the impact being assessed;
- **Section 10** considers impacts on the highway network;
- **Section 11** examines potential impacts on other transport networks;
- **Section 12** outlines the arrangements for Travel Planning

- **Section 13** is the Summary and Conclusions.

2 Planning Policy Context

2.1 Introduction

2.1.1 National and local planning and transport policies have been considered within this Transport Assessment. As part of the policy review process, the following documents have been reviewed in order to identify policies which have significance in the context of the development proposals:

National Policies & Guidance

- National Planning Policy Framework (2012)

Local Policies

- Emerging South East Lincolnshire Local Plan (2013)
- Third Lincolnshire Local Transport Plan (2011/12-2012/13)
- South Holland Local Plan 2006

2.2 National Policies & Guidance

National Planning Policy Framework

2.2.1 The National Planning Policy Framework (NPPF) was published in March 2012 and provides the Government's national planning policies for England. At the heart of the NPPF is a presumption in favour of sustainable development.

2.2.2 At Paragraph 29, the NPPF advises that transport policies have an important role to play in facilitating sustainable development and that the transport system needs to be balanced in favour of sustainable modes, such as walking, cycling and public transport. However, it is also recognised that opportunities to maximise sustainable transport solutions will vary from urban to rural areas.

2.2.3 At Paragraph 32, the NPPF states that decisions on developments that generate significant amounts of movement should take account of whether:

- The opportunities for sustainable transport have been taken up to reduce the need for major transport infrastructure, depending on the nature and location of the site;
- There is safe and suitable access to the site for all people; and
- Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

2.2.4 At Paragraph 35, the NPPF notes that developments should be located and designed where practical to, amongst others:

- Give priority to pedestrian and cycle movements, and have access to high quality public transport initiatives;
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians; and

- Incorporate facilities for charging plug-in and other ultra-low emission vehicles.

2.3 Local Policies & Guidance

Emerging South East Lincolnshire Local Plan (2013)

2.3.1 Once adopted, the South East Lincolnshire Local Plan will set out planning policies up to 2031. It is being jointly produced by South Holland District Council and Boston Borough Council and will eventually replace the existing South Holland Local Plan 2006.

2.3.2 The Councils carried out a Preferred Options stage consultation on a Core Strategy DPD in May 2013, but are now considering expanding this DPD to include site allocations. A decision will be made on this early in 2014, and if allocations are to be included, the Local Plan is unlikely to be adopted until late 2015 at the earliest. As the policies of the consultation draft Core Strategy DPD are at an early stage, they cannot be given much weight in decision making at this stage.

Third Lincolnshire Local Transport Plan (2011/12-2012/13)

2.3.3 The 4th Lincolnshire Local Transport Plan was published in April 2013 and sets out the transport strategy for the county for the next 10 years. It is supported by a range of other policies and strategies covering specific transport related issues or areas. The Lincolnshire LTP4 sets out the following aims and objectives:

- to assist the sustainable economic growth of Lincolnshire, and the wider region, through improvements to the transport network
- to improve access to employment and key services by widening travel choices, especially for those without access to a car
- to make travel for all modes safer and, in particular, reduce the number and severity of road casualties
- to maintain the transport system to standards which allow safe and efficient movement of people and goods
- to protect and enhance the built and natural environment of the county by reducing the adverse impacts of traffic, including HGVs
- to improve the quality of public spaces for residents, workers and visitors by creating a safe, attractive and accessible environment
- to improve the quality of life and health of residents and visitors by encouraging active travel and tackling air quality and noise problems
- to minimise carbon emissions from transport across the county

South Holland Local Plan (2006)

2.3.4 The saved policies of the South Holland Local Plan 2006 constitute the development plan for the area, and will do until they are replaced by the emerging South East Lincolnshire Local Plan. The main objective of the plan is to provide a balanced strategy which encourages the growth of the local economy and allows the development of more housing.

2.3.5 The South Holland Local Plan 2006 is closely aligned with the Local Transport Plan and wider Government policies, promoting the use of sustainable modes of transport while facilitating the sustainable economic growth of the local area.

2.3.6 Policy TC2 promotes the use of cycling and looks to encourage suitable provision for cyclists when considering development proposals, including links to the existing or proposed cycleway network

2.3.7 Policy TC4 refers to the development of roadside services and states that facilities will only be permitted where all of the following criteria are met:

- There is a demonstrable need for such new facilities;
- The development will not be detrimental to the visual amenity or nature conservation interest of the location, create traffic problems, or adversely affect the amenity of neighbours or the character of the existing environment.
- The proposal will incorporate a high standard of landscaping
- Signage, including the level and appearance of illumination, will not be in discord with the surrounding area.
- Appropriate safe access is designed in accordance with the requirements set out by the highway authority.

2.3.8 South Holland's maximum parking standards are set out in Table 2.1 for the proposed development land uses.

Table 2.1 South Holland's Maximum Car Parking Standards

TYPE OF DEVELOPMENT	MAXIMUM Car Parking Standards	Minimum Cycle Parking Standards
Retail		
Non-Food Retail	1 space per 20 m^2 gfa (including any external display area)	1 stand per 500 m2 gfa
Employment		
Offices	1 space per 30 m^2 gfa	1 stand per 200 m2 gfa
General Industry	1 space per 65 m^2 gfa	1 stand per 200 m2 gfa
Warehousing	1 space per 150 m^2 gfa	1 stand per 1000 m2 gfa
Other Development Sites		
Cinema/ Theatres/ Conference Facilities/ Bingo Halls/ Other Places of Assembly with Fixed Seating	1 space per 5 seats	1 stand per 20 seats
Restaurants/ Cafes/ Public Houses/ Licensed Clubs	1 space per 3 m^2 public drinking area + 1 space per 5 m^2 public dining area	No Standard Provided
Hotels	1 space per bedroom	

3 Baseline Conditions: Land Use & Travel Patterns

3.1 Site Location

3.1.1 The proposed development site is located at the southern edge of Spalding, about 2km from the town centre. Spalding is located in the County of Lincolnshire and lies about 60km south of Lincoln and 30km north of Peterborough. It is situated within the administrative boundary of South Holland District Council, which is the local planning authority for the site. Lincolnshire County Council is the highway authority for local transport within Spalding.

3.1.2 The site covers a total area of approximately 22.7ha and is bound by the A16 and A1175 to the south, Barrier Bank to the west, residential developments to the northwest and agricultural land to the north.

3.1.3 The B1173 routes directly through the Site, dividing it into two blocks of land: Site B which lies south of B1173 Cowbit Road and covers an area of about 4.1ha and Site A which lies to the north and covers an area of about 18.6ha. The Sites was dissected as a result of the A1073 Spalding to Eye Improvement Scheme which is explained in greater detail below.

A1073 Spalding to Eye Improvement Scheme

3.1.4 The A1073 was an important strategic link between Lincolnshire and Eastern England for the distribution of both agricultural and food processing freight and as a local commuter route. The A1073 road was relatively narrow, had an accident rate well in excess of the national average and was expensive to maintain given its use by HGV's. The significant volumes of traffic on the route also had a severe environmental impact on the communities it passed through, such as Cowbit and Peak Hill in Lincolnshire and Eye Green in Peterborough.

3.1.5 Consequently, the A1073 Spalding to Eye improvement scheme was developed to replace the existing route and was jointly developed by LCC and Peterborough City Council (PCC). The new road, now classified as the A16, was designed to full highway design standards to provide a safer and more reliable journey. The existing A16 between Spalding and Stamford became the A1175.

3.1.6 The route for the scheme was chosen after extensive public consultation and exhibitions. Planning permission was granted by Lincolnshire County Council in September 2003 and Peterborough City Council in March 2004. Compulsory Purchase and Side Road Orders were published in March 2004, with the resultant Public Inquiry being held in November 2004. The Orders were confirmed in October 2006.

3.1.7 WSP have been made aware from LCC Highways that the new A16/ A1175 and B1173 Roundabout that bounds the site to the south east was previously granted planning consent for an additional fifth arm to access Site A. This arm of the roundabout has never been constructed.

3.2 Existing Land Uses

3.2.1 The majority of the larger site referred to as Site A is occupied by agricultural land which is currently used to grow turnips. Stockpiles of produce, sheeted with plastic, are present at the west of this site.

3.2.2 No buildings are currently present on Site A. Two large earth bunds up to 5m high are present.

3.2.3 Historical maps indicate that the Site was previously occupied by agricultural land divided into fields by hedgerows. A series of small buildings, assumed to be a small farm were present by 1887. By 1958, the A1073 had been constructed on Barrier Bank on the north-western site boundary. By 1971, the smaller buildings, which were located at the west of the Site, had been replaced by four larger buildings, two of which were labelled as stores. Information obtained from the Environmental Protection and Building Control Officers indicated that these buildings were burned down in 2006 and the debris was cleared shortly after.

3.2.4 Site B comprises disused land and no buildings are currently present on site. Its western boundary is formed by the Barrier Bank embankment which is some 6m higher than the rest of the site. The land slopes steeply to the east away from Barrier Bank. Most recently, the site was used as a compound for the construction of the new road.

3.2.5 The majority of Site B is overgrown. Fly tipped materials including domestic waste, metal, tyres and building rubble are present. To its south east, a small area of managed land is present. This land is under control of the highway authority, is flat and has been cleared of vegetation, gravel has been laid and two small unlined ponds are present. The ponds were constructed during the Spalding to Eye Improvement Scheme to provide a habitat for Little Ringed Plover. The current value of these ponds and the habitats is considered in greater detail by the supporting Habitat reports.

3.3 Local Travel Characteristics

3.3.1 Census 2001 data which is the most recent available for journeys to work for Spalding's day time population, has been analysed to identify the likely travel to work characteristics of people working in Spalding. Data on the method of travel to work and distance travelled has been obtained for the wards that cover Spalding, namely: Spalding Castle, Spalding Wygate, Spalding Monk's House, Spalding St John's, Spalding St Mary's and Spalding St Paul's.

3.3.2 Table 3.1 below shows the method of travel to work for Spalding's day time population.

Table 3.1: Method of Travel to Work, Spalding Day Time Population – Census 2001

Usual Mode of Travel to Work	Proportion of People Who Work in Spalding
Train	0.1%
Bus	2.7%
Taxi	0.3%
Car Driver	68.2%
Car Passenger	9.3%
Motorcycle	1.2%
Bicycle	8.5%
Foot	9.4%
Other	0.3%
TOTAL	**100%**

3.3.3 The data above suggests that about 68% of Spalding existing day time population travel to work as car drivers, with a further 9% as car passengers. Walking and cycling form 9% and 8% of journeys to work, respectively and bus is the main mode for 3% of people who work in Spalding. Only 0.1% travel by train. Conditions for pedestrians, cyclists and public transport are described in detail in Sections 4 and 5.

3.3.4 Table 3.2 below shows the distance travelled to work by Spalding's day time population.

Table 3.2: Distance Travelled to Work, Spalding's Day Time Population – Census 2001

Distance Travelled to Work	Spalding	South Holland District
Less than 2km	32%	28%
2km to 5km	22%	21%
5km to 10km	12%	17%
10km to 20km	18%	20%
20km to 30km	9%	8%
30km to 40km	2%	2%
40km to 60km	2%	3%
60km and over	3%	2%
Average Distance	10.5km	10.6km

3.3.5 The table above shows that a significant proportion, 32%, of workers within the local area travel less than 2km and 22% travel between 2km and 5km. The proportions are lower, at 28% and 21%, for the district as a whole. These are journeys which could be undertaken by walking and cycling respectively. This indicates that there is the potential for staff, and to a degree customer, journeys to be made by foot and cycle if these patterns are maintained.

4 Baseline Conditions: Pedestrian & Cyclists

4.1 Pedestrians

4.1.1 Pedestrian access to the sites is available via a footpath which routes south from Fen End Lane where it is lit and well maintained. However, once within the site, the footpath is not lit and becomes less formal. However, it does provide the potential for future pedestrian accessibility between the sites and the wider Spalding area.

4.1.2 The footways along Fen End Lane also link in with Burr Lane at which point the footways extinguish. The footway recommences along the eastern edge of the B1173 and is approximately 1.2 metres in width and provides a pedestrian link to the south of Spalding Town.

4.1.3 South of Fen End Lane, there are no footways along the B1173.

4.1.4 Figure 4.1 indicates the existing walk times from the site based on pedestrian infrastructure that is in place. This assessment utilises industry recognised walking speeds of 4.8 kph.

4.2 Cyclists

4.2.1 As is consistent with the majority of Spalding and the wider South Holland area, in terms of existing cycling provision there are no accessible cycle routes located within the immediate vicinity of the sites. National Cycle Route 12 does route along Cradge Bank approximately 650 metres to the east of Site B, however, there is no existing means of access to the route until the B1173 joins London Road approximately 1.6km to the north of the sites.

4.2.2 WSP have spoken to Pedals of Spalding about cyclist facilities in the area. Pedals, who are a local cycling campaign group, have cited that since the construction of the A16 bypass, cycling from Cowbit to Spalding has become more problematic in that northbound cyclists along Barrier Bank are now required to right turn onto the A1175 and then left onto the B1173 whereas before they would have continued straight along Barrier Bank.

4.2.3 Although no explicit cycling infrastructure exists alongside the B1173, the new carriageway is wide and comfortably has space for cars to pass cyclists without significant incursion into the opposite lane.

4.2.4 Figure 4.2 illustrates existing cycle times to and from the site based on existing connections suitable for use by cyclists. This assessment utilises industry recognised cycling speeds of 12 kph.

5 Baseline Conditions: Public Transport

5.1 Bus Services

5.1.1 Currently the site is empty and devoid of any residential/employment/consumer interest and as such, at present there are no bus services routing along the B1173 and therefore no bus stops located within 400 metres of the site. However, there are a number of services currently routing to/from Spalding via B1172 Spalding Common and London Road located to the west and north of the site respectively. At the moment, the closest bus stop is located on Spalding Common near Stennett Avenue, about 1.8km west of the site and is served by Service 37 which runs between the town centres of Spalding and Peterborough. These existing services offer the potential for future diversion into the proposed development as going forward, a site with economic activity can be expected to appeal to certain bus operators to vary their routes accordingly.

5.1.2 The bus stops on Spalding Common and London Road currently provide services to Spalding town centre and the surrounding towns of Peterborough and Market Deeping. A summary of the frequent services routing along Spading Common and London Road is provided in Table 5.3. A route map of these services in relation to the site is provided in Figure 5.1.

Table 5.1: Summary of Bus Services on Spalding Common and London Road

Service (Operator)	Route	Weekday			Saturday Frequency	Sunday Frequency
		First Service	Daytime Frequency	Last Service		
37 (Stagecoach in Peterborough)	Spalding - Peterborough	07:14	Hourly	19:24	Hourly	4 Services
	Peterborough - Spalding	06:53	Hourly	19:01	Hourly	4 Services
100 (Shaws Coaches)	Spalding – Market Deeping	08:46	5 Services	17:50	3 Services	N/A
	Market Deeping - Spalding	08:17	5 Services	17:27	3 Services	N/A
IT1 (Brylaine Travel)	Spalding Town Services	08:17	Hourly	17:17	Hourly	N/A
IT2 (Brylaine Travel)	Spalding Town Service	09:37	Hourly	16:37	Hourly	N/A

Source: Traveline Website (correct as of 13/03/2013)

5.1.3 Table 5.1 shows that the bus stops on Spalding Common and London Road are well served by a number of frequent bus services. Further to those listed above there are also a number of less frequent bus services available.

5.2 Rail Services

5.2.1 Spalding Railway Station is located in the centre of the town on the Peterborough-Lincoln Line, approximately 3.5km to the north of the site. The station is managed by East Midland Trains and has a number of available facilities including sheltered cycle storage, self-service ticket machines and staffed customer service. A summary of the rail services available from the station to key destinations is provided in Table 5.2.

Table 5.2: Summary of Train Services from Spalding Railway Station

Route	Outbound		Inbound	
	Approximate Frequency	Approximate Journey Time (Minutes)	Approximate Frequency	Approximate Journey Time (Minutes)
Spalding – Lincoln	Hourly	1 hour 25 minutes	Hourly	1 hour 25 minutes
Spalding – Peterborough	Hourly	25 minutes	Hourly	25 minutes

Source: East Midland Trains Website (correct as of 13/03/2013)

5.2.2 Table 5.2 shows that Spalding Railway Station is only served by a limited number of rail services. However, it still provides an option to use public transport when accessing key surrounding destinations. Further connecting rail services are also available from Lincoln and Peterborough. Peterborough offers a connecting service to London Kings Cross every hour, with a travel time of approximately 1 hour 30 minutes from Spalding.

6 Baseline Conditions: Highway Network

6.1 Local Highway Network

6.1.1 Both Sites benefit from direct access to the local and strategic highway network. The B1173 bisects the proposed development area, with Site B located to the south and Site A to the north. The sites are also bounded by the A1175 to the south, the A16 to the south-east and Barrier Bank to the west.

6.1.2 There are two 4-arm roundabouts located within the vicinity of the sites, one of which is the Barrier Bank/A1175 roundabout located adjacent to the south-west corner of Site B and the other is the B1173/A1175/A16 roundabout located adjacent to the south-east corner of Site B. As previously set out, this roundabout has previously had planning consent for a fifth arm into Site B but this has never been constructed.

B1173

6.1.3 The B1173 is a single carriageway road which routes through Spalding and provides a link between the A151 to the north and the A16/A1175 to the south.

6.1.4 The section of the B1173 in the vicinity of the sites was recently realigned to provide a direct link to the A1175 and a newly constructed section of the A16 which opened in October 2011. In the vicinity of the sites the carriageway of the B1173 is approximately 7.3 metres in width and is subject to the national speed limit.

6.1.5 There is no existing street lighting or footways within the immediate vicinity of the site. However, a footway does route into Spalding on the eastern side of the B1173 from the junctions with Burr Lane and Fen End Lane.

6.1.6 As part of the recent B1173 realignment works a vehicular access was constructed to serve Site A to the north-east of the carriageway. The access takes the form of a priority junction, with right-turn lanes, and is suitable to accommodate HGV movements.

A16

6.1.7 The A16 is a single carriageway road which bypasses Spalding and provides the main vehicular route between Boston to the north and Peterborough to the south. The carriageway measures approximately 7.3 metres in width and is subject to the national speed limit. There is no street lighting or pedestrian footways present.

6.1.8 The A16 routes south-west along the southern boundary of Site A where it meets the B1173/A1175/A16 roundabout and heads south-east along the new section of carriageway opened in October 2011.

A1175

6.1.9 The A1175 is a single carriageway road providing a link between the B1173/A1175/A16 roundabout and the A15 at Market Deeping to the south-west of Spalding. It routes past the southern frontage of Site B.

6.1.10 In the vicinity of the site, the A1175 and has a carriageway width of approximately 7.3m, is subject to the national speed limit and with no street lighting or pedestrian footways present.

Barrier Bank

6.1.11 Barrier Bank is the remaining section of the previous B1173 carriageway alignment. For approximately 250 metres to the north of the A1175/Barrier Bank roundabout it routes along the western frontage of Site B until it meets a dead-end.

6.1.12 An existing vehicular access into Site B is located off Barrier Bank, just to the south of the dead-end. The access takes the form of a priority junction with a right-turn lane and is suitable to accommodate HGV movements.

6.2 Existing Traffic Flows

6.2.1 To determine existing traffic flows on the local highway network, the following traffic surveys have been undertaken. These were discussed and agreed with LCC Highways:

- Manual Turning Traffic Counts at:
  - A16/ B1173/A1175 Roundabout
  - A1175/ Barrier Bank Roundabout
- Automatic Traffic Counts (ATCs) at:
  - B1173 Cowbit Road
  - A16 (north of Cowbit Road)
  - A16 (south of Cowbit Road)
  - A1175

6.2.2 The above junctions were surveyed by Advanced Transport Research Ltd on Wednesday 1 May 2013, i.e. a neutral month and day. The counts were undertaken from 0700 to 1000hrs and 1600 to 1900hrs, to cover the weekday peak traffic periods. The raw traffic count data is attached at Appendix B. The ATCs were undertaken during the same week (i.e. week commencing 29 April 2013). Table 6.1 below shows the average weekday peak hour two way flows and speeds on the roads listed above.

Table 6.1: Average Weekday Peak Hour Two Way Flows (All Vehicles) and Speeds

Road	AM Peak Hour (0800 – 0900)		PM Peak Hour (1700 – 1800)	
	2-Way Flows (vehs)	Average Speed (mph)	2-Way Flows (vehs)	Average Speed (mph)
B1173 Cowbit Road	707	36.0	766	37.0
A16 (north of Cowbit Road)	1058	41.5	1018	42.9
A16 (south of Cowbit Road)	1023	46.0	1089	46.3
A1175	656	44.0	664	46.1

6.3 Existing Network Performance Summary

6.3.1 From on-site observations during peak hours and supplemented by the commissioned traffic counts it has been possible to establish the overall performance of the highway network in the vicinity of the site. Table 6.2 below shows the average queues in passenger car units recorded during the traffic surveys.

Table 6.2 Observed Queues

Location	AM Peak Hour Maximum Queue in any 15 minute (vehicles)	PM Peak Hour Maximum 15 minute Average Queue (vehicles)
A16 Roundabout		
B1173 SB approach to roundabout	2	3
A16 SB approach to roundabout	0	6
A16 NB Cowbit Road approach to roundabout	11	10
A1175 NB approach to roundabout	1	2
Barrier Bank Roundabout		
A1175 southbound approach to roundabout	0	0
Barrier Bank northbound approach to roundabout	1	1
A1175 northbound approach to roundabout	0	0
Barrier Bank southbound approach to roundabout	0	2

6.3.2 In general terms, the two study junctions operate well, with no queuing problems. As shown in Table 6.2, at the A16 Junction, A16 NB Cowbit Road has the longest recorded queue which is only 11 and 10 vehicles during the AM and PM peak hours and where it should be noted that during other 15 minute periods within the peak hour these queues are significantly less. At the Barrier Bank Junction, an average queue of only two vehicles was recorded and this was on the Barrier Bank northbound approach during the PM peak hour.

6.4 Road Accident Records

6.4.1 Personal Injury Accident records for the highway network in the vicinity of the site have been obtained from Lincolnshire County Council. The records cover the latest 5 year period from January 2008 to December 2012. The full accident records are presented at Appendix C and contain the details and locations of accidents within the requested study area. A summary of the data is presented in Table 6.3 below.

Table 6.3: Accident Data Summary – January 2008 to December 2012

Accident Severity	Number of Accidents	Percentage of Accidents
Slight	24	86%
Serious	3	11%
Fatal	1	4%
Total	28	100%

6.4.2 As shown in Table 2.5 there have been a total of 28 Personal Injury Accidents within the latest 5 year period. A majority of these accidents have been classified as slight (86%), with 3 serious accidents (11%) and 1 fatal accident (4%). The fatal accident involved 4 vehicles and occurred on the A16 1.4 kilometres from the new roundabout installation. The accident occurred when a car driver overtook a

goods vehicle and collided with another. The contributory factor to this accident was recorded as the car driver very likely to be exceeding the speed limit.

6.4.3 The recent changes in road layout and the opening of a new section of the A16 in October 2011 mean that conclusions regarding accident clusters and road safety within the vicinity of the site are difficult to establish. However, it can be seen that a majority of past accidents have been the result of driver error rather than inherent highway design problems.

6.4.4 The new road layout has been constructed in accordance with the latest highway design and safety standards. It has therefore been concluded that the highway network within the vicinity of the site is unlikely to have any major road safety issues or concerns.

7 Development & Access Proposals

7.1 Introduction

7.1.1 As previously set out in Section 1, this is a single application for outline planning permission. However, different matters will be reserved for different parts of the application site, to be represented as separate development parcels within the overall application site area. For some areas, no matters will be reserved, whilst for others, all matters will be reserved, other than the (point of) access.

7.1.2 The proposals reflect the findings and conclusions drawn in the SQW Economic Case report that has been produced to consider the economic viability of the proposals. The report concludes that there is clear evidence of demand for employment land in the town and that the development will in the first few years meet the needs of the firms already in the area and will help to meet and retain firms already in the area that otherwise might be lost.

7.1.3 In summary, the Development therefore proposes, a sustainable urban extension comprising a business park (Class B1(a), B1(b), B1(c), B2 and/or B8 use(s)), hotel (Class C1 use), public house / restaurant (Class A3 and A4 use), conference and function centre (Class D1 and D2 use), petrol filling station (sui generis use), restaurant/café/minor retail unit (Class A1, A3 and/or A5 use(s)) (refer to schedule of proposed uses by land parcel and land parcel plan Appendix D an E), together with associated landscaping, access, highways (including footpaths and cycleways), parking, drainage (including foul and surface water pumping stations), utilities and service (including electricity substations) infrastructure works (no matters reserved for Parcels B2, B3a, B4 and C0; no matters reserved except for landscape for Parcels A1, A2 and B1; all matters reserved except for (point of) access for Parcel A3 and B5; all matters reserved for Parcels B3b and C1).

7.1.4 The list below sets out the different land parcels within the application site, and the nature of the applications being made. The respective Parcels are shown in Appendix D.

North-East Part of the Site

- Parcel A1: Access Road - No matters reserved except for landscape
- Parcel A2: Industrial / Storage / Distribution Unit, Use Classes B2 and B8 with ancillary B1(a) and B1(b) - No matters reserved except for landscape
- Parcel A3: Remainder of the Business Park, Use Classes B1(a), B1(b), B1(c), B2 and/or B8- All matters reserved except for (point of) access

South-West Part of the Site

- Parcel B1: Access Road - No matters reserved except for landscape
- Parcel B2: Conference and Function Centre, Use Classes D1 and D2 - No matters reserved except for landscape
- Parcel B3a: Petrol Filling Station, Sui generis - No matters reserved except for landscape
- Parcel B3b: Restaurant/café and minor retail unit, Use Classes A1, A3 and/or A5 - All matters reserved except for (point of) access
- Parcel B4: Hotel & Public House / Restaurant, Use Classes C1, A3 and A4 - No matters reserved

- Parcel B5: Industrial / Storage / Distribution Units, Use Classes B1(a), B1(b), B1(c), B2 and/or B8 - All matters reserved except for (point of) access

Centre of Site

- Parcel C0: Public Highway - No matters reserved except for landscape
- Parcel C1: Existing Scrapes (within public highway) - All matters reserved

7.1.5 JB Planning have been responsible for developing an Illustrative Masterplan for the Site and this is also contained in Appendix D alongside the associated schedule of development. This illustrates a potential form for development for the parcels where all matters are reserved and utilises the detailed development proposals for the parcels where matters are not reserved.

7.1.6 The illustrative masterplan proposals are expanded upon below.

7.2 Parcel A1

7.2.1 The Parcel A1 proposals relate only to the access road from the existing junction onto the B1173 into the site and to provide access to Parcel A2. This carriageway provides access to the Parcel A2 surface car parking and the service yard to the rear. A priority junction suitable for use by HGVs is also designed and provided for and this will provide access to the rest of the wider development site which will come forward through Reserve Matters Applications. The access road has been designed to ensure that sufficient width would exist to allow two articulated vehicles to pass each other. As such the access road is 7.3 metres in width with 2.0 metre wide footways on either side of the carriageway. The proposals for this element are shown on Drawing GA 0709/GA/008C contained in Appendix F.

7.2.2 The existing junction is proposed to remain unchanged except that an uncontrolled pedestrian crossing will be incorporated into the western arm. This crossing will incorporate tactile paving and a central pedestrian refuge and will link with the newly provided footway along the eastern side of the B1173 that then provides access to Site B.

7.2.3 The tracking of the access road and junction is shown on Drawing 0709/ATR/007A and also contained in Appendix F.

7.3 Parcel A2

7.3.1 Parcel A2 of Site A will consist of storage and distribution land uses, with ancillary B1, primarily within a single storey building with a gross floorspace of 8,640m² B2/B8 use, and 926 m^2 B1 use. No matters are reserved for this Parcel and as such detailed planning permission is being sought for this facility. Its detailed layout is provided in Appendix G.

7.3.2 The building will be accessed via the arrangements set out for Parcel A1 and shown on Drawing GA 0709/GA/008C in Appendix F and this has been tested using swept path software with the analysis shown in Drawing 0709/ATR/007A.

7.3.3 As this land use can be considered to be a mix between general industry and warehousing, there are 93 car parking spaces proposed. This provision is compliant with South Holland's Maximum Parking Policy standards which would allow up to 147 spaces if the standard for general industry were applied at 1 space to 65 m² or 63 spaces if the standard of 1 space to 150 m² for warehousing were

applied. The car parking has been tested using swept path software and has been shown to be fully accessible for a large car.

7.3.4 In accordance with minimum cycle parking standards, 24 Sheffield stands are to be provided which provides for 48 cycle parking spaces.

7.3.5 The development proposals for Parcel A2 will require regular access by large articulated vehicles and as such four loading bays with an associated service yard have been incorporated into the design. In accordance with best practice these arrangements have been tested using swept path software where it has been demonstrated that a 16.5 metre articulated vehicle can access the service yard, turn and access the loading bays in a reverse gear and then leave safely in a forward gear.

7.3.6 The tracking of the car parking, loading bays, access road and existing junction is shown in Drawings 0709/ATR/008 and included in Appendix G.

7.4 Parcel A3

7.4.1 The rest of Site A which is referred to as Parcel A3 would, under the Illustrative Masterplan, be occupied by B1/B2/B8 uses. The Illustrative Masterplan suggests that uses may provide a total gross floor area of around 30,000 – 35,000m².

7.4.2 All matters are reserved for this land parcel except for the point of access and this is shown on Drawing GA 0709/GA/008C where it can be seen to be formed off Parcel A1.

7.4.3 All car and cycle parking will be provided in accordance with the relevant standards and will be incorporated as part of the Reserve Matters Applications that will be brought forward in due course.

7.5 Parcel B1

7.5.1 These proposals relate only to the access road from a newly formed junction onto the B1173 into Site B which is proposed to be constructed 140 metres from the newly formed roundabout junction between the B1173 and the A16.

7.5.2 The access road is proposed as one way working into the site in order to limit the number of vehicular turning movements at the junction with the B1173 and therefore maximise road safety on this stretch of road. This would need to be supported by the associated signage and carriageway markings which would be worked up at the detailed design stage. The one way working of the road means that cars cannot exit onto the B1173 and thus the width is restricted to 5 metres and the junction radii restricted to 3 and 15 metres accordingly. The highway arrangements are shown in Drawing GA 0709/GA/008C and contained in Appendix F.

7.5.3 The one way access road has been track tested using swept path software to demonstrate that the width and associated radii are suitable and these are shown in Drawing 0709/ATR/007A and also contained in Appendix F.

7.6 Parcel B2

7.6.1 Parcel B2 will be developed by Ashley King Developments Limited as a single storey conference/ function centre with a gross floor area of 990m^2. This facility will be located in the northern part of Site B and will have a capacity for up to 400 seats for visitors.

7.6.2 Access to the conference/ function centre will be from its south and its access road will form a priority T junction with the main Site B access road.

7.6.3 It is proposed to provide 82 car parking spaces in total, which is in accordance with the maximum parking standards for conference facilities as shown in Table 2.1. Within the parking provision of 82 spaces, 4 spaces will be wheelchair accessible and these are located closest to the building whilst another 3 spaces within the dedicated service yard are assigned only to staff.

7.6.4 In accordance with minimum cycle parking standards, 10 Sheffield stands are to be provided which provides for 20 cycle parking spaces.

7.6.5 As stated, a dedicated service yard is proposed to the west of the building to ensure that the servicing that is required does not affect the general parking arrangements. This servicing yard can be accessed by rigid vehicles up to 11.0 metres in length (Pantechnicon).

7.6.6 The proposed layout for the Conference/ Function Centre is contained in Appendix H whilst the track testing of the car parking and servicing arrangements is shown in Drawing 0709/ATR/005C and also contained in Appendix H.

7.7 Parcel B3a

7.7.1 Parcel B3a is proposed to be a Petrol Filling Station (PFS) where no matters are reserved other than landscape. This proposal for a retail service station will provide an essential amenity to the nearby settlement of Spalding and to motorists using the adjacent strategic routes, offering a range of fuels, including LPG, and shop products and snacks.

7.7.2 The service station will consist of a forecourt shop building of about 366 m² fronted by a refuelling forecourt for cars and vans together with a HGV refuelling facility behind. For customers using the shop facilities 15 customer parking spaces are provided in front of the shop building, 2 of which are wheelchair accessible, and an additional 4 spaces are provided for staff to one side of the building. The total parking provision of 20 spaces is commensurate with the shop size and South Holland parking standards where 1 space per 20 m² of A1 is permitted.

7.7.3 The forecourt building is a single storey structure with a curved roof line. Walls will be finished external with facing brickwork and architectural feature panels which will provide interest and identify the shop entrance. The curved roof will be formed of architectural sheeting panels and is designed to relate to, and be in harmony with, the forecourt canopy in front of the building.

7.7.4 The main forecourt area in front of the shop building will contain four pump islands offering eight refueling places. Over the pump islands is a canopy supported on columns from the islands a further 2 pumps for HGV refuelling are provided to the rear. In addition the PFS will provide LPG fuel. The PFS will also provide air and water services.

7.7.5 Refuse collection will be undertaken from the rear of the forecourt shop building and all shop deliveries will be undertaken from the western flank where a dedicated area is provided and will be marked accordingly.

7.7.6 Adequate and safe vehicle manoeuvring and circulation is achieved by careful sizing of the forecourt area and this is demonstrated through vehicle tracking included in Appendix I along with the layout proposals.

7.7.7 Access to the PFS will be from the south and from the main site access road that runs throughout Site B. To ensure dynamic capacity and efficiency a separate access and exit is provided.

7.7.8 The access and egress into and out of the PFS has been track tested using a 16.5 metre articulated vehicle which is the largest vehicle to require regular access. The tracking analysis is shown on Drawing 0709/ATR/007A contained in Appendix F.

7.8 Parcel B3b

7.8.1 Parcel B3b will provide a restaurant/café and minor retail facilities that is A1/ A3/A5 use class with a gross floor area of 180m². All matters are reserved except for the point of access which is shown in Drawing GA 0709/GA/008C included in Appendix F and can be seen to be taken from within the demise of the PFS.

7.8.2 Car parking will be in accordance with maximum standards as set out in Table 2.1. The location and provision will be worked up in greater detail at Reserve Matters Stage.

7.9 Parcel B4

7.9.1 Parcel B4 will provide a 2 storey 52 bed Premier Inn Hotel (2,736 m² GFA) and a single storey Brewers Faye Pub/ Restaurant (585 m² GFA). The joint operator will be Whitbread.

7.9.2 114 car parking spaces will be provided in accordance with maximum standards as set out in Table 2.1 which allows for 1 space per bedroom for hotel land uses and 1 space per 3 m² public drinking area and 1 space per 5 m² public dining area.

7.9.3 The hotel will have 4 wheelchair accessible parking spaces immediately adjacent to the front entrance whilst the pub restaurant will provide 3 wheelchair accessible spaces. It is proposed that 4 spaces will be designated as parking for staff only within the 114 spaces shown.

7.9.4 The pedestrian connection between the hotel and pub/ restaurant will be catered for by carriageway markings, dropped kerbs and tactile paving. It is anticipated that internal demand between the two land uses will be high and demarcation of crossing point is considered to be an important safety intervention.

7.9.5 There are to be 5 covered Sheffield cycle stands which will provide space for 10 cycles to be parked at any one time.

7.9.6 Servicing for the Pub/ Restaurant will take place from a dedicated service yard on the northern flank of the building. Access by large articulated vehicle is achievable in the location and the servicing access has been track tested by Whitbread and this assessment is included along with the proposed layout in Appendix J.

7.9.7 The servicing for the Premier Inn Hotel will be from the car parking area to the east of the hotel where linen can be trolleyed into the premises. This arrangement has again been tested by Whitbread and the swept path assessment is also included in Appendix J.

7.10 Parcel B5

7.10.1 Parcel B5 will provide Commercial Uses which will be use class B1/B2/B8. At this stage all matters are reserved except for the point of access which is shown on Drawing GA 0709/GA/008C and included in Appendix F.

7.10.2 Car and cycle parking will be in accordance with maximum standards as set out in Table 2.1. The location and provision will be worked up in greater detail at Reserve Matters Stage.

7.11 Parcel C1

7.11.1 Parcel C1 includes landscape proposals for the existing ponds. It is proposed to re-excavate the existing shallow scrapes to create two larger, deeper amenity scrapes. The new scrapes will create an important landscape feature with a strong aesthetic appearance, which have the potential to serve as both a wetland amenity feature at this prominent point on the gateway site, whilst providing opportunities to create important ecological features. All matters are reserved for this parcel at this stage.

7.11.2 The full detail of the proposals is included in Appendix K.

7.12 Vehicular Access Summary

7.12.1 In summary, the existing site accesses from the B1173 Cowbit and from Barrier Bank and are retained and re-used to access Site A and B respectively whilst an additional new access is to be provided off B1173 Cowbit Road into Site B. The combined site will therefore have three vehicular accesses, all in the form of major/minor priority junctions.

7.12.2 The two accesses off the B1173 Cowbit Road comprise: an existing priority junction accommodating all movements for Site A and a new entry only junction for Site B, about 60m to the south/ east of the Site A access. This arrangement would result in a right-left staggered priority junction. A ghost island and right turn lanes will be provided at the stagger to enable development traffic to access the site without blocking straight ahead movements. This leaves a distance of about 140m between the new site access and the A16/B1173 Roundabout located to the south east of the site. Drawing GA 0709/GA/008C shows the access arrangements off the B1173 Cowbit Road.

7.12.3 As the Site A proposals are expected to generate more HGV traffic, the right turn lane into this site is longer at 53 metres which can therefore accommodate 3 HGVs as they wait to enter the site, without blocking other traffic. Site B is expected to generate more car traffic due to its petrol filling station and therefore a right turn lane of 30m which can accommodate up to 5 pcus is proposed. It is considered that both right turn facilities are sufficient to accommodate maximum demands for the respective land uses and this will be further justified in Section 10.

7.12.4 Although previous consents have been obtained for a fifth arm to be constructed from the A16/ B1173 roundabout, this does not form part of the development access proposals due to the implications that an access in this location would have on the proposed development form and layout.

7.12.5 For Site B, an additional existing access allowing all movements will be reinstated/ provided off Barrier Bank, in the form of a priority T junction. This junction is again shown on Drawing GA 0709/GA/008C.

7.12.6 The geometric design of the new one-way working access into Site B has been based on Design Manual for Roads and Bridges (DMRB) standards whilst the existing accesses to be utilised also comply with the appropriate DMRB standards. Swept path analysis has shown that the geometry for each junction is suitable to accommodate 16.5m articulated HGV movements. Tracking results are shown on Drawing 0709/ATR/007A.

7.12.7 The access arrangements and junction designs have been discussed and agreed with LCC Highway Officers.

7.12.8 The internal link road within Site A has only been designed up to the access to Parcel A2 and as set out above in Section 7.2, has been designed to ensure that sufficient width would exist to allow two articulated vehicles to pass each other and as such the access road is 7.3 metres in width with 2.0 metre wide footways on either side of the carriageway.

7.12.9 The internal access road for Site B is again designed to be of 7.3 metres in width to allow service access by larger vehicle and appropriate radii incorporated into the respective parcel access roads. Where there is deemed to be a pedestrian demand between land parcels, 2.0 metre footways have been provided accordingly. As stated in Section 7.5, a one way working access road into the site from the B1173 is proposed. This would need to be supported by the associated signage and carriageway markings which would be worked up at the detailed design stage. The one way working of the road means that cars cannot exit onto the B1173 and thus the width is therefore restricted to 5 metres radii restricted to 3 and 15 metres accordingly. The highway arrangements are again shown in Drawing GA 0709/GA/008C.

7.13 Proposed Floorspace and Approach to Flexible Consents

7.13.1 Although the Illustrative masterplan represents the most likely form of development coming forward, as set out previously, a flexible permission is being sought which is reflected in the proposals for Site A containing between 22% and 75% B8 with the residual 78% to 25% being B1 uses.

7.13.2 Therefore, and in order to undertake development impact testing, the potential alternative development quantum scenarios are set out in Table 7.1 below. This table also includes the illustrative masterplan proposals which can be considered the most likely built out development within the range of floor areas being applied for and then two sensitivity scenarios for impact testing based on what could be built out within the parameters of any forthcoming consent.

Table 7.1: Alternative Quantum of Development Scenarios for Testing

Land Use	Area m^2		
	Illustrative Master-Plan	Sensitivity 1	Sensitivity 2
Petrol Filling Station	1,062	1,062	1,062
Restaurant/ café and retail unit	180	180	180
Pub/ Restaurant	585	585	585
Hotel	2,736	2,736	2,736
Commercial Units	3,798	3,798	3,798
Conference/Function Centre	990	990	990
Site B	*9,351*	*9,351*	*9,351*
Office – B1	21,348	31,015	10,145
Industrial/ Storage – B8	19,233	9,566	30,436
Site A	*40,581*	*40,581*	*40,581*
Site B + Site A (22.7 ha)	**49,932**	**49,932**	**49,932**

7.13.3 The illustrative masterplan scenario assumes 49% of Site A gross floor area would be for B8 and 51% would be B1. This is 21,302 m^2 gross floor area of B1 and 21,122 m^2 of B8 for which the building within parcel A2 is part.

7.13.4 For the first sensitivity scenario i.e. Sensitivity 1, it is assumed that the building in Parcel A2 which has a gross floor area of 9,566m^2 would be the only B8 use on Site A. This accounts for about 24% of the Site A gross floor area. The remaining 31,015m^2 (76% of Site A) would be occupied by B1 uses.

7.13.5 The second sensitivity scenario, Sensitivity 2, assumes 75% of the Site A gross floor area would be for B8 uses and 25% would be for B1 uses. The parcel A2 building is included in the B8 area of this scenario too.

7.13.6 Site B land use areas for all three scenarios discussed above would be similar, as shown in Table 7.1 above.

7.14 On Site Walking and Cycling Connections

7.14.1 Given the Site's location, it is expected that there would not be considerable pedestrian and cyclist movements accessing the site. Furthermore, the opportunities to provide for walking and cycling out of the site are limited by the speeds on the roads that front the site. This is a strategy that has been previously discussed with LCC Highways.

7.14.2 Nevertheless, footways will be provided within both sites and at the sites' access junctions and an uncontrolled crossing point with dropped kerbs and tactile paving will be provided at the sites' frontage on Cowbit Road to connect the two sites.

7.14.3 The footways with in Site A will be connected to the existing public footpath that runs within the site, which connects to the footway on Fen End Lane that currently terminates at the site's northern boundary. This would consequently connect the site to Spalding's established foot and cycleway network to the north of the site.

7.14.4 WSP have spoken to Pedals of Spalding about cyclist facilities in the area. Pedals, who are a local cycling campaign group, have cited that since the construction of the A16 bypass, cycling from Cowbit to Spalding has become more problematic in that northbound cyclists along Barrier Bank are now required to right turn onto the A1175 and then left onto the B1173 whereas before they would have continued straight along Barrier Bank.

7.14.5 WSP have therefore considered at a high level, the potential to incorporate a new cycle connection between Barrier Bank and the B1173 Cowbit Road. This intervention would be on highway controlled land and would require support from LCC. Subject to LCC support, the viability of this connection could be discussed post submission with LCC and with delivery being dependent upon demonstrable need, engineering viability and a necessary Road Safety Audit. If deemed to be a valuable addition to the cyclist network, possible additional funding streams would also be explored. The connection would be outside of the development redline and as part of the high network, would be subject of a S278 agreement. An indicative alignment of the connection is shown on Figure 7.1.

8 Development Trip Modelling

8.1 Introduction

8.1.1 The development's trip generation has been assessed from TRICS 2013(a) trip rates for comparable developments. Sites located in England (excluding Greater London) have been chosen. In addition, where possible, the following criteria have been taken into account when selecting sites to estimate trip rates for each land use class.

- Location. Sites are generally restricted to suburban areas, edge of town or free standing, to reflect the location of the site at the edge of Spalding;
- Site area;
- Specific land uses

8.1.2 It should be noted that the SQW report states that the proposed employment land uses will, to a large extent, already cater for firms and businesses already within the Spalding area. Therefore the travel demands relating to these uses will, to some extent, already be on the transport networks. Despite this no account has been taken of these trips and all employment trips are assumed to be new or additional for a robust assessment.

8.2 Trip Generation – All Modes

8.2.1 The person trip rates from TRICS are shown in Table 8.1 below for each land use category, and the database printouts are attached at Appendix L.

Table 8.1: TRICS 2013(a) Person Trip Rates for the Proposed Land Uses at Spalding

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (per ha)	267.742	270.968	258.065	277.419
Restaurant/café &retail (per 100m²)	10.584	10.118	10.147	10.496
Pub/ Restaurant (per 100m²)	0.000	0.000	5.991	3.905
Hotel (per 100m²)	0.399	1.044	0.751	0.397
Commercial Unit (per 100sqm)	1.974	0.342	0.254	1.670
Conference Centre (per 100m²)	0.932	0.389	2.448	0.753
Office (per 100m²)	2.132	0.303	0.207	1.789
Industrial/ Storage (per 100m²)	0.506	0.106	0.056	0.415

8.2.2 As flexible planning consent is being sought for parts of this development for land-uses on Site A between B1 (office) and B8 (industrial/storage); trip generation has been undertaken for all three scenarios previously described in Section 7 to ensure a robust forecasting assessment is undertaken. Table 8.2 shows the resulting trip generation (all modes) of the development proposals, based on the TRICS trip rates above.

Illustrative Master Plan (53% B1 and 47% B2 on Site A)

Table 8.2: Person Trips for Illustrative Masterplan

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (0.1062ha)	28	29	27	29
Kiosk (180m^2)	19	18	18	19
Pub/ Restaurant (585m^2)	0	0	35	23
Hotel (2,736m^2)	11	29	21	11
Commercial Unit (3,798m^2)	75	13	10	63
Conference Centre (0.099ha)	9	4	24	7
Site B Total (9,351 m^2)	*143*	*92*	*135*	*153*
Office (21,348m^2)	455	65	44	382
Industrial/ Storage (19,233m^2)	97	20	11	80
Site A Total (40,581 m^2)	*552*	*85*	*55*	*462*
Total (Site B + Site A)	**695**	**177**	**190**	**615**

Sensitivity 1 (76% B1 and 24% B8 on Site A)

Table 8.3: Person Trips for Sensitivity 1

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Site B Total (9,351m^2)	*143*	*92*	*135*	*153*
Office (31,015m^2)	661	94	64	555
Industrial/ Storage (9,566m^2)	48	10	5	40
Site A Total (40,581 m^2)	*710*	*104*	*70*	*595*
Total (Site B + Site A)	**852**	**197**	**205**	**747**

Sensitivity 2 (25% B1 and 75% B8 on Site A)

Table 8.4: Person Trips for Sensitivity 2

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Site B Total (9,351m^2)	*143*	*92*	*135*	*153*
Office (10,145m^2)	216	31	21	181
Industrial/ Storage (30, 436m^2)	154	32	17	126
Site A Total (40,581 m^2)	*370*	*63*	*38*	*308*
Total (Site B + Site A)	**513**	**155**	**173**	**461**

8.2.3 As Sensitivity 1 with the highest proportion of B1 generates the highest number of trips, this scenario is taken forward in the following sections of this TA for highway network capacity impact assessments. Impacts of the illustrative master plan scenario will also be considered as it is the most

likely scenario to be delivered. The implications of having higher HGV numbers resulting from development aligned with Sensitivity 2 will also be discussed in the highway impact testing section of this report.

8.3 Mode Share

8.3.1 Mode share data has been sourced from TRICS, for the sites used to obtain the trips rates in Table 8.1 above. The mode shares are shown in Table 8.5 below for each land use category. It should be noted that 'vehicle occupants' is made up of vehicle drivers and vehicle passengers. Where provided, by TRICS, single vehicle occupants (drivers) are indicated in the table.

8.3.2 It should also be noted that the mode share data assumes that all land uses are mutually exclusive and additional. However, and with the proposed mix of uses, there is substantial potential for the linking of trips within the site, which is why the relatively high proportion of walk trips for some land uses is forecast. This is explained in more detail in Section 8.5 but essentially means that a high proportion of visitors to parcel B3b for instance, arrive on foot because they have driven to another on site use but walk to this element of the site. A further example is that people staying at the hotel walk to the Conference Centre but drive to and from the hotel.

Table 8.5: TRICS 2013(a) Mode Share Data

Land Use	Walk	Cycle	Public Transport	Vehicle Occupants (i.e. drivers + passengers)	Total
Petrol Filling Station	2.4%	0.2%	0.6%	70.0% drivers, 26.7% passengers	100%
Restaurant/café and retail unit	45.3%	1.5%	1.5%	51.7%	100%
Pub/ Restaurant	22.7%	1.0%	0.4%	75.8%	100%
Hotel	22.4%	2.0%	9.9%	65.6%	100%
Commercial Unit	7.3	0.7%	5.8%	86.2%	100%
Function/ Conference Centre	35.5%	-	9.7%	54.8%	100%
Office	14.1%	1.0%	15.4%	69.5%	100%
Industrial/ Storage	13.3%	1.9%	1.5%	83.2%	100%

8.4 Vehicle Trips

8.4.1 The vehicle trip rates from TRICS are shown in Table 8.6 below for each land use category, and the TRICS database printouts are attached at Appendix L.

Table 8.6: TRICS 2013(a) Vehicular Trip Rates for the Proposed Land Uses at Spalding

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (per ha)	238.710	241.935	206.452	219.355
Restaurant/café&retail(per 100sqm)	4.363	4.155	4.889	4.985
Pub/ Restaurant (per 100sqm)	0.000	0.000	2.874	2.122
Hotel (per 100sqm)	0.349	0.537	0.429	0.276
Commercial Unit (per 100sqm)	1.469	0.282	0.209	1.258
Conference Centre (per 100sqm)	0.544	0.389	1.036	0.753
Office (per 100sqm)	1.458	0.267	0.185	1.232
Industrial/ Storage (per 100sqm)	0.418	0.089	0.044	0.326

8.4.2 As mentioned previously, in addition to the illustrative master plan, Sensitivity 1 which generates the highest number of trips is taken forward for traffic impact assessment. The vehicle trip generation for the Illustrative Master plan and Sensitivity 1 scenarios is shown in Tables 8.7 and 8.8 respectively.

Table 8.7: Vehicle Trips – Illustrative Master Plan

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (0.1062ha)	25	26	22	23
Kiosk (180m^2)	8	7	9	9
Pub/ Restaurant (585m^2)	0	0	17	12
Hotel (2,736m^2)	10	15	12	8
Commercial Unit (3,798m^2)	56	11	8	48
Conference Centre (0.099ha)	5	4	10	7
Site B Total (9,351 m^2)	*104*	*62*	*77*	*107*
Office (21,348m^2)	311	57	39	263
Industrial/ Storage (19,233m^2)	80	17	8	63
Site A Total (40,581 m^2)	*392*	*74*	*48*	*326*
Total	**496**	**137**	**125**	**433**

Table 8.8: Vehicle Trips – Sensitivity 1

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (0.1062ha)	25	26	22	23
Kiosk (180m^2)	8	7	9	9
Pub/ Restaurant (585m^2)	0	0	17	12
Hotel (2,736m^2)	10	15	12	8
Commercial Unit (3,798m^2)	56	11	8	48
Conference Centre (0.099ha)	5	4	10	7
Site B Total (9,351 m^2)	*104*	*62*	*77*	*107*
Office (31,015m^2)	452	83	57	382
Industrial/ Storage (9,566m^2)	40	9	4	31
Site A Total (40,581 m^2)	*492*	*91*	*62*	*413*
Total	**596**	**154**	**139**	**521**

8.5 Reduction for Linked/ Internalised Trips

8.5.1 With the proposed mix of uses, there is substantial potential for linkage of trips within the site, which has not been taken into account in the above trip generation which assumes all elements are mutually exclusive and additional. For instance, in reality, hotel and conference/function centre guests may call into the pub/restaurant and may also use the petrol station and these trips will not be additional to the transport network.

8.5.2 It is estimated that up to 50% of pub visitors would be related to the hotel uses. Also, owing to its size and location, it is apparent that the restaurant/café and retail unit in parcel B3b would not generate sole purpose trips; all trips to the latter would be from other uses within the site i.e. by on-site employees or visitors to other land uses. These linked trips will therefore be internalised within the site and the external trip generation has been reduced accordingly. The full methodology for internalisation is shown in Appendix L.

8.5.3 Taking into account the internalisation discussed above, the external vehicular traffic on the surrounding highway network related to the proposed development, for the Illustrative Master Plan and Sensitivity 1 scenarios is summarised in Tables 8.9 and 8.10 below. Note that internalisation only takes place on Site B.

Table 8.9: External Vehicle Trips – Illustrative Master Plan Scenario

	AM Peak Hour		PM Peak Hour	
Land Use	Arrive	Depart	Arrive	Depart
Site A	392	74	48	326
Site B	96	55	60	92
Total	**488**	**129**	**108**	**418**

Table 8.10: External Vehicle Trips – Sensitivity 1 Scenario

	AM Peak Hour		PM Peak Hour	
Land Use	Arrive	Depart	Arrive	Depart
Site A	492	91	62	413
Site B	96	55	60	92
Total	**588**	**146**	**122**	**506**

8.5.4 The trips shown in Tables 8.9 and 8.10 above include pass-by and diverted trips. Pass-by trips already exist on the highway network and currently pass by the site on their normal route; the proposed development will become an intermediate stop on the usual route taken. Diverted trips also already exist on the high way network but involve a diversion from the route that would otherwise be followed. Due to the location of the site, edge of town, it is expected that most, if not all, vehicle trips to the petrol filling station on site will be pass-by or trips diverted from surrounding highway network. In assessing the development's traffic impact, both pass-by and diverted trips have been taken in to account, as discussed later.

9 Vehicle Trip Distribution and Assignment

9.1 Methodology

9.1.1 The distribution and assignment of vehicular trips is based on the type of each land-use. The site is located on the strategic road network and a number of proposed land uses are dependent on this strategic network. The distribution of vehicular trips related to these uses is therefore based on existing traffic movements on the strategic roads: A16, A1175, and B1173, on which the site sits. For land uses where it is envisaged that the trips generated would be more local, the distribution is based on Census 2001 Travel to Work Origin-Destination data, the latest available, for people who work in Spalding. The method of distribution by land use is therefore as shown in Table 9.1 below.

Table 9.1: Basis of Trip Distribution and Assignment

Land Use	Trip Distribution	Notes
Petrol Filling Station	Existing movements (Pass-by)	Generally petrol filling stations take trade from pass-by traffic and considering that Spalding has a number of petrol stations within the town and this site is located on the edge of town, it is assumed that the majority of its customers would be pass-by traffic and a few would be visitors to other site uses.
Restaurant/ café and retail unit	Ancillary	The relatively small size of the proposed uses and its location of edge of town make it less likely to receive sole purpose visitors. The visits to the units are therefore considered to be linked to other site uses.
Pub/ Restaurant	Existing movements (Pass-by)	Due to its edge-of-town location, it is envisaged that a considerable number of trips to the pub/restaurant would be linked to other uses particularly the hotel or would be pass-by trips. Therefore only 50% of pub/restaurant trips are considered sole purpose trips and have been distributed based on existing traffic movements.
Hotel	Existing movements (AAWT)	All hotel trips are assumed to be sole purpose and have been based on existing movements in the form of AAWT for the surrounding strategic road network as the majority of hotel trips are expected to be strategic rather than local.
Commercial Unit	Spalding Travel to Work Census Data (local bias)	The commercial unit is expected to attract mainly local trips and therefore its trip distribution is based on local travel to work information.
Function/ Conference Centre	Spalding Travel to Work Census Data (local bias)	The proposed Conference/ Function centre is expected to receive mainly local visitors from in and around Spalding and therefore its trip distribution is also based on local travel information.
Office	Existing movements (AAWT)	It is envisaged that the majority of office trips would be from strategic areas such as Peterborough and therefore their distribution is based on existing movements on the strategic road network.
Industrial/ Storage	Employees: Spalding Travel to Work Census Data (local bias) Trade: Existing movements (AAWT)	Employees of the storage and industrial facilities are expected to be local hence trips for this component are based on existing travel to work information. It is assumed these would account for about 10% of vehicle trips related to this use. The remaining 90% of vehicle trips would be trade trips and these are expected to be strategic and therefore distributed based on existing movements on the strategic road network.

9.1.2 From traffic counts undertaken previously, as discussed in Section 6, 24 hour AAWT flows for each of these roads have been estimated and these are shown in Table 9.2 below as well as the resulting distribution to be used for strategic trips. Table 9.2 also shows the resulting distribution, based on census travel to work data for Spalding workers, to be used for land uses envisaged to have a local bias in trips.

Table 9.2: Vehicular Trip Distribution and Assignment

Route	Main Areas Served by Route	Strategic Distribution (Based on Existing Movements)		Local Distribution (Census Based)
		24 Hour AAWT (vehs)	%	%
B1173 Cowbit Road	Spalding, Pinchbeck, South Kesteven	7,497	17%	52%
A16 (north of Cowbit Road)	Spalding, Long Sutton, Holbeach, Donington, Fleet, Gedney, Gosberton Village, Surfleet, Sutton Bridge, Weston, Moulton, Whaplode, Boston, North Kesteven	13,467	30%	38%
A16 (south of Cowbit Road)	Crowland, Peterborough	14,341	32%	6%
Barrier Bank	Cowbit	2,751	6%	2%
A1175	Deeping St Nicholas	6,858	15%	2%
Total		42,163	100%	100%

9.1.3 The strategic distribution and assignment has been applied to hotel, office, storage/industry trade trips and the local distribution and assignment has been applied to the commercial units, function/conference centre, and storage/industry employee trips.

9.1.4 As mentioned earlier, it is important to note that some of the vehicles turning into and out of the site would not be new trips on the local road network but would have been passing near the site on Cowbit Road, A1175 or A16 and made a short diversion into the site en-route to another destination. These effects have been taken into account in assigning trips on to the highway network. In particular, trips visiting the petrol filling station are all considered pass-by trips owing to the presence of petrol filling stations within Spalding.

9.1.5 The resulting assignment of the development's vehicular trips to the local network is shown on traffic flow diagrams in Appendix M.

10 Highway Impact and Mitigation

10.1 Introduction

10.1.1 This section sets out an assessment of the change in prevailing local transport conditions arising from the proposed development, focussing on junction capacity. The section uses the trip forecasts set out in Section 8 and the distribution and assignment in Section 9.

10.2 Committed Development and Transport Improvements

10.2.1 An outline planning consent was granted, by South Holland District Council, for 2,250 houses in the Holland Park development located south-west of Spalding, immediately west of B1172 Spalding Common about 1km west of the proposed Barrier Bank development. The Holland Park development has access to the local highway network, via The Broadway to the north and B1172 to the south.

10.2.2 Due to its proximity, it is envisaged that the committed Holland Park development would have some impact on the highway network serving the proposed Barrier Bank development. The traffic generation of the Holland Park development will therefore be taken into account within this Transport Assessment. The Holland Park development trips on the local high way network, taken from its TA document, are shown on traffic flow diagrams in Appendix M.

10.2.3 Due to the anticipated traffic growth in Spalding, in line with the rest of the UK, and the expected significant increase in delays at the level crossings owing to Network Rail's plans to increase rail traffic from 2 to about 6 trains per hour, Lincolnshire County Council and South Holland District Council have been working to promote a relief road to the west of Spalding to address these imminent problems. The Spalding Western Relief Road would also support the expected substantial amount of residential development expected to occur in Spalding over the next few years, particularly on the west side.

10.2.4 The Spalding Western Relief Road is to be completed and is to be split into three phases:

- Phase 1, which received outline planning permission in May 2012, will be constructed as part of the Holland Park development. This is the southern section and includes a junction with B1172 Littleworth Drove and a bridge over the railway.
- Phase 2 of the relief road would link Phase 1 to A151 Bourne Road.
- Phase 3 of the relief road would provide a link between A151 Bourne Road and B1356 Spalding Road, near Enterprise Way.

10.2.5 During the development of the planning application for Phase 2, which involved further discussions with South Holland District Council and local developers, a preferred way forward has emerged. Phases 2 and 3 are now being linked together, which will enable it to become more aligned with the developing South East Lincolnshire Local Plan. This is also in line with many of the views expressed during the initial public consultation for Phase 2.

10.2.6 It is envisaged that the Spalding Western Relief Road will help deliver many benefits for the town of Spalding including, amongst others;

- Reducing traffic congestion
- Reducing the impact of level crossings

- Improving west to south links around Spalding
- Supporting population growth

10.2.7 At the request of LCC highway officers, the transport benefits of the Spalding Western Relief Road have not been taken into account in the assessment of the Barrier Bank transport impact in this TA. The analysis of the Barrier Bank development impact in this TA is therefore a robust assessment.

10.3 Background Traffic Growth

10.3.1 The assumed opening year of the proposed completed development is 2018. The assessment year for this TA is therefore 2018, which is also five years after registration of the planning application. It is accepted that the real build out could be longer than this date but 2018 has been used and agreed with LCC as an appropriate year for assessment.

10.3.2 Background traffic growth is based on DfT Road Traffic Forecasts (2010/11) corrected by TEMPRO 6.2 growth factors. The Tempro forecast for background traffic includes housing growth of approximately 2338 households and job growth of 856 jobs in South Holland District between 2013 and 2018 (606 households and 316 jobs in Spalding).

10.3.3 It is unlikely that a Holland Park development of 2,250 dwellings (in Spalding) would be entirely additional to the current SHDC housing growth strategy; so there would most likely be some 'double counting' in the Tempro forecast. The planning assumptions for household growth in South Holland have therefore been reduced for Holland Park development which will be considered separately as a committed development.

10.3.4 The resulting locally adjusted traffic growth factors for South Holland's rural principal roads are as shown in Table 10.1 below.

Table 10.1: Tempro Growth Factors

Growth (2013-2018)	AM	PM
South Holland (Rural Principal Roads)	1.0349	1.0362
Spalding	1.0347	1.0367

10.3.5 The above traffic growth factors have been applied to the 2013 observed traffic flows and committed development traffic has been added over to obtain the 2018 baseline traffic flows. The resulting AM and PM peak hour 2018 baseline flows are shown on diagrams attached at Appendix M. The development impacts will be assessed against these baseline flows.

10.4 Existing Junction Capacity

10.4.1 The existing capacity of the junctions surveyed has been assessed using the computer program ARCADY 6.0. The junction models are based on OS data and on-site observations of the junction's geometry and operation. The models have been calibrated using intercept correction factors to provide results with queue lengths to within five vehicles of the average observed queue length during the peak hours.

10.4.2 The junction capacity analyses for the AM and PM peak hour traffic flows are summarised below, indicating maximum queue lengths and the ratio of flow to capacity (RFC). The RFC is a measure of operating conditions. A maximum RFC of 0.9 is generally accepted for new junctions, whilst RFCs of up to 1.0 are generally viewed as acceptable for the operation of existing junctions in peak periods, although the pattern of queuing is also important. The full capacity program outputs are attached at Appendix N.

A16/ B1173/A1175 Roundabout

10.4.3 The junction capacity assessment results for observed weekday 2013 AM and PM peak hours are summarised in Table 10.2 below.

Table 10.2: A16/B1173/A1175 Roundabout Capacity Assessment Summary – 2013 Existing

Junction Arm	2013 Existing			
	AM Peak Hour		PM Peak Hour	
	RFC	Queue (pcus)	RFC	Queue (pcus)
A16 (north)	0.43	1	0.39	1
A16 (south)	0.51	1	0.61	2
A1175	0.37	1	0.36	1
B1173 Cowbit Road	0.25	0	0.29	0

10.4.4 As shown in Table 10.2 above, A16/B1173/A1175 Roundabout Junction currently operates well within capacity. Its worst approach is the A16 southern arm, with an RFC of 0.61 (i.e. a theoretical reserve capacity of about 40% and a corresponding queue of only 2 pcus in the PM peak.

A1175/ Barrier Bank Roundabout

10.4.5 The A1175/ Barrier Bank junction capacity assessment results for observed weekday 2013 AM and PM peak hours are summarised in Table 10.3 below.

Table 10.3: A1175 Roundabout Capacity Assessment Summary – 2013 Existing

Junction Arm	2013 Existing			
	AM Peak Hour		PM Peak Hour	
	RFC	Queue (pcus)	RFC	Queue (pcus)
A1175 (north)	0.14	0	0.15	0
Barrier Bank (south)	0.07	0	0.10	0
A1175 (south)	0.17	0	0.14	0
Barrier Bank (north)	0.00	0	0.00	0

10.4.6 As shown in Table 10.3 above, the A1175/ Barrier Bank Roundabout Junction currently operates well within capacity. Its worst arm is the A1175 southern approach, with a maximum RFC of 0.17 (i.e. reserve capacity of over 80%) and with no queuing.

10.5 Future Baseline Junction Capacity

10.5.1 Baseline traffic flows for the assessment year have been derived from the observed 2013 traffic flows. The baseline assessments include background traffic growth from existing developments and traffic from committed development.

10.5.2 The junctions described in the previous section have been tested for capacity for the 2018 baseline flows without the proposed Barrier Bank development. The baseline assessment results are

summarised in Tables 10.4 and 10.5 below, and the capacity program printouts are attached at Appendix N.

A16/ B1173/A1175 Roundabout

10.5.3 The junction capacity assessment results for future 2018 Baseline AM and PM peak hours are summarised in Table 10.4 below.

Table 10.4: A16/B1173/A1175 Roundabout Capacity Assessment Summary – 2018 Baseline

Junction Arm	2018 Base			
	AM Peak Hour		PM Peak Hour	
	RFC	Queue (pcus)	RFC	Queue (pcus)
A16 (north)	0.45	1	0.48	1
A16 (south)	0.53	1	0.70	2
A1175	0.53	1	0.52	1
B1173 Cowbit Road	0.26	0	0.28	0

10.5.4 As shown in Table 10.4 above, A16/B1173/A1175 Roundabout Junction operates well within capacity in the 2018 future baseline scenario. Its worst approach is the A16 southern approach with an RFC of 0.70 and a queue of only 2pcus in the PM peak hour.

A1175/ Barrier Bank Roundabout

10.5.5 The A1175/ Barrier Bank junction capacity assessment results for future 2018 Baseline AM and PM peak hours are summarised in Table 10.5 below.

Table 10.5: A1175 Roundabout Capacity Assessment Summary – 2018 Baseline

Junction Arm	2018 Base			
	AM Peak Hour		PM Peak Hour	
	RFC	Queue (pcus)	RFC	Queue (pcus)
A1175 (north)	0.15	0	0.21	0
Barrier Bank (south)	0.07	0	0.13	0
A1175 (south)	0.25	0	0.21	0
Barrier Bank (north)	0.00	0	0.00	0

10.5.6 As shown in Table 10.5 above, the A1175/ Barrier Bank Roundabout Junction operates well within capacity in the 2018 future baseline scenario, with a theoretical reserve capacity of over 70%. Its worst approach is the A1175 (south) with an RFC of 0.25 in the AM peak hour. There is no queuing at this junction.

10.6 Junction Capacity Impact

10.6.1 This section discusses the impact of development proposals on junction capacity. The section considers the impact of the Illustrative master plan proposals which is the most likely scenario to happen, and the Sensitivity 1 scenario which would generate the greatest number of vehicular trips and therefore would have the greatest impact on junction capacity if it was to occur.

10.6.2 The development trips for each of the two development scenarios have been added to the 2018 base flows and the resulting flows with development are shown on traffic flow diagrams at Appendix M.

10.6.3 The junction capacity assessments with development traffic are based on the Arcady 8 models presented in the previous sub-sections. The junction capacity results for the assessment year traffic flows including development are summarised in Tables 10.6 and 10.7 below. As before, these show the maximum queue length and RFC for each arm, with a maximum RFC value of 1.00 considered to be generally acceptable for an existing junction. The full capacity program outputs are attached at Appendix N.

A16/ B1173/A1175 Roundabout

Table 10.6: A16/B1173/A1175 Roundabout Capacity Summary – 2018 with Development

Junction Arm	2018 Base + Development							
	Illustrative Master Plan				Sensitivity 1			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)
A16 (north)	0.56	1	0.53	1	0.58	1	0.55	1
A16 (south)	0.71	2	0.76	3	0.76	3	0.77	3
A1175	0.73	3	0.62	2	0.78	3	0.63	2
B1173 Cowbit Road	0.32	0	0.56	1	0.33	1	0.64	2

10.6.4 As shown in Table 10.6 above, A16/B1173/A1175 Roundabout Junction would operate well within its capacity with the development proposals under both the Illustrative Master Plan and Sensitivity 1 scenarios. The junction would have a theoretical reserve capacity of over 20% with queues of only about 3 pcus on the A16 southern arm and A1175 during the peak hours.

A1175/ Barrier Bank Roundabout

10.6.5 The A1175/ Barrier Bank junction capacity assessment results for the 2018 with development scenarios in the AM and PM peak hours are summarised in Table 10.7 below.

Table 10.7: A1175 Roundabout Capacity Assessment Summary – 2018 with Development

Junction Arm	2018 Base + Development							
	Illustrative Master Plan				Sensitivity 1			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)
A1175 (north)	0.16	0	0.24	0	0.16	0	0.24	0
Barrier Bank (south)	0.09	0	0.13	0	0.09	0	0.14	0
A1175 (south)	0.28	0	0.22	0	0.29	0	0.22	0
Barrier Bank (north)	0.04	0	0.07	0	0.05	0	0.07	0

10.6.6 As shown in Table 10.7 above, the A1175/ Barrier Bank Roundabout Junction would operate well within its capacity in the future with development. The junction would have over 70% reserve capacity with both the Illustrative Master Plan and Sensitivity 1 development proposals.

10.7 Site Access Junctions

10.7.1 New site access junctions are proposed as follows:

- B1173 Cowbit Road / Site Access staggered crossroads; and
- Barrier Bank Site Access

10.7.2 The B1173 Cowbit Road staggered access crossroads is assessed below. Barrier Bank is a dead end to the north with no opposing traffic coming from this arm, at the proposed Barrier Bank Access Junction. The capacity of this junction has therefore not been tested.

B1173 Cowbit Road Site Access

10.7.3 The main vehicular accesses to the site will take the form of a priority staggered crossroads with Cowbit Road which dissects the site. The proposed layout of the junction is shown on Drawing 0709-GA-008 in Appendix F. Assessment of this junction alignment has been carried out using PICADY with a summary of results presented in Table 10.8 below.

Table 10.8: B1173 Cowbit Road Site Access Capacity Assessment Results

Junction Arm	2018 Base + Development							
	Illustrative Master Plan				Sensitivity 1			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)	RFC	Q (pcu)
B1173 West	0.105	0	0.478	1	0.135	0	0.646	2
Site Access N	0.086	0	0.031	0	0.092	0	0.068	0
B1173 East	0.582	1	0.077	0	0.767	1	0.102	0
Site Access S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

10.7.4 Modelling results show that the junction would operate well within capacity under both the Illustrative Masterplan and Sensitivity 1 scenarios. The results indicate minimal queuing at the junction on the right turn lane in to Site A of only 1 pcu in the AM and PM peaks hours of both test scenarios and 2 pcus on the right turn lane into Site B in the PM peak hour of the Sensitivity 1 scenario. The right turn lane into Site A has a stacking capacity of about 9 pcus and that into Site B can accommodate about 5 pcus. The site access therefore has sufficient space to accommodate the modelled predicted minimal queues.

10.8 HGV Impact – Sensitivity 2

HGV Trip Generation

10.8.1 It is envisaged that amongst the three development Scenarios, Sensitivity 2 with the greatest B8 land use would generate the greatest number of HGVs. Table 10.9 below shows the HGV trip rate from the TRICS database for the same sites used to obtain the vehicle trip rates in Section 8.

Table 10.9: TRICS 2013(a) Trip Rates for the Proposed Land Uses at Spalding - HGVs

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (per ha)	19.355	25.806	3.226	0.000
Restaurant/café/retail (per 100sqm)	0.096	0.074	0.03	0.052
Pub/ Restaurant (per 100sqm)	0.000	0.000	0.000	0.000
Hotel (per 100sqm)	0.004	0.004	0.002	0.002
Commercial Unit (per 100sqm)	1.469	1.751	0.209	1.258
Function Centre (per 100sqm)	0.000	0.000	0.000	0.000
Office (per 100sqm)	0.006	0.005	0.000	0.002
Industrial/ Storage (per 100sqm)	0.024	0.023	0.005	0.008

10.8.2 Table 10.10 shows the resulting HGV trips for the Sensitivity 2 scenario.

Table 10.10: Development Trips (HGV Traffic)

Land Use	AM Peak Hour		PM Peak Hour	
	Arrive	Depart	Arrive	Depart
Petrol Filling Station (0.1062ha)	2	3	0	0
Kiosk (180m^2)	0	0	0	0
Pub/ Restaurant (585m^2)	0	0	0	0
Hotel (2,736m^2)	0	0	0	0
Commercial Unit (3,798m^2)	1	1	0	0
Function Centre (0.099ha)	0	0	0	0
Site B Total (9,351m^2)	*3*	*4*	*1*	*0*
Office (10,145m^2)	1	1	0	0
Industrial/ Storage (30, 436m^2)	7	7	2	3
Site A Total (40,581 m^2)	*8*	*8*	*2*	*3*
Total HGVs (Site B + Site A)	***11***	***12***	***2***	***3***

HGV Trip Assignment

10.8.3 The development HGV traffic has been assigned onto the highway network based on existing daily HGVs proportions on the network. These proportions are shown in Table 10.11 below.

Table 10.11: Development Trips (HGV Traffic)

Road	Existing HGVs (AADT)	% Split HGV Assignment
B1173 Cowbit Road	298	5%
A16 (north of Cowbit Road)	2484	42%
A16 (south of Cowbit Road)	2240	38%
Barrier Bank (south of A1175)	76	1%
A1175	833	14%
Total	n/a	100%

Development HGV Impact

10.8.4 HGV traffic generated by the development is compared to that which already exists on the surrounding highway network in the AM and PM peak hours in Table 10.12 below.

Table 10.12: Existing and Development HGV Peak Hour Two Way Flows

Road	AM Peak Hour (0800 – 0900)			PM Peak Hour (1700 – 1800)		
	Existing HGVs	Development HGVs	% Impact	Existing HGVs	Development HGVs	% Impact
B1173 Cowbit Road	34	1	3.4%	12	0	2.3%
A16 (north of Cowbit Road)	150	10	6.6%	116	2	2.0%
A16 (south of Cowbit Road)	133	9	6.7%	108	2	1.9%
Barrier Bank (south of A1175)	5	0	5.2%	4	0	1.5%
A1175	65	3	5.0%	43	1	1.8%
All Roads Combined	387	23	6.1%	283	5	1.9%

10.8.5 The impact of development, in terms of percentage increase in HGV traffic, on each road is greater in the AM peak than in the PM peak hour, as shown in Table 10.12. The greatest impact is on the A16 with a 6.7% HGV increase on the section south of Cowbit Road and 6.6% on the northern section. It is considered that this increase in HGV on the A16 is minimal.

10.8.6 As shown in Table 10.10, a maximum of only 8 HGVs would arrive at Site A in the AM peak hour. This is equivalent to about 1 HGV arriving every 8 minutes. The proposed right turn lane at the site access junction can accommodate up to 3 HGVs which is sufficient stacking capacity for the predicted level of use; moreover the 8 HGVs would come from two directions i.e. some would approach the site from Spalding and would therefore be left turners.

10.9 Summary

10.9.1 The above assessment has shown that the traffic associated with all the development scenarios can be successfully accommodated on the road network and that the impacts would be non-material. The junctions assessed would operate well within capacity in both the Illustrative Masterplan and

Sensitivity 1 scenarios and the predicted increase in HGVs in the Sensitivity 2 scenario would have no detrimental impact on the strategic highway network. The proposed site access junction off B1173 includes right turn lanes which can accommodate the predicted minimal right turn queues without blocking main line traffic. The right turn lanes also have sufficient stacking capacity for the predicted HGVs.

11 Impact on Other Modes of Travel

11.1 Introduction

11.1.1 As set out previously in this report, this edge of town development has a focus on road connections for both business/trade and access. However, there are opportunities to travel by other modes and these need to be catered for wherever possible.

11.2 Walk and Cycle

11.2.1 This section discusses the improvements to be made by the proposed development in order to improve sustainable access to the Site.

11.2.2 As shown on the Illustrative Masterplan, the internal lay out of the Site will be permeable allowing direct routes for walking and cycling between the different land uses. Uncontrolled pedestrian crossing facilities will be provided in the form of dropped kerbs and tactile paving to connect Sites A and B and facilitate pedestrian and cyclist's movements between the two sites.

11.2.3 Secure cycle parking will be provided for each land use within the site in the form of Sheffield stands.

11.2.4 Considering routes and 'journeys' beyond the site boundary, the routes which will be of principal importance for pedestrian and cyclist journeys are those between the site and Spalding Town and between the Site and the village of Cowbit to which access by cycling is a feasible option. Connections to nearby bus stops are also important.

11.2.5 The main pedestrian and cycle route between the Site and Spalding is via Fen End Lane, Burr Lane and B1173. To improve this route and encourage sustainable access to the site, a short section of footway could be provided, subject to detailed design and engineering exercises, on Burr Lane to connect the footways on Fen End Lane and B1173 towards Spalding. The proposed additional connection is shown in Figure 11.1. As this connection would be on highway controlled land it would require support from LCC. Subject to LCC support, the viability of this connection could be discussed post submission with LCC. The connection would be outside of the development redline and as part of the high network, would be subject of a S278 agreement.

11.2.6 The current cycling route between Cowbit and Spalding is via Barrier Bank, A1175 and the B1173. As part of the proposed development, a cyclist link could be provided across adopted highway land to connect Barrier Bank directly to B1173. WSP have considered at a high level, the potential to incorporate a new cycle connection between Barrier Bank and the B1173 Cowbit Road. As this intervention would be on highway controlled land it would require support from LCC. Subject to LCC support, the viability of this connection could be discussed post submission with LCC and with delivery being dependent upon demonstrable need, engineering viability and a necessary Road Safety Audit. If deemed to be a valuable addition to the cyclist network, possible additional funding streams would also be explored. The connection would be outside of the development redline and as part of the high network, would be subject of a S278 agreement. An indicative alignment of the connection is shown on Figure 7.1.

11.2.7 This link is shown on Figure 7.1. It is envisaged that provision of this link will improve and encourage sustainable travel between Cowbit, Spalding and the Site as cyclists will no longer have to use the

heavily trafficked A1175. The new route is also more direct and shorter that the existing route via A1175.

11.2.8 WSP have discussed the above cycle improvement proposals with Pedals, Spalding's cycle action group, who have supported these proposals subject to the engineering feasibility of their delivery. Other possible proposed pedestrian and cyclist improvements to encourage access to the site by these modes are discussed in Section 12.

11.3 Public Transport

11.3.1 There are no bus stops or routes via any of the roads that front the site. WSP have had discussions with LCC and there is a commitment from the applicant that bus access could be catered for within Site A should there be demand for this in the future.

12 Framework Travel Plan

12.1 Introduction

12.1.1 As set out previously, considering the development's location being edge of town and close to the strategic road network, car use is likely to be the mode of first choice for those travelling to the development. The car will also be essential for a considerable proportion of the development proposals including the petrol filling station and warehousing.

12.1.2 While this TA has demonstrated that the proposed development's impact on highway capacity and safety are not significant, the overall aim of reducing car travel and increasing travel choices for the development will still be important. A Travel Plan (TP) will therefore be a key mechanism to achieve this aim.

12.1.3 This section presents a Framework Travel Plan for the entire site, around which any travel plans for individual uses will be prepared.

12.1.4 It sets out measures and principles that will potentially be put into place to encourage travel by sustainable modes, as well as those that may be required of individual uses within the overall development. Any individual occupier Travel Plan would need to be compliant with and be consistent with the wider requirements of the Framework Travel Plan. The framework also briefly sets out monitoring procedures and potential timescales, as required by Department of Transport's Guidance on Transport Assessments (March 2007). Each individual occupier would be expected to prepare a full travel plan for their business prior to occupation. This is expected to be secured by a planning condition.

12.2 Travel Plan Co-ordinator

12.2.1 Travel Plan Coordinator is a key element of Travel Plans, as it is their responsibility to promote and encourage travel by sustainable modes through the active uptake of Travel Plan initiatives.

12.2.2 The Travel Plan Coordinator will be appointed by each individual occupier and will be responsible for the implementation, administration and monitoring of the Travel Plan. The contact details of the coordinator will be submitted to Lincolnshire County Council (LCC) and likewise, the coordinator will be advised of the relevant contact personnel at LCC so that regular dialogue can be established. The coordinator will be the first point of contact for all matters relating to travel to and from the site.

12.2.3 The Travel Plan Coordinator will be part of the on-site staff. The specific member of staff cannot be identified at this stage as the end users of the site are largely unknown; however it is likely to be an office manager or equivalent. The appointment will be made as soon as is viable once the end users of the site are known.

12.2.4 In general, the hallmark of a successful Travel Plan Co-ordinator is a commitment stemming from a personal understanding of the value of reducing traffic. Their key roles will include:

- Overseeing the implementation and development of the Travel Plan;
- Raising awareness of the travel opportunities for the site and the potential health and financial benefits from reducing single occupancy car trips;
- Investigate the demand for and feasibility of a car club scheme;

- Liaising with employees, LCC officers and South Holland District Council officers and other key stakeholders, such as public transport operators;
- Acting as the ultimate point of contact on travel matters for employees and visitors.

12.3 Travel Plan Information Park

12.3.1 A Travel Plan Information Pack will be provided to all new staff members. Education and advertising have been found to be essential to the success of Travel Plans and this will help staff to access the relevant information about sustainable journeys to work.

12.3.2 The pack will include details of walk and cycle routes, public transport, including the locations of nearest bus stops and Spalding Rail Station. It will also include bus route maps and timetables as well as relevant contact details for bus and rail companies to ensure that further information can be obtained when necessary.

12.3.3 The Information Pack will be compiled by each occupier prior to the occupation of the site. The packs will be sent to employees with their contract or provided within their initial Induction by the Travel Plan Coordinator.

12.4 Encouraging Walking and Cycling

12.4.1 The primary focus of the pedestrian strategy for the site will be the promotion of a pedestrian-friendly environment both on-site and within its immediate environs, with concurrent steps to maximise the accessibility of the site for pedestrians. Cycling presents an opportunity to maximise non-vehicular access by those falling outside the feasible pedestrian access area but with trips originating within a reasonable distance of the site.

12.4.2 The town already boasts a network of high quality footpaths and walkways, making adequate provision for pedestrian movement. This network of pathways is well lit, provides suitable crossing points and is segregated from vehicular movements when necessary. This network of pathways provides an ideal starting point for pedestrian access to and from the site and should help augment the pedestrian mode share. Pedestrian and cycle access to the development, from Spalding Town, would be available via Fen End Lane and Cowbit Road.

12.4.3 The development proposals include the retention and improvement of a footpath that runs through the northern land parcel. This footpath starts at Fen End Lane and will be connected to the lower site by the provision of a crossing point with dropped kerbs and tactile pacing on Cowbit Road.

12.4.4 Walking and cycling to access the site will also be encouraged by the development's Travel Plan Co-ordinator, who will actively promote the financial and health benefits of these modes in comparison with the private car, amongst employees.

12.4.5 The Travel Plan co-ordinator will disseminate information on local cycle routes to all employees and promote services that could encourage cycling e.g. the free use of the Lincshare website to find cycle buddies, and government's Cycle to Work Scheme, an initiative which provides a tax incentive to employees who purchase a bicycle for the primary purpose of cycling to work.

12.4.6 In addition to the above, cycle usage will also be encouraged by the provision of on-site cycle parking facilities. The usage of these stands will be monitored over the lifetime of the Travel Plan in order to make sure provision keeps pace with demand.

12.4.7 The location of cycle parking will be advertised within the information pack. It will be stated that the use of such parking is free and available to all. The location of the stands will also be pointed out during the Induction process for new starters.

12.4.8 For staff keen to take up cycling, the Travel Plan Coordinator will promote local cycle training schemes, where they can improve their skills and gain confidence. The Travel Plan Coordinator will promote the setting up of a site wide Bicycle User Group (BUG) to allow cyclists to have a forum where they can express their views, provide support and encouragement and suggest improvements to cycle facilities both within and outside the site.

12.5 Promotion of Public Transport

12.5.1 There is currently no public transport access to the site. Discussions have been held with LCC and if there is a future demand, Site A can be designed up at the Reserve Matters Stage to provide facilities for bus stopping.

12.5.2 Mini bus usage will be promoted as a means of access to the larger B8 land uses and a series of pick up and drop off points will be agreed.

12.6 Car Sharing

12.6.1 Car sharing presents an opportunity to reduce the number of vehicles accessing the site whilst maintaining its advantages for those for whom non-car access is not a viable option. It is widely recognised as a sustainable and cost effective option in trip reduction and has been utilised successfully in comparable developments.

12.6.2 Car sharing is already established within the Lincolnshire area as a viable option for the journey to work. Lincolnshire's web-based car share partner matching system, Lincshare, would be an ideal interface for the development occupants.

12.6.3 The Travel Plan Coordinator(s) would promote the use of the Lincshare database to all the occupants and details of the database will be included within the information pack. A private group will also be set up through this scheme, which will be looked into by the Travel Plan Coordinator(s) if the initial occupation survey finds that this is preferred by staff/visitors.

12.6.4 As an incentive to car sharing, there will be parking spaces reserved for those that travel to work with other employees. These will be allocated based upon initial uptake of the car share scheme.

12.7 Implementation

12.7.1 The Travel Plan Co-ordinator(s) will be responsible for implementing the Travel Plans on occupation of the site, in partnership with LCC. The following schedule outlines the timetable for implementing the Travel Plan initiatives.

12.7.2 Within first month of occupation:

- Appoint a Travel Plan Co-ordinator and provide details to LCC;
- Prepare all marketing material and public transport information;

- Update employers websites with marketing and travel information; and
- Prepare information packs.

12.7.3 Within three months of occupation:

- Display all public transport and walking/cycle route information;
- Provide information packs to staff, including information regarding the car share scheme and guaranteed ride home and public transport ticket loans (if applicable);
- Undertake Personal Travel Planning with staff; and
- Set up a Bicycle User Group/Advertise Cycle Training Schemes.

12.7.4 Within six months of occupation (and periodically thereafter):

- Undertake an ATC survey at the site access junctions.
- Request that all staff complete a travel to work survey specifying mode of travel to work, arrival and departure times and home postcode.
- Compile/update a staff database including postcodes and travel to work data.
- Provide results of the travel survey to LCC, and agree suitable targets with LCC. Targets will aim at reducing single occupancy car trips in favour of sustainable modes and will be SMART (Specific, Measurable, Achievable, Realistic and Time Bound).

12.8 Monitoring and Review

12.8.1 In order to determine the effectiveness of the Travel Plan and so that future revisions to it are effective, monitoring will take place regularly over the lifetime of the Travel Plan. One element of this monitoring will be the number of vehicles accessing the site (i.e. traffic generation of the development). This will be identified through a classified traffic count for customers and a questionnaire-based survey for staff in order to determine travel modes for journeys to and from the site.

12.8.2 It is proposed that employee travel surveys be undertaken in Years 1, 3 and 5, following occupation of the development site, with 'snapshot' surveys in intermediate years. This would use a questionnaire survey to establish an annual review programme for monitoring the achievements of targets which would have been set following the Year 1 surveys.

12.8.3 In the event that any of the agreed targets are not met, the Travel Plan Coordinator will, in discussion with LCC, introduce additional initiatives and disincentives. Where targets are met, the Travel Plan Coordinator will agree revised SMART targets with LCC.

12.8.4 Survey results will be made available to staff via the Travel Plan Co-ordinator and progress towards headline targets will be communicated on a regular basis. Data will also be shared with key stakeholders via an annual monitoring report prepared by the Travel Plan Co-ordinator and presented to LCC within three months of the date of the monitoring surveys.

13 Conclusion

13.1 Summary

13.1.1 This TA has considered the transport impacts associated with a proposed 'gateway' development to the south of Spalding. The proposals would see the delivery of a number of roadside related land uses on the smaller Site B, whilst the potential to deliver significant B1 land uses on the larger Site A has also been assessed.

13.1.2 Given the nature of the proposals and their location in relation to the Spalding, road traffic capacity and impact has been the primary focus of this assessment and this report had demonstrated that acceptable impacts would be realised and that sufficient highway capacity exists to accommodate future background growth and the forecast development impact.

13.1.3 The elements of the proposals that are being applied for with no elements reserved (other than landscape) have been tested using swept path software and have been found to be sound and have been designed in accordance with best practice and appropriate standards.

13.1.4 Although it is not considered that there will be significant demand from pedestrians and cyclists, access to and from the site is possible and will be enhanced as a result of the development proposals. Both pedestrians and cyclists can make use of the existing public footpath that runs along Fen End Road and into Site A where it will be enhanced and tied into the newly provided road and footway network. In addition, a new uncontrolled pedestrian crossing will be provided across the B1173 that will connect Site A and Site B. The potential for a new cycle connection along Barrier Bank and additional footway along Burr Road has also been considered and can be discussed with SHDC and LCC post submission and subject to the necessary design exercises. The provision of these facilities would provide for, and mitigate against, any impacts associated with the modes of walking and cycling.

13.1.5 Bus access is not currently provided along any of the roads that front the site. However, discussions with LCC have taken place and there is a commitment that through the RMA process bus access can be catered for within Site A as required.

13.1.6 Therefore and given the lack of transport impacts associated with the proposals, and set against the associated benefit that the proposals will bring to the area, it is considered that in transport terms there is no reason for the proposals to be deemed unacceptable and should therefore be supported.

FIGURES

Figure 1.1 Site Location

Figure 4.1 Walk Isochrones

Figure 4.2 Cycle Isochrones

Figure 5.1 Existing Bus Routes

Figure 7.1 Potential Cyclist Connection on Barrier Bank

Figure 11.1 Potential Footway Connection on Burr Lane

Drawn By: UKEWS001 Date Modified: 13/12/2013 16:13

File: Created using iGIS, WSP's Online Mapping System

Key

Site Boundary

0 100 200 300 400 m

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Imagery ©2013 Digit

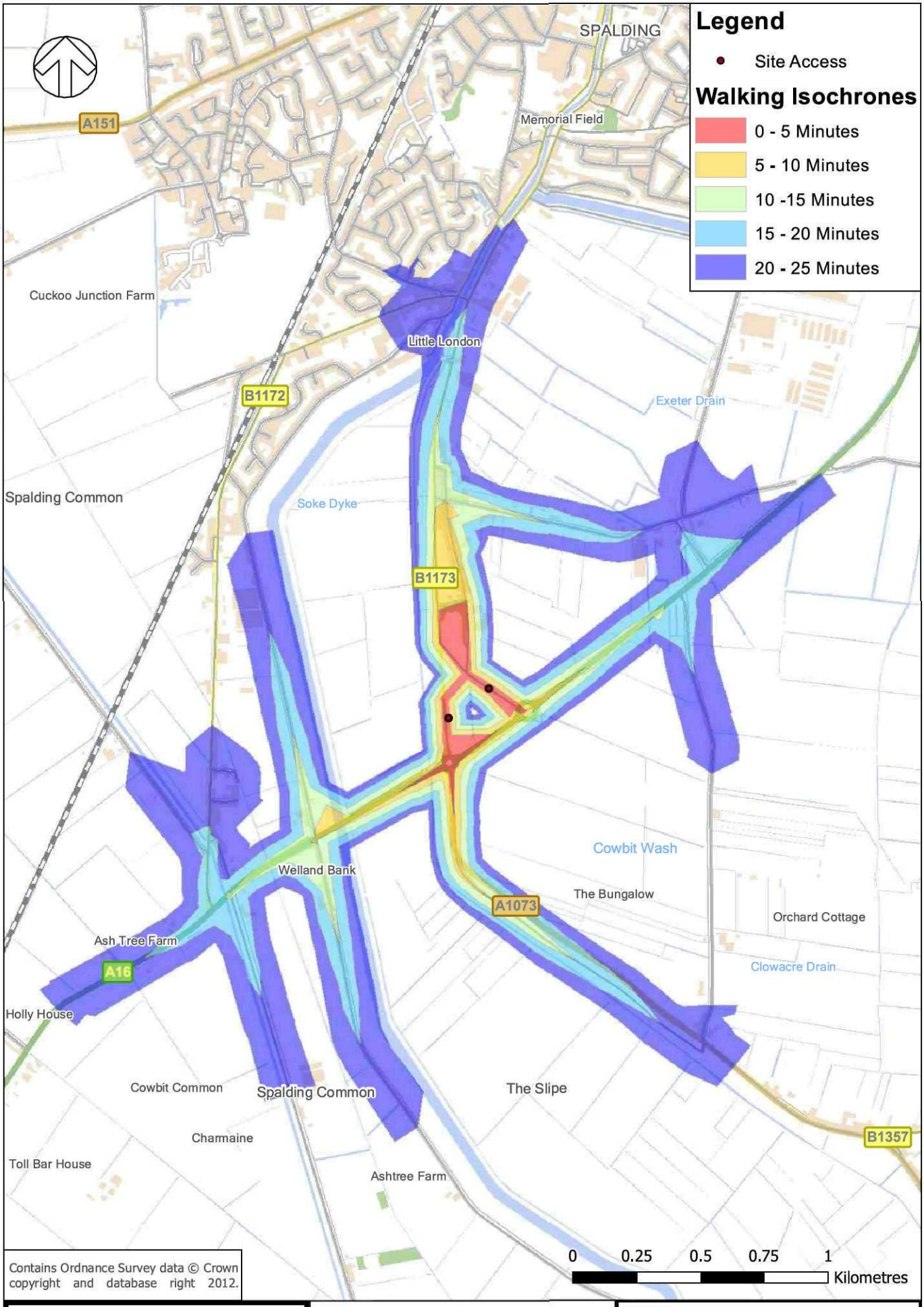
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TITLE:

Figure 1.1

FIGURE No:

Site Location



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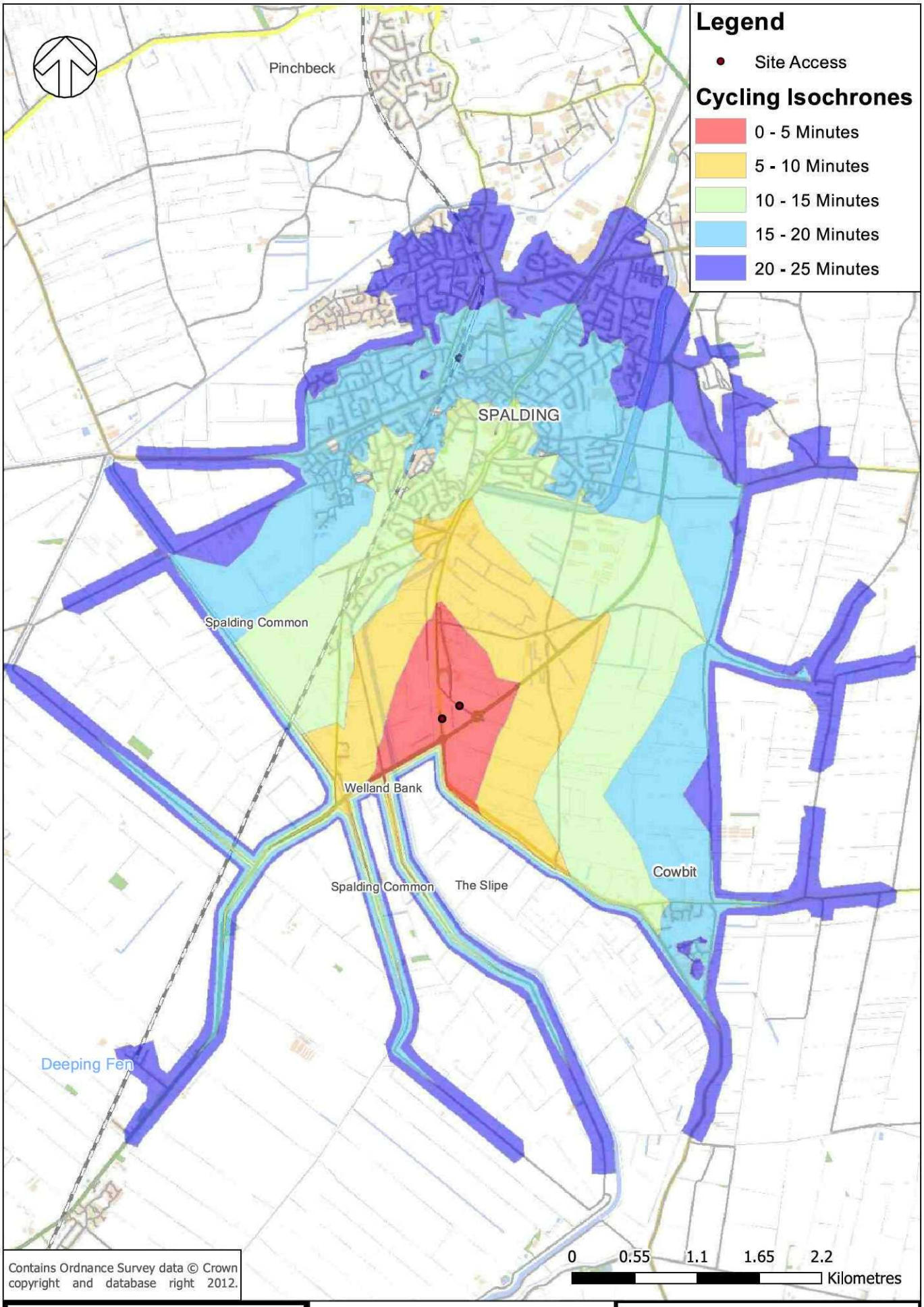
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LINCS GATEWAY, SPALDING
PEDESTRIAN ACCESSIBILITY

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FIGURE 4.1



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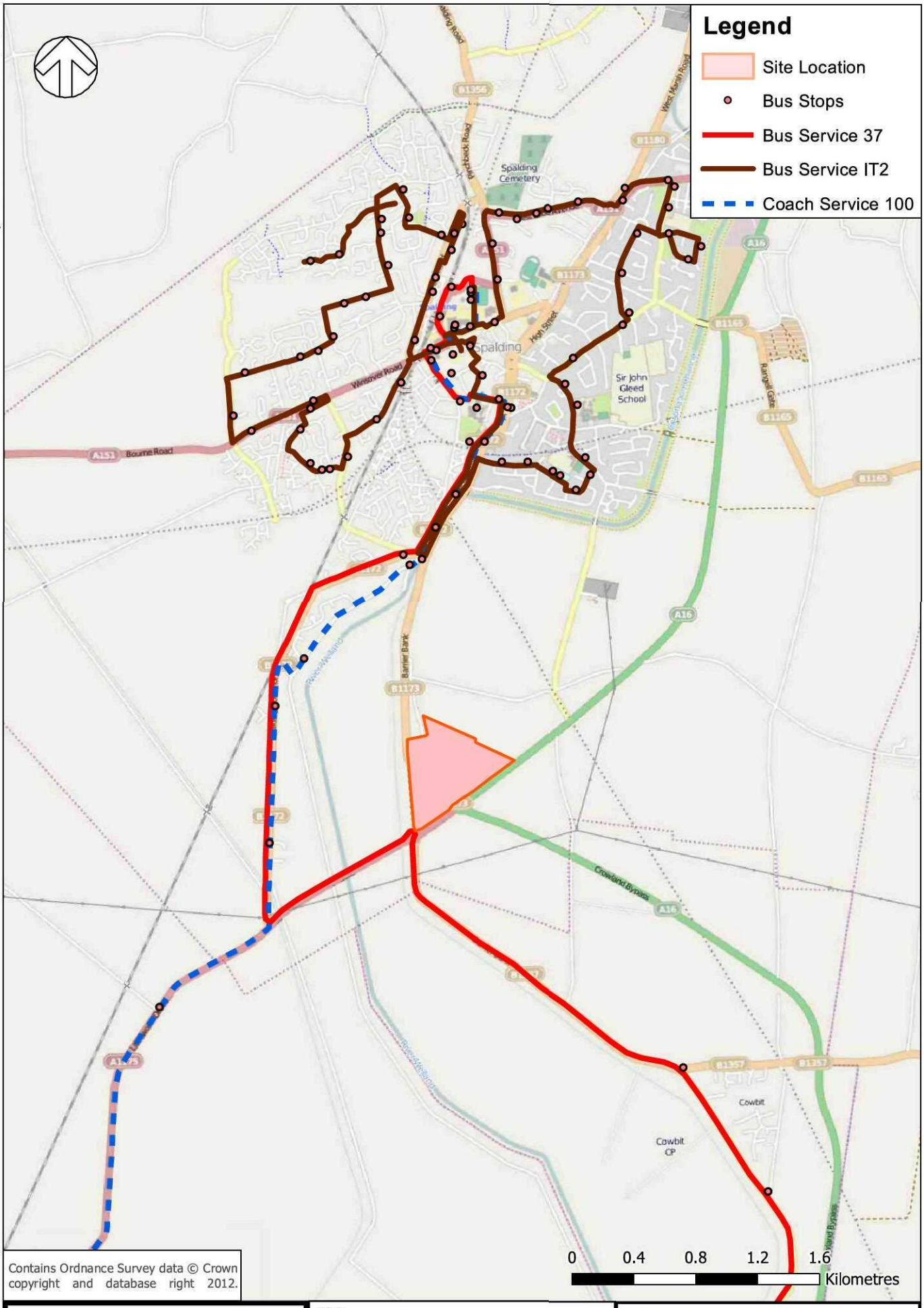
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LINCS GATEWAY, SPALDING
CYCLIST ACCESSIBILITY

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FIGURE 4.2



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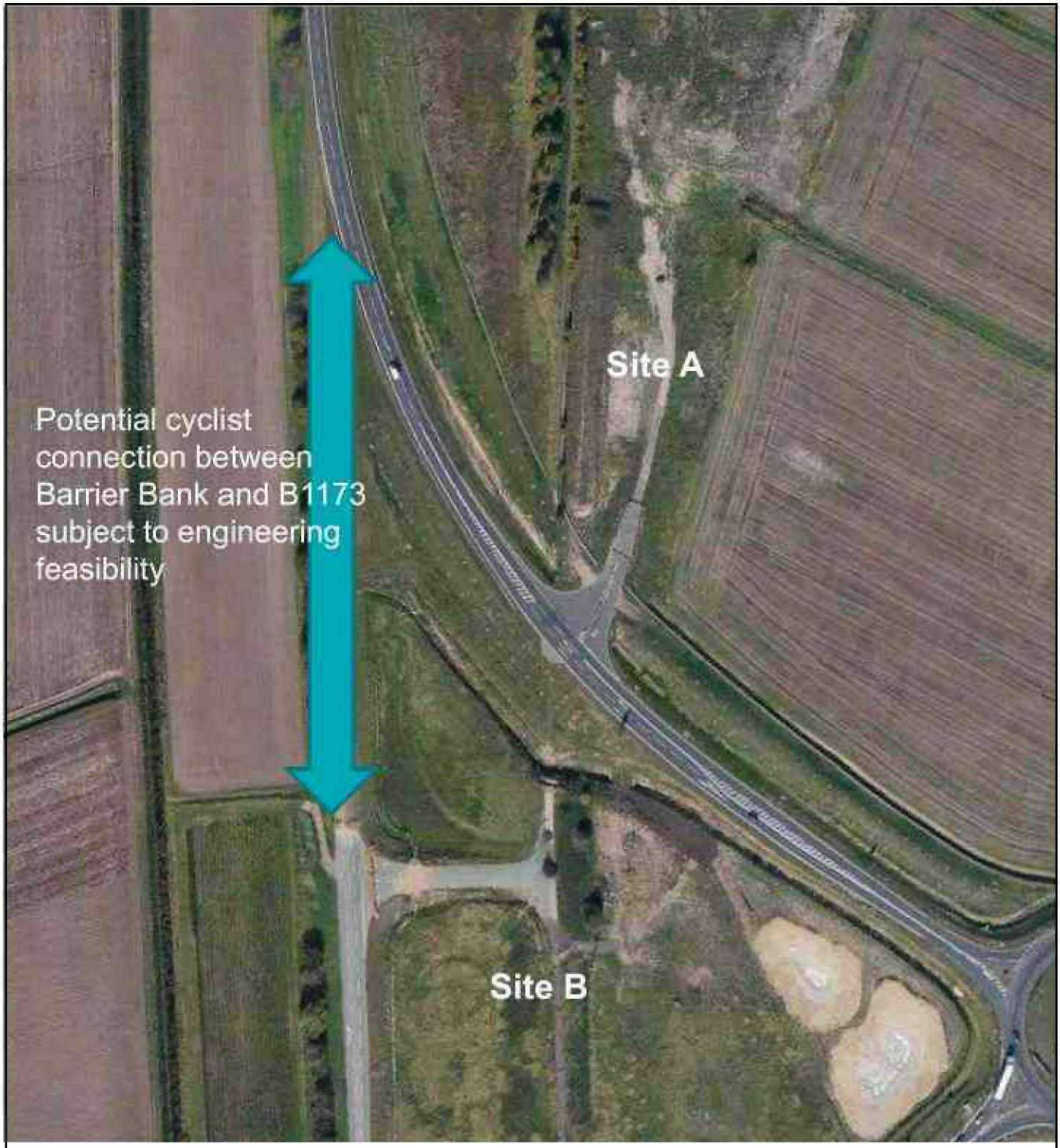
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TITLE:

LINCS GATEWAY, SPALDING
EXISTING BUS ROUTES

FIGURE No:

FIGURE 5.1



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TITLE:

Lincs Gateway, Potential Cycle Connection

FIGURE No:

Figure 7.1



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TITLE:

Lincs Gateway Spalding

FIGURE No:

11.1