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Proposed Residential Development

Grammar School Lane, Brigg

Transport Assessment

November 2023

PROPOSED RESIDENTIAL DEVELOPMENT
GRAMMAR SCHOOL LANE
BRIGG

GLEESON REGENERATION

TRANSPORT ASSESSMENT

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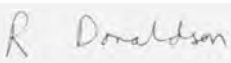
Report prepared by	Robbie Donaldson		30/11/2023
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CONTENTS

1.0	INTRODUCTION	1
2.0	RELEVANT LOCAL AND NATIONAL POLICY	4
3.0	THE APPLICATION SITE AND EXISTING HIGHWAY NETWORK	9
4.0	ACCESS BY SUSTAINABLE TRANSPORT	21
5.0	DEVELOPMENT PROPOSALS	27
6.0	TRIP GENERATION AND DISTRIBUTION	31
7.0	BACKGROUND TRAFFIC GROWTH	33
8.0	TRAFFIC IMPACT OPERATIONAL ASSESSMENTS	34
9.0	SENSITIVITY TEST	41
10.0	SUMMARY AND CONCLUSIONS	47

APPENDICES

Appendix BGH1	Site Location Plan
Appendix BGH2	2022 Existing Traffic Flows
Appendix BGH3	Junction Model Outputs
Appendix BGH4	Personal Injury Collision Data
Appendix BGH5	Walking TRACC Accessibility Plans
Appendix BGH6	Cycling TRACC Accessibility Plans
Appendix BGH7	Public Transport TRACC Accessibility Plans
Appendix BGH8	Proposed Site Layout
Appendix BGH9	Proposed Site Access Junction with Grammar School Lane – Priority Crossroads
Appendix BGH10	Swept Path Analysis – Proposed Site Access Junction
Appendix BGH11	Swept Path Analysis – Internal Site Layout
Appendix BGH12	TRICS Data
Appendix BGH13	Trip Distribution Percentages
Appendix BGH14	Development Generated Traffic Flows
Appendix BGH15	2028 Base Traffic Flows
Appendix BGH16	2028 Predicted Traffic Flows
Appendix BGH17	Proposed Site Access Model Output
Appendix BGH18	2028 Predicted Sensitivity Test Trip Distribution Percentages
Appendix BGH19	2028 Predicted Sensitivity Test Development Generated Traffic Flows
Appendix BGH20	2028 Predicted Sensitivity Test Traffic Flows

1.0 INTRODUCTION

Background

1.1 This Transport Assessment (TA) has been prepared by Bryan G Hall (BGH) on behalf of Gleeson Regeneration to support a planning application for residential development of 112 dwellings on land located to the east of Grammar School Lane, Brigg.

1.2 The site is located approximately 1.0 kilometre to the north of Brigg town centre, as the crow flies. The site is currently undeveloped fields used for agriculture, bounded by the M180 motorway to the north, agricultural land to the north-east, a residential neighbourhood to the south and by Grammar School Lane to the west.

1.3 A plan showing the site location relative to the surrounding highway network is provided at Figure 1.1 and **Appendix BGH1**.

Figure 1.1 - Site Location

1.4 The development proposals seek to provide a new residential development on the site which will comprise 112 dwellings. Vehicular and pedestrian access to the site will be taken from a new priority crossroads arrangement with Grammar School Lane to the west.

Local Plan Site Allocations

1.5 The proposed residential development site forms part of a wider area identified by North Lincolnshire Council (NLC) as land for residential development, as set out

within NLC's Housing and Employment Land Allocations Development Plan Document (DPD), which was adopted in March 2016. The housing allocations at the north-eastern extents of Brigg have been divided into five separate allocated sites known as BRIH-1, BRIH-2, BRIH-3, BRIH-4 and BRIH-5, and these are also shown on the site location plan at **Appendix BGH1**. The site which is the subject of this TA forms part of allocation site BRIH-2.

1.6 It has been a longstanding aim of NLC to deliver a link road around the north-eastern extents of Brigg, linking the A18 with Atherton Way. The route of the prospective link road runs through the five sites allocated for residential development.

Planning Background

1.7 Two planning applications were submitted in August 2023 by Bellway Homes (Yorkshire), comprising the following:

- A full planning application for residential development (Use Class C3) with associated works, including highways, open space, landscaping and drainage infrastructure (planning reference: PA/2023/1236); and

- An outline planning application for residential development (Use Class C3), with all matters reserved (planning reference: PA/2023/1425).

1.8 The full planning application is for up to 290 dwellings, to be accessed via a new ghost island right turn lane priority junction with the A18 Wrawby Road. The outline planning application site will accommodate a further circa 266 dwellings, but with all matters reserved. It is the intention that the outline site is to be accessed from the A18 Wrawby Road (via the new priority junction proposed as part of the full application) and Grammar School Lane, but the detail of access would be dealt with as a reserved matter. A TA for the developments was prepared by BGH and submitted with the applications, and that TA is referred to within this TA in support of the Gleeson Regeneration proposed development site which forms part of BRIH-2.

1.9 The full Bellway Homes (Yorkshire) application site comprises around 75% of the land which forms the BRIH-3 and BRIH-4 allocation sites, with the south-eastern BRIH-3 and BRIH-4 site boundaries running alongside the A18 Wrawby Road. The outline Bellway Homes (Yorkshire) application site incorporates the remainder of the BRIH-3 allocation site and the whole of the BRIH-2 allocation site. The BRIH-2 allocation site meets Grammar School Lane at its western boundary.

1.10 The BRIH-5 site is located immediately to the west of Grammar School Lane, with the BRIH-1 site located further west, meeting Atherton Way at its western extents. The BRIH-1 and BRIH-5 allocation sites do not form part of either the submitted full or outline planning applications by Bellway, nor the Gleeson Regeneration application. They would be subject to separate planning applications going forward. However, in order to ensure a comprehensive assessment, they were taken into account within the TA prepared for the full and outline Bellway applications, and so have also been accounted for in this TA, as part of a sensitivity test. This sensitivity test looks at a future scenario with all five allocation sites and the link road in place.

Report Structure

1.11 This TA considers the current usage of the local highway network and assesses its suitability to accommodate the traffic that is likely to be generated by development on the application site. The TA considers the historic road safety record of the highway network in the vicinity of the site and considers access to the site via sustainable modes of travel. It also provides information on the proposed site access, servicing arrangements and parking provision.

1.12 Following this introduction, the TA is split into the following sections:

Section 2: sets out the relevant transport-related planning policies and guidance;

Section 3: provides a description of the setting of the site and the highway network in the vicinity of the proposed development. This section also considers the current traffic use and road safety characteristics of the local highway network;

Section 4: describes the accessibility of the site in terms of sustainable modes of transport;

Section 5: describes the development proposals and the means of access;

Section 6: sets out the trips likely to be generated by the development proposals and the distribution of these onto the local highway network;

Section 7: considers background traffic growth on the local highway network;

Section 8: provides details of the base operating conditions and the impact of the traffic generated by the proposed development on the local highway network in the vicinity of the site;

Section 9: provides details of the sensitivity text undertaken with all five housing allocation sites and the completed future link road; and

Section 10: provides a summary and draws the conclusions of the TA.

2.0 RELEVANT LOCAL AND NATIONAL POLICY

National Planning Policy Framework (NPPF)

2.1 The National Planning Policy Framework (NPPF) was most recently revised in September 2023. It sets out the Government's planning policies for England and how these should be applied.

2.2 Paragraph 110 of the NPPF states that:

> *"...In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*
>
> *a) Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
> *b) Safe and suitable access to the site can be achieved for all users;*
> *c) The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
> *d) Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."*

2.3 Paragraph 111 of the NPPF states that:

> *"...Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

2.4 Paragraph 112 of the NPPF goes on to state:

> *"Within this context, applications for development should:*
>
> *I. Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*

II. *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
III. *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
IV. *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
V. *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*

2.5 Paragraph 113 also states that developments that will generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment, so that the likely impacts of the proposal can be assessed. The planning application includes this TA, which is line with this requirement.

Planning Practice Guidance

2.6 In 2014, the Government released a number of updated Planning Practice Guidance (PPG) Notes linked to the NPPF. The aim of the PPG Notes is to help simplify the planning system in England and replace a number of historic guidance notes.

2.7 The updated PPG Notes cover Transport in two sections, the first being 'Transport evidence bases in plan making' and 'Travel plans, transport assessments and statements in decision taking'. The latter refers to TAs, Transport Statements and Travel Plans as ways of assessing and mitigating negative transport impacts of development, in order to promote sustainable development.

2.8 This TA and associated Travel Plan has been prepared in line with the key principles set out in the PPG Notes.

Manual for Streets

2.9 Although they do not form part of planning policy, Manual for Streets (2007) and Manual for Streets 2 (2010) provide national guidance on the design, construction, adoption and maintenance of urban streets, particularly residential streets. This guidance is referred to within this TA.

Local Policy

North Lincolnshire Local Development Framework - Core Strategy (June 2011)

2.10 The Local Development Framework Core Strategy was adopted in June 2011 and sets out the policies to guide development in North Lincolnshire up to 2026. It is a

key part of the Local Development Framework and informs decisions on planning applications.

2.11 Policy SC25: Promoting Sustainable Transport sets out the following Transport Demand Management tools which will be introduced:

- Reduce the need to travel and improve accessibility for all as part of all future spatial design with North Lincolnshire;
- Introduce appropriate demand management measures, to reduce car based travel by ensuring highway safety, improving and encouraging walking and cycling and integrate such measures with a high quality public transport network;
- Require that transport provision is integrated into the design of all development from the start of any development project;
- Apply maximum car parking standards and a car park charging regime within the context of urban and rural renaissance; and
- Support the progressive improvement of a high-quality public transport network by working in partnership with public transport operators and community transport providers to ensure a cohesive, flexible approach to improve the public transport network in North Lincolnshire and public transport connections beyond its boundaries.

2.12 This report has been prepared in accordance with the policies outlined within the Core Strategy, particularly Policy SC25.

2.13 NLC are currently in the process of bringing forward a new Local Plan, covering the plan period 2020 to 2038. The Regulation 22 Local Plan was submitted to the Secretary of State (SoS) for Examination in Public (EiP) on 11th November 2022. Following this there has been a number of questions raised by the Inspector on the content of the Local Plan and requesting additional information and clarity. With the latest response provided by the Council on 24th October 2023. Although not adopted, given the Emerging Local Plan has now been submitted to the SoS for Examination, the document, its policies and proposed allocations within, can be afforded limited weight in the determination of this planning application.

North Lincolnshire Local Plan Saved Policies (Adopted 2003, Saved Policies 2007)

2.14 In addition to the Core Strategy, this TA has also been prepared in line with the following Local Plan Saved Policies:

- Policy T1 - Location of Development – states that permission for proposals that generate significant volumes of traffic movement will be permitted provided: they are located in urban areas (including Brigg); where there is good access to rail, water and air transport, or to the wider North Lincolnshire Strategic Road Network; and where there exists or is the opportunity to provide infrastructure for walking, cycling and public transport;

- Policy T2 - Access to Development – advises that all development must provide satisfactory access and be adequately served by a choice of transport modes (public transport, cycling, and walking infrastructure) and the existing highway network;

- Policy T6 - Pedestrian Routes and Footpaths – states that major new developments will be required to include links to nearby existing or proposed pedestrian routes, to provide safe, convenient and attractive footpaths, to assist in the formation of a pedestrian-friendly network throughout North Lincolnshire; and

- Policy T19 Car Parking Provision and Standards – sets out parking standards for new development within the district, requiring 2 spaces for detached and semi-detached properties.

Brigg Link Road Highways Masterplan (September 2021)

2.15 As part of the evidence base for the emerging Local Plan, Local Transport Projects Traffic Engineering and Transport Planning consultants (LTP) prepared a 'Brigg Link Road Highways Masterplan' report on behalf of North Lincolnshire Council, dated September 2021

2.16 The LTP report considers delivery of the link road, to facilitate future residential development identified in the Housing and Employment Land Allocations Development Plan Document.

North Lincolnshire Local Development Framework – Housing and Employment Land Allocations Development Plan Document (March 2016)

2.17 The Housing and Employment Land Allocations DPD was adopted in March 2016 and sets out NLC's locations for new housing and employment developments. As described in Section 1.0, the DPD includes five allocation sites in Brigg, which are known as BRIH-1, BRIH-2, BRIH-3, BRIH-4 and BRIH-5. The site subject to this TA is part of site BRIH-2.

2.18 The DPD describes the market town of Brigg as:

> *"… an important service centre for the surrounding villages and a number of villages in the West Lindsey district. The town centre is thriving with a wide range of shops, services and facilities. It has good public transport links with Scunthorpe and Barton upon Humber and the surrounding villages."*

2.19 The DPD also highlights the need for new road infrastructure to be introduced to serve development on the five allocation sites, in the form of a link road around the eastern and northern extents of Brigg, between the A18 Wrawby Road and Atherton Way. The DPD recognises that the link road would improve traffic flows by increasing permeability, and that the link road should be designed in accordance with the design guidance in Manual for Streets.

North Lincolnshire's Fourth Local Transport Plan (LTP4) 2011-2026

2.20 NLC's Local Transport Plan 4 (LTP4) details the transport strategy for the North Lincolnshire area, for the 15-year period from 2011 to 2026. The LTP4 sets out a number of transport related strategic objectives for North Lincolnshire in order to support growth, which are:

- Facilitate economic growth by targeting transport improvements in key development areas and along key strategic network corridors;
- Reduce transport related carbon dioxide emissions and protect and enhance the natural and built environment through sustainable transport solutions;
- Improve transport safety and security relating to death or injury from transport, in order to contribute towards safer and stronger communities;
- Provide equal opportunities through improvements in accessibility to key local hubs and services by sustainable modes of transport, and
- Enhance people's health and wellbeing through the promotion of healthy modes of travel and provision of a high-quality integrated transport system that contributes towards long term sustainable regeneration.

North Lincolnshire Council's Residential Road Design Guide

2.21 Although not forming part of planning policy, the North Lincolnshire Residential Road Design Guide provides useful guidance on the design of residential development, which is referred to within this TA.

3.0 THE APPLICATION SITE AND EXISTING HIGHWAY NETWORK

The Application Sites

3.1 The site is located at the north-eastern extents of the market town of Brigg, North Lincolnshire, approximately 1 kilometre to the north-east of the town centre as the crow flies.

3.2 The site is currently undeveloped fields used for agriculture, bounded by the M180 motorway to the north, agricultural land to the north-east, a residential neighbourhood to the south and by Grammar School Lane to the west.

3.3 As detailed in Section 1.0, the site is located on part of the BRIH-2 allocation site, which is allocated for residential development in NLC's Housing and Employment Land Allocations DPD. A plan showing the site location relative to the surrounding highway network and in the context of the allocation sites is attached at **Appendix BGH1**.

The Existing Highway Network

3.4 Grammar School Lane is a single carriageway road which runs broadly north to south, adjacent to the western site boundary. An access track known as Brickyard Lane forms an access with Grammar School Lane at the western site boundary, and provides existing access to the site. A Public Right of Way (PRoW) known as BRIG284 runs via Brickyard Lane along the western and northern site boundary, crossing the existing site access. The route becomes WRAW284 and WRAW293 as Brickyard Lane continues through to the A18 to the south-east of the site.

3.5 Immediately to the north of the Brickyard Lane access, the speed limit on Grammar School Lane changes from 20mph to 30mph, as Grammar School Lane passes between the allocated sites with BRIH-2 to the east and BRIH-5 to the west and crosses the M180 Motorway. Along the application site frontage, Grammar School Lane has a carriageway width in the order of 6.1 metres and is bordered on both sides by grass verges which vary in width and are overgrown. Street lighting is in place on the western side of the carriageway.

3.6 Around 100 metres to the north of the Brickyard Lane junction, Grammar School Lane bridges the M180 motorway and provides access to some residential dwellings and a farm on the northern side of the M180, with no through route for traffic provided beyond this point.

3.7 To the south of the application site boundary, footways in the order of 1.8 to 2.0 metres wide are in place adjacent to both sides of Grammar School Lane, however, at present there are no footways on Grammar School Lane as it passes between the BRIH-2 and BRIH-5 allocation sites.

3.8 Around 180 metres to the south of the application site boundary, Grammar School Lane meets Springbank by way of a priority junction. Springbank provides access to the existing residential area, located to the east of Grammar School Lane and to the south of the application site. To the south of the Springbank junction, Grammar School Lane becomes Grammar School Road forming a number of junctions with minor residential accesses, before it becomes Wesley Road after a distance of around 550 metres. A further 90 metres to the south, Wesley Road meets the A18 and Old Courts Road by way of a signalised junction. Around 40 metres to the north of the junction, when travelling northbound, the speed limit on Wesley Road reduces from 30mph to 20mph.

3.9 Old Courts Road forms the southern arm of the junction and provides access to the Old Courts Road Car Park, where pay and display parking for the town centre is available. The A18 forms the main arterial route through the centre of Brigg and in the vicinity of the signalised junction, it is known as the A18 Barnard Avenue.

3.10 To the west of the Wesley Road/Old Courts Road/A18 signalised junction, the A18 Barnard Avenue continues west for approximately 100 metres before forming the eastern and western arms of the Ash Grove/Cary Lane/A18 signalised crossroads junction. Cary Lane forms the southern arm of the junction, and provides access to parking areas in Brigg town centre. Ash Grove forms the northern arm and continues north into residential areas in the northern extents of Brigg. The A18 Barnard Avenue widens into two lanes on approach to the junction from the east and west, providing dedicated right turn lanes.

3.11 Around 180 metres to the west of the Ash Grove/Cary Lane/A18 signalised junction, the A18 Barnard Avenue forms the eastern arm of the A18 Barnard Avenue/A18 Ancholme Way/Atherton Way 3 arm roundabout. Atherton Way is a single carriageway road and continues to the north-west of the roundabout, providing access into residential, retail and industrial/employment areas including Ancholme Business Park. Atherton Way terminates around 850 metres to the north of the A18 roundabout in the vicinity of the BRIH1 and BRIH-5 allocation sites, where it provides access to Brigg Primary School and The Vale Academy (secondary school).

3.12 Returning to the Atherton Way/A18 roundabout, the A18 Ancholme Way continues to the south before turning west, providing access to residential, retail, leisure and

industrial/employment areas in the western extents of Brigg, via junctions with minor roads such as Bridge Street, Mill Lane, Island Carr Road and Waters Edge, to the west of which the A18 becomes Scawby Road.

3.13 Around 1.3 kilometres to the south-west of the Atherton Way/A18 roundabout, the A18 Scawby Road meets the B1206 Scawby Road at a mini roundabout junction. The B1206 Scawby Road continues to the south-west of the mini-roundabout towards the villages of Scawby and Hibaldstow. The A18 forms the northern arm of the mini roundabout and provides a route towards Junction 4 of the M180 Motorway, some 3 kilometres to the west of the mini roundabout, and en route towards Scunthorpe.

3.14 Returning to the Wesley Road/Old Courts Road/A18 signalised junction, the A18 Barnard Avenue continues south-east for approximately 370 metres before becoming the A18 Wrawby Street, on approach to the A18 Wrawby Road/A1084 Bigby Road/Bigby Road/A18 Wrawby Street 4-arm roundabout, which is also known as 'Monument Roundabout'.

3.15 To the south-east of the Monument Roundabout, the A1084 Bigby Road provides access to residential areas in south-east Brigg, before continuing east through rural areas of North Lincolnshire, providing access to villages such as Bigby and Grasby and on towards the town of Caistor. The unclassified Bigby Road forms the south-western arm of the roundabout and provides a route into Brigg town centre, which essentially commences adjacent to the Monument Roundabout, and of which a large portion is pedestrianised.

3.16 The A18 Wrawby Road forms the north-eastern arm of the Monument Roundabout, providing access into the residential areas in the eastern extents of Brigg. There is a segregated footway/cycleway on the north-western side of the carriageway and a footway on the south-eastern side. Approximately 800 metres to the north-east of the Monument Roundabout, the A18 Wrawby Road forms a priority junction with Churchill Avenue, with the latter forming the minor arm. This junction incorporates a right turn ghost island and advisory cycle lanes located on the outside of the junction. Two crossing points are provided on the A18 to either side of the junction, to facilitate cycle access between Churchill Avenue and the footway/cycleway provision on the north-western side of the A18 Wrawby Road.

3.17 Churchill Avenue is a residential access road which provides access into the residential areas in the eastern extents of Brigg. Around 200 metres to the north-east of the junction with Churchill Avenue, is the intended location of the ghost

island right turn lane priority junction proposed as part of the full planning application number PA/2023/1236, by Bellway Homes (Yorkshire).

3.18 The A18 Wrawby Road provides access to residential connector streets and farm accesses in the vicinity of the local plan allocation sites. The speed limit changes from 30mph to 40mph approximately 70 metres to the north-east of the Churchill Avenue junction, where the footway on the south-eastern side of the carriageway terminates. Around 450 metres to the north-east of the Bellway Homes (Yorkshire) proposed site access, Brickyard Lane emerges onto the A18 Wrawby Road on its north-western side, by way of a vehicular dropped crossing over the shared footway/cycleway.

3.19 Approximately 250 metres to the north-east of the Brickyard Lane access, the A18 Wrawby Road provides access to the village of Wrawby, where the speed limit again reduces to 30mph, as it passes residential properties that have direct frontage access onto the A18. The footway/cycleway provision on the north-western side of the A18 carriageway continues towards Wrawby, with the cycle provision terminating at the junction with the B1206 Barton Road approximately 500 metres to the north-east of the site, from where cyclists continue along the carriageway. The footway provision continues into Wrawby, along with a footway on the south-eastern side of the carriageway which commences just before the B1206 Barton Road junction.

Traffic Surveys

3.20 In order to determine the peak hour usage of the local highway network, traffic surveys were undertaken as part of the TA prepared for the Bellway Homes (Yorkshire) planning applications. The same data has therefore been utilised in this TA for consistency.

3.21 The surveys were undertaken on Wednesday 11th May 2022 between the hours of 7:00am – 10:00am and 4:00pm - 7:00pm. These time periods were chosen to ensure that the weekday morning and evening peak hours were fully captured for consideration within this TA. The surveys recorded fully classified turning counts in 15-minute intervals at the following locations:

1. Churchill Avenue / A18 Priority T-Junction
2. A18 / A18 Wrawby Road / A1084 Bigby Road / Bigby Road Roundabout (Monument Roundabout)
3. Wesley Road / Old Courts Road / A18 Signalised Crossroads
4. Cary Lane / Ash Grove / A18 Signalised Crossroads
5. Atherton Way / A18 Roundabout
6. B1206 Scawby Road / A18 Mini-Roundabout

3.22 It has been identified that the weekday morning peak hour occurred between 08:00am and 09:00am and the weekday evening peak hour occurred between 4:30pm and 5:30pm. Traffic flow diagrams showing the 2022 existing peak hour traffic flows on the local highway network are attached at **Appendix BGH2**.

Scope of Assessment

3.23 Good practice guidance on TA's is set out within the DfT's 'Guidance on Transport Assessment'. Whilst this has been withdrawn, it is still a valid reference document. It states that the threshold for assessing the operation of a junction within a TA is if the proposed development is predicted to generate 30 or more additional two-way trips in an hour through the junction.

3.24 The trip generation for the proposed development is detailed in Section 6.0. The result of this is that the proposed development will only generate 30 or more two-way trips at the proposed site access junction with Grammar School Lane, the Wesley Road / Old Courts Road / A18 Signalised Crossroads and the Cary Lane / Ash Grove / A18 Signalised Crossroads. Therefore, these junctions have been assessed as part of this TA. Whilst the proposed development is predicted to generate only 29 additional two-way trips through the Atherton Way / A18 Roundabout during both the weekday morning and evening peak hours, this is very close to triggering the 30 two-way trip threshold and so this junction has also been assessed to provide a robust approach.

3.25 At all the other surveyed junctions listed at paragraph 3.21, the proposed development is predicted to generate less than 30 two-way trips through the junctions during both the weekday morning and evening peak hours. Therefore the impact on those junctions, as a result of this development will be minimal and so has not been assessed in this TA.

2022 Existing Operational Assessment

Wesley Road/Old Courts Road/A18 junction

3.26 The existing operation of the Wesley Road/Old Courts Road/A18 signalised junction has been assessed using the JCT industry standard software package, LinSig, and based on the signal specification which has been obtained from NLC.

3.27 As the Wesley Road/Old Courts Road/A18 signalised junction and the Ash Grove/Cary Lane/A18 signalised junction are relatively close together, at approximately 100 metres apart between stop lines, a single LinSig model has been set up which includes both junctions. The model results for the Ash Grove/Cary Lane/A18 signalised junction are provided separately within this report.

3.28 Based on the NLC signal specification, a cycle time of 120 seconds has been applied to the Wesley Road/Old Courts Road/A18 signalised junction model. The nature of the signalised pedestrian crossing facilities at the junction on both A18 arms are such that pedestrians can cross in two stages using a refuge island, therefore each pedestrian crossing phase runs within a typical cycle as a walk with traffic green facility and does not require an "all red" for vehicle movements.

3.29 The results of the modelling are summarised in Table 3.3 and the full model outputs are attached at **Appendix BGH3**.

3.30 The Degree of Saturation (DoS) results are provided for the junction. The DoS represents the ratio of flow to capacity for a particular approach to a junction. A DoS of 90% is generally recognised as an acceptable DoS in order for a junction to be avoiding significant operational issues on any approach, with a DoS of 100% representing the maximum practical capacity of an approach. The Practical Reserve Capacity (PRC) is calculated from the maximum degree of saturation and is a measure of how much additional traffic could pass through a junction, whilst maintaining a DoS of 90% on all lanes. Therefore, a high PRC suggests that the junction is operating well within capacity. The Mean Maximum Queue (MMQ) is also presented in PCU format.

Table 3.3 – 2022 Existing Operational Assessment
Wesley Road/Old Courts Road/A18 Signalised Junction

Arm	2022 Existing AM Peak Hour		2022 Existing PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Wesley Road	68.1%	4	63.0%	3
A18 East	78.3%	16	81.8%	19
Old Courts Road	20.3%	1	79.1%	6
A18 West	77.4%	15	83.1%	17
PRC	14.9%		8.3%	

3.31 Table 3.3 shows that the Wesley Road/Old Courts Road/A18 signalised junction currently operates with a maximum DoS of 83.1% on the A18 West approach, during the evening peak hour. The maximum MMQ value of 19 PCUs occurs on the A18 East approach during the evening peak hour. The modelling therefore shows

that the Wesley Road/Old Courts Road/A18 signalised junction is currently operating within capacity.

Ash Grove/Cary Lane/A18 junction

3.32 The existing operation of the Ash Grove/Cary Lane/A18 signalised junction has been assessed using the JCT industry standard software package, LinSig, and based on the signal specification which has been obtained from NLC.

3.33 As set out above, the Wesley Road/Old Courts Road/A18 signalised junction and the Ash Grove/Cary Lane/A18 signalised junction have been combined into a single LinSig model. The modelling results for the Wesley Road/Old Courts Road/A18 signalised junction are provided separately above.

3.34 There are signalised pedestrian crossings on all arms of the Ash Grove/Cary Lane/A18 signalised junction. The NLC signal specification shows that the pedestrian crossing phases run all together during the same stage, which requires an “all red" for traffic. In reality, it is not likely that the pedestrian crossings are called every cycle. Therefore, for the purpose of the model, it has been assumed that the pedestrian crossing points are called every other cycle. The NLC signal specification refers to a cycle time of 120 seconds. The overall cycle time applied in the LinSig model is 240 seconds, which allows the model to run through the main stage sequence twice, in order to model the pedestrian crossings running every other cycle.

3.35 The results of the modelling are summarised in Table 3.4 and the full model outputs are attached at **Appendix BGH3**.

Table 3.4 – 2022 Existing Operational Assessment
Ash Grove/Cary Lane/A18 Signalised Junction

Arm	2022 Existing AM Peak Hour		2022 Existing PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Ash Grove	38.4%	2	15.0%	1
A18 East	56.1%	17	60.9%	20
Cary Lane	24.6%	1	63.9%	4
A18 West	61.7%	20	67.8%	22
PRC	45.9%		32.7%	

3.36 It can be seen from Table 3.4 that the Ash Grove/Cary Lane/A18 signalised junction currently operates with a maximum DoS of 67.8% on the A18 West approach, during the evening peak hour. The maximum MMQ value of 22 PCUs also occurs on the A18 West approach during the evening peak hour. The modelling therefore shows that the junction is currently operating within capacity.

Atherton Way/A18 Roundabout

3.37 The existing operation of the Atherton Way/A18 roundabout has been assessed using the ARCADY element of the TRL industry standard modelling software package, Junctions 9. The results of the modelling are summarised in Table 3.5 and the full model outputs are attached at **Appendix BGH3**.

3.38 The Ratio of Flow to Capacity (RFC) results are provided for the junction. At existing junctions in urban areas, an RFC value of 1.00 is generally used to identify a junction operating within its practical capacity. The maximum queues are presented in Passenger Car Unit (PCU) format, with a PCU length equating to around 5.75 metres.

Table 3.5 – 2022 Existing Operational Assessment
Atherton Way/A18 Roundabout

Arm	2022 Existing AM Peak Hour		2022 Existing PM Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
A18 Barnard Avenue	0.57	1	0.66	2
A18 Ancholme Way	0.72	3	0.66	2
Atherton Way	0.35	1	0.34	1

3.39 Table 3.5 shows that the Atherton Way/A18 roundabout currently operates with a maximum RFC of 0.72, occurring on the A18 Ancholme Way approach during the morning peak hour, with a maximum queue of 3 PCUs. It is therefore clear from the model results that the junction is currently operating within capacity.

Personal Injury Collisions

3.40 The record of personal injury collisions (PICs) that have occurred on the local highway network has been requested from NLC. The usual approach would be to consider PICs for the most recent 5 year period available, however, given that this period includes the COVID-19 pandemic, it was agreed with NLC as part of the Bellway Homes (Yorkshire) applications that PIC data for the most recent 6.5 year

period available at the time of the request should be considered. This takes into account any impact that reduced traffic flows during the pandemic might have had on the number of PICs which occurred within the study area.

3.41 The data provided by NLC for the Bellway applications is for the 81 month period from 1st January 2016 to 29th September 2022 and is attached at **Appendix BGH4.** Further data has been requested which covers the 13 month period from 29th September 2022 to 25th October 2023, which is also attached at **Appendix BGH4**.

3.42 The study area covers all of the surveyed junctions and the road links in between. The data shows that during the total 94 month period, there have been a total of 44 PICs within the study area, 36 of which have been classified as slight in severity with 8 classed as serious.

Grammar School Road and Grammar School Lane

3.43 The PIC data shows that 1 slight PIC occurred on Grammar School Road at the junction with Preston Drive. The slight PIC involved a car egressing Preston Drive and a cyclist travelling south on Grammar School Road.

3.44 No other PICs occurred along Grammar School Road or Grammar School Lane during the study period, including none in the vicinity of the proposed site access junction, details of which are provided in Section 5.0 of this report.

Wesley Road/Old Courts Road/A18 Signalised Crossroads

3.45 The PIC data shows that 1 PIC has been recorded at the Wesley Road/Old Courts Road/A18 junction. The PIC was classed as slight in severity and involved a car and a pedestrian colliding at the signalised crossing.

A18 Barnard Avenue (between signal junctions)

3.46 The PIC data shows that 1 PIC has been recorded along the A18 Barnard Avenue, between the Wesley Road/Old Courts Road/A18 crossroads and the Ash Grove/Cary Lane/A18 crossroads. The PIC was classed as serious and involved a rear end shunt between two vehicles travelling west towards the Ash Grove/Cary Lane/A18 junction.

Ash Grove/Cary Lane/A18 Signalised Crossroads

3.47 The PIC data shows that 1 PIC has been recorded at the Ash Grove/Cary Lane/A18 crossroads, which has been classed as slight in severity and involved a rear end shunt between three cars.

Tesco Access/A18

3.48 The PIC data shows that 1 PIC has been recorded at the Tesco access junction with the A18, which has been classed as slight in severity and involved a car turning right out of Tesco and a pedestrian crossing the A18.

Atherton Way/A18 roundabout

3.49 4 PICs have been recorded at the Atherton Way/A18 roundabout, 2 of which have been classed as serious and 2 classed as slight in severity. The first serious PIC involved a collision between a van and a cyclist in the vicinity of the Atherton Way arm of the roundabout. The second serious PIC involved two cars that were both turning left from A18 Ancholme Way onto Atherton Way. The first slight PIC involved a collision between a car and a cyclist leaving the junction travelling east along the A18 Barnard Avenue. Second slight PIC involved a single vehicle losing control. The 4 PICs occurred in different locations at the roundabout.

Atherton Way

3.50 The PIC data shows that 3 PICs have been recorded along Atherton Way, all of which have been classed as slight in severity and all of which occurred in different locations along the road. 2 of the slight PICs involved pedestrians, the first of which involved an LGV egressing from an industrial access colliding with a pedestrian crossing the access junction along Atherton Way. The second slight PIC involving a pedestrian occurred approximately 60 metres to the south-west of the Brigg Primary School entrance, and involved a car colliding with a pedestrian that was crossing between parked cars.

A18 Ancholme Way/A18 Bridge Street

3.51 Between the Atherton Way/A18 roundabout and the Island Carr Road/Aldi Access/A18 Mini Roundabout, 12 PICs have been recorded, 11 of which have been classed as slight with 1 classed as serious. The serious PIC occurred in the vicinity of the Mill Lane/A18 priority T-junction and involved a rear end shunt between two vans and a car heading east towards Brigg.

3.52 4 other slight PICs also occurred at the Mill Lane/A18 junction during the study period. One involved a collision between a goods vehicle turning out of Mill Lane and two cars on the A18, and one involved a collision between a car turning right out of Mill Lane and a westbound car on the A18. Another involved a rear end shunt between 2 vehicles heading east towards Brigg, and the final slight PIC involved a collision between a van egressing Mill Lane and a motorcycle travelling along the A18. Whilst 2 PICs at the Mill Lane/A18 junction were rear end shunts and there were 5 PICs in total at the junction during the study period, it is deemed that 5 PICs

over a 7.5 to 8 year period does not indicate that there are any fundamental road safety issues at the junction.

3.53 The remaining slight PICs recorded on this stretch of the A18 Ancholme Way/A18 Bridge Street varied in nature and included 2 rear end shunts in different locations along the route, a single vehicle losing control, a collision between a vehicle egressing from Forrester Street and a cyclist travelling west on the A18, a PIC involving a pedestrian and 2 cars to the north of the Bridge Street/A18 junction, a collision between two cars in the vicinity of the West Terrace junction and a collision involving a cyclist and a car turning into a petrol filling station.

A18 Scawby Road

3.54 On the A18 Scawby Road between the Island Carr Road mini roundabout and the B1206 Scawby Road/A18 mini roundabout, there have been 8 PICs recorded, 6 of which have been classed as slight with 2 PICs classed as serious.

3.55 The first serious PIC involved a car and a cyclist that were both travelling east towards Brigg , around 50 metres to the south-west of the access to DFS Brigg. The second serious PIC involved a collision between two cars at the Island Carr Road mini roundabout.

3.56 4 of the 6 slight PICs involved cyclists, however these generally occurred in different locations on the A18. 1 of the PICs involving a cyclist occurred between a car egressing Waters Edge and a cyclist travelling east along the A18 Scawby Road. 2 PICs involved a car overtaking a cyclist along the A18 Scawby Road in the vicinity of the DFS Brigg access. A further slight PIC involving a cyclist also involved two cars in a rear end shunt, around 80 metres to the north-east of the B1206 Scawby Road/A18 mini roundabout. The final 2 slight PICs recorded along this stretch of road was one rear end shunt between two cars in the vicinity of the bridge over the River Ancholme, and a collision between a motorcycle and a car at the Waters Edge junction.

3.57 Whilst 2 slight PICs involving a car overtaking a cyclist occurred in a similar location, it is deemed that 2 PICs in a similar location over a 7.5 to 8 year period does not indicate that there are any fundamental road safety issues in this location.

B1206 Scawby Road/A18 Mini Roundabout

3.58 The PIC data shows that 2 slight PICs have been recorded at the B1206 Scawby Road/A18 mini roundabout. 1 of the slight PICs involved a motorcycle turning right from A18 Scawby Road onto the A18 north arm and a car travelling from west to east across the roundabout. The second slight PIC involved a single vehicle losing control.

A18 Barnard Avenue (east of Wesley Road signal junction)

3.59 On the A18 Barnard Avenue between Monument Roundabout and the Wesley Road/Old Courts Road/A18 crossroads, 3 slight PICs have been recorded. All of these slight PICs were different in nature and location. One of the slight PICs involved a cyclist and a vehicle that was undertaking a U-turn.

Monument Roundabout

3.60 2 PICs have been recorded at the Monument Roundabout, one of which has been classed as slight in severity with the other classed as serious. The serious PIC involved an LGV travelling onto Monument Roundabout from the north-west colliding with a pedestrian crossing the road.

A1084 Bigby Road

3.61 The PIC data shows that a slight PIC occurred on the A1084 Bigby Road around 60 metres to the south-east of the Monument Roundabout, at the junction with St Helen's Road.

A18 Wrawby Road - Between Churchill Avenue Junction and Monument Roundabout

3.62 3 PICs have been recorded on the 800 metre stretch of the A18 Wrawby Road between the Churchill Avenue junction and Monument Roundabout, all of which have been classed as slight in severity. One of these slight PICs involved a car travelling south-west along the A18 colliding with a pedestrian, approximately 160 metres to the north-east of the Monument Roundabout.

Churchill Avenue/A18 Wrawby Road

3.63 The PIC data provided by NLC shows that 1 serious PIC has been recorded at the Churchill Avenue/A18 Wrawby Road junction. The PIC involved a collision between a car egressing Churchill Avenue and a motorcycle travelling south-west on the A18.

Summary

3.64 The above analysis indicates that in the 94 month period considered, 44 recorded PICs have occurred on the road network in the vicinity of the site, equating to less than 6 PICs per year. Following a review of the PIC data for the highway network considered within the scope of the TA, it is concluded that the highway network is operating satisfactorily at present with no significant PIC trends identified. The analysis has not revealed any existing road safety issues which would be exacerbated by the proposed development traffic.

4.0 ACCESS BY SUSTAINABLE TRANSPORT

4.1 National and local transport policies seek to reduce the need to travel and to promote travel by means other than the private car. A review of the accessibility of the site by walking, cycling and using public transport has therefore been undertaken as follows.

Walking

4.2 With regard to pedestrian provision at new developments, guidance is set out within the CIHT document 'Planning for Walking' (March 2015) and describes how approximately 80% of all journeys, shorter than 1 mile (1.6 kilometres), are made wholly on foot. If destinations are within a convenient walking distance, people are more likely to walk if it is safe, comfortable, and the surrounding environment is attractive. Walking is also regarded as an essential part of public transport travel, as bus stops are usually accessed on foot.

4.3 Further guidance within the earlier CIHT Publication 'Guidelines for Providing for Journeys on Foot' (2000) sets out the suggested acceptable walking distances for pedestrians without any mobility impairment. The recommended desirable, acceptable and preferred maximum walking distances for commuting/school and other journeys, such as retail/shopping, are shown in Table 4.1.

Table 4.1: Recommended Walking Distances

	Trip Purpose	
	Commuting/School	**Other Journeys (Retail/Shopping)**
Desirable	500 metres	400 metres
Acceptable	1,000 metres	800 metres
Preferred Maximum	2,000 metres	1,200 metres

4.4 Table 4.1 shows that the preferred maximum walking distance for 'commuting / school' journeys is 2,000 metres and the preferred maximum walking distance for other journeys is 1,200 metres. Walking catchment plans have been prepared for the proposed development. The plan illustrates the destinations accessible within a maximum 2,000 metres walking distance from the centre of the site, in 400 metre

intervals. The walking catchment plan have been prepared using the TRACC accessibility software and are attached at **Appendix BGH5.**

4.5 Whilst the walking catchment plan does not account for the future extension of the link road through to the A18 Wrawby Road to the south-east, it does account for the use of the existing Public Right of Way routes BRIG284, WRAW284 and WRAW293 along Brickyard Lane, which provides a similar route between Grammar School Lane and the A18 Wrawby Road for pedestrians.

4.6 The plan shows that the majority of Brigg is accessible within a 2,000-metre walking distance, including the Town Centre. Future residents of the proposed development will be able to conveniently walk to several local services and destinations within the preferred maximum walking distance for journeys (including retail/shopping) of 1,200 metres, as summarised at Table 4.2.

Table 4.2: Local Facilities within 1,200 metres Walking Distance

Key Local Facility	Walking Distance (from centre of site)
St Mary's Catholic Primary School	400 metres
Woodbine Park Play Area	600 metres
The Vale Academy (Secondary School)	600 metres
The Garden Fish and Chip Takeaway	600 metres
One-Stop Convenience Store	700 metres
Brigg Primary School	850 metres
Brigg Recreation Ground (including football, tennis and hockey clubs)	950 metres
Sir John Nelthorpe School	1,000 metres

4.7 As summarised at Table 4.2, there are a number of schools located within the 1,000 metre acceptable maximum walking distance for commuting/school journeys.

4.8 Further key facilities in Brigg town centre, which are accessible within a maximum 2,000 metre walk from the centre of the site, include Lidl and Tesco Superstores, a B&M Bargains Store, Bigby Street Dental Practice, Riverside Doctor's Surgery and

Pharmacy, a library, a Post Office, banks and multiple public houses and restaurants, along with numerous other town centre and retail facilities. The town centre can be accessed on foot from the application site via the existing footways along Grammar School Lane, Grammar School Road and Wesley Road and the pedestrian crossing facilities at the Wesley Road / Old Courts Road / A18 Signalised junction.

Cycling

4.9 Guidance in the Department for Transport's (DfT) 'Cycling and Walking Investment Strategy' (April 2017) and 'Cycle Infrastructure Design' (LTN 1/20 – July 2020) sets out that two out of every three personal trips are within 5 miles (8 kilometres), which is an achievable distance to cycle for most people.

4.10 It is also generally accepted that the bike is an ideal mode of transport for journeys under 8 kilometres and that cycling has clear potential to substitute for short car trips, particularly those under 5 kilometres, and to form part of a longer journey by public transport.

4.11 A 5 and 8 kilometre cycling catchment plan has been prepared using the TRACC accessibility software and is included at **Appendix BGH6**. This shows that the entirety of Brigg and the village of Wrawby are accessible within a maximum 5 kilometre cycle distance, providing a large variety of facilities and employment opportunities, as described earlier. Barnetby le Wold, Elsham, Worlaby, Broughton, Scawby, Hibaldstow and other surrounding villages are also accessible within an 8 kilometre cycle distance.

4.12 Approximately 1.2 kilometres to the south-west of the proposed development site, there is the Ancholme Valley Way which is a multi user path along the River Ancholme from Brigg, that links to the National Byway cycle route to the north. The National Byway is a sign posted leisure cycling route which runs along quiet roads rather than roads and tracks, like the National Cycle Network. Locally the National Byway runs through Birdhouse Clough, Scabcroft and Winterton.

4.13 As part of the development access for cyclists through the site will be provided by way of a 3.0 metre wide shared use footway/cycleway provided along the access road, that will ultimately link through the adjacent sites to the A18 Wrawby Road and Atherton Way.

Public Transport

Bus

4.14 With regard to public transport provision at new developments, the CIHT publication "Buses in Urban Developments" (January 2018) refers to a maximum walking distance to bus stops of 400 metres, this is a historic recommended distance which has been applied for many years. The aforementioned "Planning for Walking" also states that 400 metres has traditionally been regarded as a cut off point for walking distance to bus stops.

4.15 "Buses in Urban Developments" recognises that the acceptability of the walking distance is not the only consideration when people are planning a bus journey. There are a number of other factors to consider, for example, people consider the overall journey time including the time spent on the bus, so people will accept longer walks to reach bus services that are fast, direct, frequent and serve a wider range of destinations.

4.16 The closest bus stop to the site is located on Springbank, approximately 500 metres walking distance from the centre of the site to the south. This bus stop is served by the number 91 bus service.

4.17 There are also bus stops located on Cary Lane in the centre of Brigg adjacent to the Tesco superstore and on the A18 outside The White Horse pub, both approximately 1.2 kilometres walking distance from the centre of the site. These stops can be accessed within a 15 minute walk or an approximate 5 minute cycle ride. The bus stops on Cary Lane and at The White Horse pub provide a greater range of frequent services.

4.18 Table 4.3 summarises the bus services available from these stops.

Table 4.3: Summary of Existing Bus Services

Route Number	Route Description	Frequency		
		Monday to Friday	Saturday	Sunday
South View Avenue				
91	Brigg Cary Lane – Ancholme – Highfield Grove	Tuesdays and Thursdays - 6 services per day (Approx. hourly)	5 services per day	-
Cary Lane & White Horse				
4	Kirmington – Barnetby le Wold – Wrawby – Brigg	Hourly (daytime)	Hourly (daytime)	-
91	Brigg Cary Lane – Ancholme – Highfield Grove	Tuesdays and Thursdays - 6 services per day (Approx. hourly)	5 services per day	-
92	Brigg – Churchill Avenue	Tuesdays and Thursdays - 5 services per day	Tuesdays and Thursdays - 5 services a day	-
93	Brigg - Howsham	Tuesdays and Thursdays - 3 services per day	Tuesdays and Thursdays - 3 services per day	-
96	Brigg – Barton-upon-Humber	5 services per day	-	-
Cary Lane Only				
94	Brigg – Kirton In Lindsay	4 services per day	-	-

4.19 Table 4.3 shows that the number 4 bus provides a regular hourly service from the bus stops on Cary Lane. The numbers 91, 92, 93, 94 and 96 bus services provide supplementary local services on certain days of the week, which are most suited to local shopping trips. The number 91 is the Brigg Town Service, which stops outside the major supermarkets in Brigg.

4.20 The available bus services provide access to neighbouring villages, such as Wrawby, Barnetby le Wold, Broughton and Kirmington. A regular service is also available to and from Scunthorpe, where a multitude of retail, leisure and employment facilities are available. It is therefore considered that bus travel will be a feasible travel mode for future residents of the site.

4.21 This section of the TA describes the existing bus provision in the vicinity of the site, but it should also be noted that the Brigg Link Road will be designed to a standard that is able to accommodate buses.

JustGo and CallConnect Services

4.22 The rural nature of the areas surrounding Brigg can make the provision of regular bus routes challenging to implement. Because of this, demand responsive services have been introduced, including the North Lincolnshire specific 'JustGo' service and the LincsBus service known as 'CallConnect'. Both of these on-demand bus services operate six days a week, with the LincsBus 'CallConnect' service extending to serve the Brigg region. Services can be requested and pre-booked via the intuitive mobile apps and provide a flexible way of travelling, which supplements the standard bus routes detailed above.

Rail

4.23 The closest railway station to the site is Brigg railway station, located 1.4 kilometres to the south of the site. This station provides services to local, regional, and national destinations. The station is served by a limited service to Cleethorpes and Sheffield.

4.24 The station has a ticket office and step free access to both platforms. Brigg railway station will provide a good link for future residents of the proposed development site.

Public Transport Catchment Plans

4.25 Public transport catchment plans which show the areas that are accessible within a 60 minute journey of the site using public transport have been prepared using the TRACC accessibility software. The catchment plans for the morning and evening peak periods are attached at **Appendix BGH7**. The plans show that from the centre of the site, residents can reach Broughton within 20 to 30 minutes and the south-eastern extents of Scunthorpe within 40 to 60 minutes.

Summary

4.26 This section has shown that there are numerous opportunities for sustainable travel to and from the proposed development site. It is considered that the site is well located to promote trips on foot and by cycle to local amenities within Brigg itself and further afield. There are also options for future residents to travel by public transport given the proximity of bus stops and associated services.

5.0 DEVELOPMENT PROPOSALS

5.1 The application proposals comprise new residential development on land located to the east of Grammar School Lane, Brigg. The proposal is for 112 dwellings, to be accessed via a new priority crossroads junction with Grammar School Lane at the western site boundary. The proposed site layout plan is attached at **Appendix BGH8**.

5.2 It has been a longstanding aim of North Lincolnshire Council to deliver a link road around the north-eastern extents of Brigg, linking the A18 with Atherton Way. The route of the prospective link road runs through the sites which have been allocated for residential development, in the North Lincolnshire Local Plan. There are five sites which are known as BRIH-1, BRIH-2, BRIH-3, BRIH-4 and BRIH-5. The application site is located on part of site BRIH-2, as shown on the location plan at **Appendix BGH1**.

5.3 The separate planning applications by Bellway Homes (Yorkshire) include a full planning application on around 75% of the land which forms the BRIH-3 and BRIH-4 allocation sites. Further to this, the Bellway Homes (Yorkshire) outline application site incorporates the remainder of the BRIH-3 allocation site and the whole of the BRIH-2 allocation site. The proposed Gleeson Regeneration development site therefore forms part of the wider site which is the subject of the Bellway Homes (Yorkshire) outline planning application.

Proposed Vehicular Access

5.4 Vehicular access to the application site will be by way of a new priority crossroads junction with Grammar School Lane at the western site boundary, as illustrated on the proposed site access drawing at **Appendix BGH9**. The implementation of this junction arrangement will see a change in priority along Grammar School Lane, with the future east/west link road that will provide access into the Gleesons site to the east forming the major arm of the junction. Grammar School Lane will form the minor arms to the north and south. The existing Brickyard Lane junction with Grammar School Lane will be closed.

5.5 It is noted that in order to deliver the proposed crossroads arrangement, land to the west of the adopted highway boundary on Grammar School Lane will be required to form the initial section of a future through route to the west. It is understood that this land is Council owned, and it has been confirmed that an agreement between NLC and Gleesons has been reached to utilise this land to form the proposed crossroads arrangement, as part of the Gleeson development

proposals. The proposed site access drawing at **Appendix BGH9** shows that the proposed crossroads can be delivered within land which lies either within the application site boundary, the adopted highway boundary or land under Council ownership.

5.6 The proposed site access road and the main spine road through the site will have a carriageway width of 6.75 metres, with a 2 metre wide footway on the southern side and a 2 metre wide verge and 3 metre wide shared footway/cycleway on the northern side. Where the footway/cycleway crosses any future residential side roads, priority will be maintained for pedestrians and cyclists. The main spine road through the proposed development will form part of the future link road and, as such, it accords with the dimensions of the main spine road through the Bellway Homes (Yorkshire) application sites, which have been agreed with officers of NLC as suitable for the future link road, as part of the pre application discussions in relation to the Bellway applications.

5.7 The NLC Residential Roads Design Guide sets out that a carriageway width of 6.75 metres is suitable for a Secondary Distributor type road, and this is considered to be the most suitable classification for the link road. The NLC guidance indicates that Secondary Distributor roads generally form the route between residential sites and the wider highway network, and that large sites may have direct access to Secondary Distributor roads.

5.8 As described in Section 2.0, LTP have prepared a 'Brigg Link Road Highways Masterplan' report on behalf of NLC, dated September 2021, as part of the evidence base for the emerging Local Plan, which considered access to the residential allocation. The LTP report considers delivery of the link road, to facilitate future residential development identified in the Housing and Employment Land Allocations Development Plan Document.

5.9 In paragraph 3.1.3, the LTP report sets out that, in advance of the delivery of the link road, it would be reasonable to introduce 60 additional two-way trips back onto Grammar School Lane during the morning peak hour. This is because a similar number of trips were diverted away from Grammar School Lane, when access to The Vale Academy was relocated from Grammar School Lane to Atherton Way. The LTP report states that this would equate to 115 dwellings, which is the threshold identified for development served off Grammar School Lane, without the full construction of the link road through to either Atherton Way or the A18 Wrawby Road. The proposed development of 112 dwellings is therefore within the threshold for development served off Grammar School Lane only, identified by LTP on behalf of their work for NLC.

5.10 The proposed site access junction is in the location of the existing 20mph/30mph speed limit change on Grammar School Lane. Therefore the relocation of the speed limit change to either the south or north of the proposed site access junction is supported, and will be delivered by way of an amendment to the existing Traffic Regulation Order (TRO). The exact new location of the speed limit change is to be agreed with NLC as part of the TRO amendment process.

Visibility

5.11 The proposed site access drawing shows visibility splays for the anticipated speed limit of the link road of 30mph, from both Grammar School Lane arms of the junction. The proposed site access drawing at **Appendix BGH9** demonstrates that these visibility splays of 2.4 metres by 43 metres would be achievable from both Grammar School Lane arms of the junction, according to guidance in Manual for Streets.

Pedestrian and Cycle Access

5.12 As described in the previous paragraphs, the proposed site access road will have a 2 metre wide footway on the southern side and a 2 metre wide verge and 3 metre wide shared footway/cycleway on the northern side. A 3 metre wide priority footway/cycleway crossing point is envisaged across the northern arm of Grammar School Lane, in line with guidance in LTN 1/20, 'Cycle Infrastructure Design', as indicated on the proposed site access drawing.

5.13 The footway on the eastern side of Grammar School Lane to the south of the proposed site access commences around 35 metres to the south of the proposed site access point. It is not feasible to provide a link directly to this footway, due to the presence of a drainage ditch between the proposed site access and the start of the footway. Therefore, immediately to the south of the proposed site access, it is proposed to provide an uncontrolled pedestrian crossing point, with dropped kerbs and tactile paving. This will provide a link to the existing footway on the western side of Grammar School Lane. Some localised widening of the existing footway is proposed to accommodate the crossing point, up to the private drive access to the property known as Hollieberries.

Public Right of Way and Access to Brickyard Lane

5.14 The proposed site access drawing at **Appendix BGH9** shows that it is proposed to retain the PRoW known as BRIG284, which currently runs along Brickyard Lane, along its existing alignment. Vehicular access to Brickyard Lane will also be retained. The details of this arrangement are to be agreed with NLC.

Parking Provision

5.15 The proposed application site layout will accord with local guidelines in relation to parking provision, for both residents and visitors, as set out in the NLC Local Plan Saved Policy T19. Each dwelling will also be provided with an electric vehicle charging point within the curtilage of the property.

Servicing Access Swept Path Analysis

5.16 A swept path analysis has been undertaken for a refuse vehicle entering and exiting the site, and indeed within the site. Drawing number 23/256/ATR/002 attached at **Appendix BGH10** shows that a refuse vehicle can access and egress the site from Grammar School Lane, at the proposed site access priority crossroads.

5.17 Swept path analysis of the internal site layout including turning heads has been undertaken, as shown on drawing number 23/256/ATR/001 Rev A attached at **Appendix BGH11**. This demonstrates that the site can be serviced as necessary, with all turning heads capable of allowing a refuse vehicle to turn around with the site and thereby enter and exit the site in a forward gear.

6.0 TRIP GENERATION AND DISTRIBUTION

Trip Generation

6.1 The Trip Rate Information Computer System (TRICS) has been used to calculate the vehicular trip generation for the proposed residential development. Under the 'Houses Privately Owned' category, all sites excluding Ireland and Greater London have been interrogated to establish vehicular trip rates for the proposed development.

6.2 The trip rates have been applied to the proposed 112 dwellings to establish the weekday morning and evening peak hour development trips. The trip rates and trip generation are shown in Table 6.1, with the full TRICS output attached at **Appendix BGH12**.

Table 6.1 – TRICS Trip Rates and Trip Generation for 112 Dwellings

	Morning Peak Hour			Evening Peak Hour		
	In	Out	Two-Way	In	Out	Two-Way
TRICS Trip Rates	0.127	0.398	0.525	0.371	0.156	0.527
Trip Generation	14	45	59	42	17	59

6.3 It has also been assumed that 5% of the peak hour development generated vehicular trips would be HGV trips, in order to account for servicing and delivery vehicles accessing the sites.

Trip Distribution

6.4 The likely distribution of the traffic predicted to be generated by the proposed development has been determined using origin/destination 2011 Census Data for "Location of usual residence and place of work by method of travel to work (MSOA level)". The location of usual residence was set as "North Lincolnshire 011", the area in which the sites are situated, and the place of work was set to "All". The possible route choices have been determined based on the Google Maps route planning tool. The diagrams at **Appendix BGH13** show the trip distribution percentages for each of the two assessment scenarios, with the assigned development generated trips shown on the diagrams at **Appendix BGH14**.

6.5 For the main assessment scenario, the trip distribution reflects the proposed development being accessed via the proposed junction with Grammar School Lane.

Scope of Assessment

6.6 A threshold of 30 vehicles or more through a junction in either peak hour is set out within the Department for Transport's 'Guidance on Transport Assessment', to establish the need for operational assessment of a junction. Whilst this guidance has been withdrawn, it is still a valid reference document. It is concluded that this 30 two-way trip threshold (i.e. an average of an additional vehicle movement every 2 minutes) provides a helpful starting point for establishing the need for operational assessment of the impact of development generated trips.

6.7 Table 6.2 provides a summary of the number of additional trips which will be generated at on the local highway network in the vicinity of the site, at the six surveyed junctions listed in Section 3.0, based on the assigned development generated trips at **Appendix BGH14**.

Table 6.2 – Additional Two-Way Trip Generation at Junctions

Junction	Additional Two-Way Trip Generation	
	Weekday Morning Peak Hour	Weekday Evening Peak Hour
Wesley Road / Old Courts Road / A18 Signalised Crossroads	58	58
Cary Lane / Ash Grove / A18 Signalised Crossroads	31	32
Atherton Way / A18 Roundabout	29	30
B1206 Scawby Road / A18 Mini-Roundabout	26	26
Monument Roundabout	23	24
Churchill Avenue / A18 Priority T-Junction	21	22

6.8 It is clear from Table 6.2 that the proposed development will generate 30 or more two-way trips at the Wesley Road / Old Courts Road / A18 Signalised Crossroads, the Cary Lane / Ash Grove / A18 Signalised Crossroads and be very close to this threshold at the Atherton Way / A18 Roundabout. Therefore operational assessment of these three junctions has been undertaken in this TA. It is considered that the impact of additional trips generated by the proposed development of 112 dwellings at the other three surveyed junctions will be less than this threshold, and so these junctions have not been assessed.

7.0 BACKGROUND TRAFFIC GROWTH

Growth Factors

7.1 Historic good practice guidance on TA's set out within the DfT's 'Guidance on Transport Assessment' sets out that traffic flows should be projected to a future year 5 years post submission of the planning application. The 2022 weekday morning and evening peak hour surveyed traffic flows have therefore been projected to a future year of 2028, given the application submission year of 2023.

7.2 The traffic flows for the surveyed junctions have been projected by applying growth factors which have been determined using TEMPro (v7.2c), for the North Lincolnshire 011 MSOA. The Road Traffic Forecasts (RTF) adjusted growth rates are set out in Table 7.1.

Table 7.1 – TEMPro Adjusted Road Traffic Forecasts Growth Factors

	RTF Growth Factors	
	AM Peak Period	PM Peak Period
2022 – 2028 North Lincolnshire 011	1.0583	1.0582

7.3 The factors indicate a circa 5.8% growth in local background traffic between 2022 and 2028 and take account of planned increases in households and employment figures. It is likely that given the proposed development site is located on land allocated for residential development in the NLC Local Plan, the growth factors account for any increase in traffic as a result of the proposals. It is therefore considered that there is an element of double counting in this TA, which is considered to provide a robust approach to assessment.

7.4 The growth factors have been applied to the 2022 existing peak hour flows at **Appendix BGH2**, resulting in the 2028 base traffic flows as shown on the diagrams at **Appendix BGH15**.

8.0 TRAFFIC IMPACT OPERATIONAL ASSESSMENTS

8.1 The operation of each junction within the scope of the TA has been assessed for the 2028 base scenario and the 2028 predicted scenario. The proposed 3 arm site access junction has also been assessed.

8.2 The development generated traffic flows have been added to the 2028 base traffic flows at **Appendix BGH15**, resulting in the 2028 predicted traffic flows at **Appendix BGH16**.

Proposed Site Access Priority Crossroads/Grammar School Lane

8.3 The operation of the proposed site access priority crossroads with Grammar School Lane has been assessed using the PICADY element of the Junctions 9 modelling software. The results of the modelling are summarised in Table 8.1 and the full model outputs are attached at **Appendix BGH3**.

8.4 The Ratio of Flow to Capacity (RFC) results are provided for the junction. At existing junctions in urban areas, an RFC value of 1.00 is generally used to identify a junction operating within its practical capacity. The maximum queues are presented in Passenger Car Unit (PCU) format, with a PCU length equating to around 5.75 metres.

Table 8.1 – 2028 Predicted Operational Assessment
Proposed Site Access Priority Crossroads with Grammar School Lane

Arm	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
Grammar School Lane (S)	0.04	0	0.10	0
Link Road (E)	0.00	0	0.00	0
Grammar School Lane (N)	0.00	0	0.02	0
Link Road (W)	0.00	0	0.00	0

8.5 Table 8.1 shows that the proposed priority crossroads with Grammar School Lane will operate well within capacity. The maximum RFC value of 0.10 is predicted to occur on the Grammar School Lane arm during the evening peak hour, with no queuing.

8.6 It is therefore clear that a priority crossroads arrangement would have sufficient capacity to serve 112 dwellings on the application site.

Wesley Road/Old Courts Road/A18 Signalised Junction

8.7 The operation of the Wesley Road/Old Courts Road/A18 signalised junction has been assessed for the 2028 base and predicted weekday morning and evening peak hours, using the LinSig modelling software. The results of the modelling are summarised in the tables below and the full model outputs are attached at **Appendix BGH3**.

8.8 The Degree of Saturation (DoS) results are provided for the junction. The DoS represents the ratio of flow to capacity for a particular approach to a junction. A DoS of 90% is generally recognised as an acceptable DoS in order for a junction to be avoiding significant operational issues on any approach, with a DoS of 100% representing the maximum practical capacity of an approach. The Practical Reserve Capacity (PRC) is calculated from the maximum degree of saturation and is a measure of how much additional traffic could pass through a junction, whilst maintaining a DoS of 90% on all lanes. Therefore, a high PRC suggests that the junction is operating well within capacity. The Mean Maximum Queue (MMQ) is also presented in PCU format.

2028 Base Operational Assessment

8.9 Table 8.2 shows the results of the operational assessment of the Wesley Road/Old Courts Road/A18 signalised junction for the 2028 base morning and evening peak hours.

Table 8.2 – 2028 Base Operational Assessment
Wesley Road/Old Courts Road/A18 Signalised Junction

Arm	2028 Base AM Peak Hour		2028 Base PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Wesley Road	72.4%	4	67.0%	3
A18 East	82.9%	19	86.7%	23
Old Courts Road	21.6%	1	84.3%	7
A18 West	81.9%	18	88.0%	22
PRC	8.6%		2.3%	

8.10 Table 8.2 shows that the Wesley Road/Old Courts Road/A18 signalised junction is predicted to continue operating within capacity at a future year of 2028, with background traffic growth but without traffic generated by the proposed development. The maximum DoS of 88.0% is predicted to occur on the A18 West arm during the evening peak hour and the maximum MMQ value of 23 PCUs is predicted to occur on the A18 East arm during the evening peak hour. This is an increase of only 4.9% DoS when compared with the 2022 existing results.

2028 Predicted Operational Assessment

8.11 Table 8.3 shows the results of the operational assessment of the Wesley Road/Old Courts Road/A18 signalised junction for the 2028 predicted morning and evening peak hours.

Table 8.3 – 2028 Predicted Operational Assessment
Wesley Road/Old Courts Road/A18 Signalised Junction

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Wesley Road	80.7%	6	83.5%	5
A18 East	87.0%	21	89.1%	24
Old Courts Road	16.6%	1	85.0%	7
A18 West	86.5%	21	89.9%	23
PRC	3.4%		0.1%	

8.12 In the 2028 predicted scenario, with the addition of traffic generated by the proposed 112 dwellings accessed from Grammar School Lane, Table 8.3 shows that the Wesley Road/Old Courts Road/A18 signalised junction is predicted to continue operating within its maximum theoretical capacity. The maximum DoS of 89.9% is predicted to occur on the A18 West arm during the evening peak hour, with the maximum MMQ of 24 PCUs predicted to occur on the A18 East arm during the evening peak hour. This is an increase in DoS of only 1.9% when compared with the 2028 base scenario.

Ash Grove/Cary Lane/A18 Signalised Junction

8.13 The operation of the Ash Grove/Cary Lane/A18 signalised junction has been assessed for the 2028 base and predicted weekday morning and evening peak

hours, using the LinSig modelling software. The results of the modelling are summarised in the following tables and the full model outputs are attached at **Appendix BGH3**.

2028 Base Operational Assessment

8.14 Table 8.4 shows the results of the operational assessment of the Ash Grove/Cary Lane/A18 signalised junction for the 2028 base morning and evening peak hours.

Table 8.4 – 2028 Base Operational Assessment Ash Grove/Cary Lane/A18 Signalised Junction

Arm	2028 Base AM Peak Hour		2028 Base PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Ash Grove	40.3%	2	16.1%	1
A18 East	59.4%	19	63.5%	20
Cary Lane	25.5%	1	67.8%	5
A18 West	64.9%	22	71.8%	25
PRC	38.6%		25.4%	

8.15 Table 8.4 shows that the Ash Grove/Cary Lane/A18 signalised junction is predicted to continue operating within capacity at a future year of 2028, with background traffic growth but without traffic generated by the proposed development. The maximum DoS of 71.8% is predicted to occur on the A18 West arm during the evening peak hour, with a maximum MMQ of 25 PCUs. This is an increase in the DoS value of only 4% when compared with the 2022 existing scenario.

2028 Predicted Operational Assessment

8.16 Table 8.5 shows the results of the operational assessment of the Ash Grove/Cary Lane/A18 signalised junction for the 2028 predicted morning and evening peak hours.

Table 8.5 – 2028 Predicted Operational Assessment
Ash Grove/Cary Lane/A18 Signalised Junction

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Ash Grove	40.3%	2	16.0%	1
A18 East	61.1%	20	63.9%	20
Cary Lane	25.5%	1	67.8%	5
A18 West	65.8%	22	73.2%	26
PRC	36.7%		22.9%	

8.17 In the 2028 predicted scenario, with the addition of traffic generated by proposed 112 dwellings accessed from Grammar School Lane, Table 8.5 shows that the Ash Grove/Cary Lane/A18 signalised junction is predicted to continue operating within its maximum theoretical capacity. The maximum DoS of 73.2%% is predicted to occur on the A18 West arm during the evening peak hour. The maximum MMQ of 26 PCUs is predicted to also occur on the A18 West arm during the evening peak hour. The maximum DoS in the 2028 base scenario occurred on the A18 West arm, and it is shown to increase by only 1.4% DoS in the predicted scenario.

Atherton Way/A18 Roundabout

8.18 The operation of the Atherton Way/A18 roundabout has been assessed for the 2028 base and predicted weekday morning and evening peak hours, using the ARCADY element of the Junctions 9 modelling software. The results of the modelling are summarised in the following tables and the full model outputs are attached at **Appendix BGH3**.

2028 Base Operational Assessment

8.19 Table 8.6 shows the results of the operational assessment of the Atherton Way/A18 roundabout for the 2028 base morning and evening peak hours.

Table 8.6 – 2028 Base Operational Assessment
Atherton Way/A18 Roundabout

Arm	2028 Base AM Peak Hour		2028 Base PM Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
A18 Barnard Avenue	0.61	2	0.71	2
A18 Ancholme Way	0.77	3	0.70	2
Atherton Way	0.38	1	0.37	1

8.20 Table 8.6 shows that the Atherton Way/A18 roundabout is predicted to continue operating within capacity at a future year of 2028, with background traffic growth but without traffic generated by the proposed development. The maximum RFC of 0.77 is predicted to occur on the A18 Ancholme Way arm during the morning peak hour, with minimal queuing. When compared with the existing scenario, this is an increase in maximum RFC of 0.05.

2028 Predicted Operational Assessment

8.21 Table 8.7 shows the results of the operational assessment of the Atherton Way/A18 roundabout for the 2028 predicted morning and evening peak hours.

Table 8.7 – 2028 Predicted Operational Assessment
Atherton Way/A18 Roundabout

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
A18 Barnard Avenue	0.63	2	0.71	3
A18 Ancholme Way	0.77	4	0.72	3
Atherton Way	0.38	1	0.37	1

8.22 In the 2028 predicted scenario, with the addition of traffic generated by the proposed 112 dwellings accessed from Grammar School Lane , Table 8.7 shows that the Atherton Way/A18 junction is predicted to continue operating within capacity. The maximum RFC of 0.77 is predicted to occur on the A18 Ancholme Way arm

during the morning peak hour, with minimal queuing. This shows no increase in the maximum RFC value when compared with the 2028 base scenario.

Traffic Impact Operational Assessments Summary

8.23 The operational assessment shows that all junctions assessed as part of this TA are predicted to operate within capacity at a future year of 2028, with the addition of trips generated by the proposed 112 dwellings, accessed from Grammar School Lane.

8.24 It is therefore considered that the impact of the trips generated by the proposed 112 dwellings on the road network can be accommodated and clearly any residual impact could not be considered severe, in accordance with paragraph 111 of the NPPF.

9.0 SENSITIVITY TEST

9.1 As described earlier in this TA, it has been a longstanding aim of NLC to deliver a link road around the north-eastern extents of Brigg, linking the A18 with Atherton Way. The route of the prospective link road runs through the five sites allocated for residential development, which includes the site on which 112 dwellings are proposed by Gleeson Regeneration as part of allocation site BRIH-2.

9.2 A sensitivity test has therefore been undertaken, which considers residential development on all five of the BRIH allocation sites, with the fully completed link road in place between the A18 Wrawby Road and Atherton Way. The operation of the potential future crossroads arrangement with Grammar School Lane, along with the three junctions assessed as part of this TA, have been assessed as part of the sensitivity test.

9.3 The number of dwellings that could be accommodated on the BRIH-1 and BRIH-5 sites has been obtained from the NLC Housing and Employment Land Allocations DPD. The number of dwellings that could be accommodated on the full BRIH-2, BRIH-3 and BRIH-4 sites have been obtained from the TA prepared for the Bellway Homes (Yorkshire) full and outline planning applications. The trip generation for each of the allocation sites considered in the sensitivity test is summarised in Table 9.1, which is in line with the trip generation presented in the TA for the Bellway Homes (Yorkshire) applications for assessment Scenario 3.

Table 9.1 – Sensitivity Test Trip Generation – All BRIH Allocation Sites

Site	Morning Peak Hour			Evening Peak Hour		
	In	Out	Two-Way	In	Out	Two-Way
BRIH-1 (72 dwellings)	9	29	38	27	11	38
BRIH-2 (148 dwellings)	19	59	78	55	23	78
BRIH-3 (291 dwellings)	37	116	153	108	45	153
BRIH-4 (117 dwellings)	15	47	62	43	18	61
BRIH-5 (81 dwellings)	10	32	42	30	13	43
Total (709 dwellings)	90	283	373	263	110	373

9.4 To distribute the trip generation for all five allocation sites with the completed link road in place for the sensitivity test, the following assumptions have been made to reflect the distribution of development generated trips along the link road. As the mid point of the completed link road would broadly lie in the vicinity of the boundary between the BRIH-2 and BRIH-3 allocation sites, it has been assumed that the BRIH-3 and BRIH-4 sites would have similar trip distribution characteristics, and in the same way the BRIH-1, BRIH-2 and BRIH-5 sites would also have similar distribution characteristics. These can be summarised as follows:

- BRIH-3 and BRIH-4 allocation site trips:
    a. For those working in Brigg (North Lincolnshire 011 MSOA), trips to the east of and including the Wesley Road junction would access the sites via the proposed site access junction with the A18 Wrawby Road. All Brigg trips to the west of Wesley Road would travel via the new link road, as this would be the more attractive route.
    b. All other trips to the north-east of Brigg will use the proposed site access junction with the A18 Wrawby Road.
    c. It has been assumed that 50% of all other BRIH-3 and BRIH-4 trips to the west of Brigg would travel via the new link road, rather than using the new site access junction with the A18 and travelling through Brigg, as the travel distance via the link road would be shorter for half of the combined BRIH-3 and BRIH-4 sites.
- BRIH-1, BRIH-2 and BRIH-5 allocation site trips:
    a. For those working in Brigg (North Lincolnshire 011 MSOA) – trips to the east of and including the Monument Roundabout would use the proposed site access junction with the A18 Wrawby Road. All Brigg trips to the west of the Monument Roundabout would travel via the new link road. This is different to BRIH-3 and BRIH-4, as the BRIH-1, 2 and 5 sites are located further west along the link road, therefore travelling to the east of Wesley Road becomes more convenient via the link road.
    b. All other trips to the north-east of Brigg will use the proposed site access junction with the A18 Wrawby Road.
    c. All other trips to the west of Brigg would travel via the new link road.

9.5 The diagrams at **Appendix BGH18** show the trip distribution percentages for the sensitivity test, with the assigned sensitivity test development generated trips shown on the diagrams at **Appendix BGH19**.

9.6 The sensitivity test development generated traffic flows at **Appendix BGH19** have been added to the 2028 base traffic flows at **Appendix BGH15**, resulting in the 2028 predicted sensitivity test traffic flows at **Appendix BGH20**.

9.7 Clearly the development sites will be built out over a number of years, in some instances beyond the future year of 2028 which has been considered in this TA. Any development generated traffic will be introduced onto the local highway network gradually as the development is occupied in phases, whereas the TA assumes that all development generated traffic will be on the network in 2028. This is considered to provide a robust approach to the 2028 future year operational assessment undertaken as part of this TA.

Proposed Priority Crossroads Junction Grammar School Lane/Link Road

9.8 The operation of the proposed crossroads junction between Grammar School Lane and the new link road, as illustrated at **Appendix BGH9**, has been assessed for the sensitivity test. This has been undertaken using the PICADY element of the Junctions 9 modelling software. The results of the modelling are summarised in Table 9.2 and the full model output is attached at **Appendix BGH17**.

Table 9.2 – 2028 Predicted Sensitivity Test - Operational Assessment
Proposed Grammar School Lane/Link Road Priority Crossroads

Arm	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
Grammar School Lane (S)	0.02	0	0.03	0
Link Road (E)	0.00	0	0.00	0
Grammar School Lane (N)	0.00	0	0.02	0
Link Road (W)	0.01	0	0.00	0

9.9 Table 9.2 shows that the proposed Grammar School Lane/Link Road priority crossroads junction arrangement is predicted to operate well within capacity, at a future year of 2028 in the sensitivity test scenario. The maximum RFC value of 0.03

is predicted to occur on the Grammar School Lane (S) arm during the evening peak hour, with no queuing.

Wesley Road/Old Courts Road/A18 Signalised Junction

9.10 Table 9.3 shows the results of the operational assessment of the Wesley Road/Old Courts Road/A18 signalised junction for the 2028 predicted morning and evening peak hours for the sensitivity test. The full model output is attached at **Appendix BGH3**.

Table 9.3 – 2028 Predicted Sensitivity Test – Operational Assessment
Wesley Road/Old Courts Road/A18 Signalised Junction

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Wesley Road	73.2%	4	66.3%	3
A18 East	86.8%	21	89.8%	25
Old Courts Road	24.1%	1	87.4%	7
A18 West	85.6%	20	91.2%	24
PRC	3.7%		-1.3%	

9.11 In the 2028 predicted sensitivity test, with the addition of traffic generated by all five BRIH allocation sites and the completed link road in place, Table 9.3 shows that the Wesley Road/Old Courts Road/A18 signalised junction is predicted to continue operating within its maximum theoretical capacity. The maximum DoS of 91.2% is predicted to occur on the A18 West arm during the evening peak hour, with a maximum MMQ of 25 PCUs predicted to occur on the A18 East arm during the evening peak hour. This is an increase in DoS of only 3.2% when compared with the 2028 base scenario.

Ash Grove/Cary Lane/A18 Signalised Junction

9.12 Table 9.4 shows the results of the operational assessment of the Ash Grove/Cary Lane/A18 signalised junction for the 2028 predicted morning and evening peak hours for the sensitivity test. The full model output is attached at **Appendix BGH3**.

Table 9.4 – 2028 Predicted Sensitivity Test - Operational Assessment
Ash Grove/Cary Lane/A18 Signalised Junction

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)
Ash Grove	42.1%	2	20.6%	1
A18 East	62.0%	20	64.8%	21
Cary Lane	27.2%	1	68.5%	5
A18 West	67.1%	23	74.7%	27
PRC	34.2%		20.5%	

9.13 In the 2028 predicted sensitivity test, with the addition of traffic generated by all five BRIH allocation sites and the completed link road in place, Table 9.4 shows that the Ash Grove/Cary Lane/A18 signalised junction is predicted to continue operating within capacity. The maximum DoS of 74.7% is predicted to occur on the A18 West arm during the evening peak hour, with a corresponding maximum MMQ of 27 PCUs. This is an increase in DoS of only 2.9% when compared with the 2028 base scenario.

Atherton Way/A18 Roundabout

9.14 Table 9.5 shows the results of the operational assessment of the Atherton Way/A18 roundabout for the 2028 predicted morning and evening peak hours for the sensitivity test. The full model output is attached at **Appendix BGH3**.

Table 9.5 – 2028 Predicted Sensitivity Test - Operational Assessment
Atherton Way/A18 Roundabout

Arm	2028 Predicted AM Peak Hour		2028 Predicted PM Peak Hour	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
A18 Barnard Avenue	0.67	2	0.74	3
A18 Ancholme Way	0.80	4	0.80	4
Atherton Way	0.49	1	0.42	1

9.15 In the 2028 predicted sensitivity test, with the addition of traffic generated by all five BRIH allocation sites and the completed link road in place, Table 9.5 shows that the Atherton Way/A18 junction is predicted to continue operating within capacity. The maximum RFC of 0.80 is predicted to occur on the A18 Ancholme Way arm during both peak hours. When compared with the 2028 base scenario, the maximum RFC on the A18 Ancholme Way arm during the morning peak hour increases by only 0.03 RFC. The RFC on the A18 Ancholme Way arm during the evening peak hour is predicted to increase by 0.10 RFC.

9.16 It is therefore concluded that the sensitivity test shows that the junctions assessed in this TA would continue to operate within capacity, with the future link road in place and with trips generated by all five housing allocation sites.

9.17 It is notable that the completion of the link road through to Atherton Way, which is not proposed as part of the planning application, but is considered in the sensitivity test, would generally improve the future operation of the junctions through the centre of Brigg. This is because some development generated trips would make use of the completed link road, as opposed to using the A18 and Grammar School Lane.

10.0 SUMMARY AND CONCLUSIONS

10.1 This Transport Assessment has been prepared by Bryan G Hall on behalf of Gleeson Regeneration to support a planning application for residential development on land located to the east of Grammar School Lane, Brigg.

10.2 The development proposals seek to provide a new residential development on the site which will comprise 112 dwellings. Vehicular access to the site will be taken from a new priority crossroads with Grammar School Lane to the west of the site.

10.3 The proposed residential development site forms part of a wider area identified by North Lincolnshire Council as sites for residential development, as set out within NLC's Housing and Employment Land Allocations DPD. Housing allocations at the north-eastern extents of Brigg have been divided into five separate allocated sites, known as BRIH-1, BRIH-2, BRIH-3, BRIH-4 and BRIH-5. The site forms part of the BRIH-2 allocation site.

10.4 It has been a longstanding aim of NLC to deliver a link road around the north-eastern extents of Brigg, linking the A18 with Atherton Way. The route of the prospective link road runs through the five sites allocated for residential development.

10.5 Two planning applications were submitted in August 2023 by Bellway Homes (Yorkshire). A full planning application for 290 dwellings has been submitted, which incorporates 75% of the land which forms the BRIH-3 and BRIH-4 allocation sites. An outline planning application for 266 dwellings, with all matters reserved, has also been submitted, which incorporates the remainder of the BRIH-3 allocation site and the whole of the BRIH-2 allocation site. The proposed Gleeson Regeneration development site is therefore within the wider site which is the subject of the Bellway Homes (Yorkshire) outline planning application.

10.6 A description of the site and the existing local highway network in the vicinity of the site has been provided. Traffic surveys were undertaken on Wednesday 11th May 2022 for the junction scope agreed with NLC. It has been identified that the weekday morning peak hour occurs between 8:00am and 9:00am and the weekday evening peak hour occurs between 4:30pm and 5:30pm. Operational assessment of the junctions where the proposed 112 dwellings are predicted to generate 30 or more additional two way trips have been undertaken for the 2022 existing scenario, during the weekday morning and evening peak hours. This shows that all of the junctions considered are currently operating within capacity.

10.7 A review of personal injury collision data for the 6.5 year period from 1st January 2016 to 29th September 2022, obtained from NLC, has revealed that there are no existing road safety issues which would be exacerbated by the proposed development traffic.

10.8 It has been demonstrated that the site is accessible using sustainable modes of transport, such as walking, cycling and public transport. The site is well located to promote trips on foot to local amenities within Brigg, including schools. A good level of existing cycle infrastructure is available in Brigg, which facilitates journeys by bike, and a shared footway/cycleway is proposed within the site. A range of bus services are provided from nearby bus stops, providing services to Scunthorpe and other local destinations such as Wrawby, Barnetby le Wold, Broughton and Kirmington.

10.9 Details of the proposed development have been provided, including the proposed access arrangements. Vehicular access will be by way of a new priority crossroads junction with Grammar School Lane at the western site boundary. The existing Brickyard Lane junction with Grammar School Lane will be closed. The proposed site access road and the main spine road through the site will have a carriageway width of 6.75 metres, with a 2 metre wide footway on the southern side and a 2 metre wide verge and 3 metre wide shared footway/cycleway on the northern side. The main spine road through the proposed development will form part of the future link road and, as such, it accords with the dimensions of the main spine road through the Bellway Homes (Yorkshire) application sites, which were agreed with NLC as suitable for the future link road.

10.10 The relocation of the existing 20mph/30mph speed limit change on Grammar School Lane to the south of the proposed site access junction is supported, and will require an amendment to the existing Traffic Regulation Order. It has been demonstrated that suitable visibility splays for the speed limits on Grammar School Lane are achievable at the proposed site access junction, in accordance with guidance in Manual for Streets.

10.11 It is proposed to retain the PRoW known as BRIG284, which currently runs along Brickyard Lane, along its existing alignment. Vehicular access to Brickyard Lane will also be retained. The details of this arrangement are to be agreed with NLC.

10.12 In accordance with the LTP report into the provision of the Link Road on behalf of NLC, the Grammar School Lane access can accommodate 60 two-way trips during the morning peak hour, which equates to 115 dwellings. Therefore the proposed 112 dwellings on the Gleeson Regeneration site are below this threshold.

10.13 Pedestrian and cycle access to the site will be provided from Grammar School Lane. An uncontrolled pedestrian crossing will be provided to the footway on the western side of Grammar School Lane, with a further uncontrolled crossing provided across the access road within the site, to facilitate pedestrian access to the proposed dwellings on the northern side of the access road. At the junction with Grammar School Lane, a pedestrian/cycle priority crossing is proposed on the northern side of the junction, along the alignment of the proposed footway/cycleway on the northern side of the site access and future link road.

10.14 Parking will be provided in line with the NLC standards, including the provision of an electric vehicle charging point per dwelling. Swept path analysis of the proposed site access and the internal layout has been undertaken, which demonstrates that the site can be satisfactorily serviced by a refuse vehicle.

10.15 The TRICS database has been used to establish the trip generation associated with the development proposals. The development generated trips have been distributed onto the local highway network based on 2011 Census data.

10.16 To account for background traffic growth on the network, the relevant growth factors have been obtained using TEMPro. These factors have been applied to the 2022 surveyed traffic flows, to project them to a future year of 2028. The proposed development generated flows have then been added to the 2028 base flows.

10.17 Operational assessment of the junctions where the proposed 112 dwellings are predicted to generate 30 or more additional two way trips has been undertaken, at a future year of 2028. The operational assessment shows that all junctions assessed are predicted to operate within capacity, both with and without development generated trips. The operational assessment also shows that the proposed site access junction with Grammar School Lane is predicted to operate within capacity.

10.18 It has therefore been demonstrated that the impact of the trips generated by the proposed development site can be satisfactorily accommodated on the road network and in no way would the residual impact of development traffic be considered severe, in accordance with paragraph 111 of the NPPF.

10.19 A sensitivity test has also been undertaken, which considers residential development on all five of the BRIH allocation sites, with the fully completed link road in place between the A18 Wrawby Road and Atherton Way. The operation of the proposed crossroads arrangement with Grammar School Lane, along with the three junctions assessed as part of this TA, have been assessed as part of the sensitivity test.

10.20 The sensitivity test shows that the junctions assessed in this TA would continue to operate within capacity, with the future link road in place and with trips generated by all five allocation sites.

10.21 This Transport Assessment has demonstrated that the proposed development is in accordance with national and local planning policy and guidance. It is therefore concluded that there are no justifiable highways or transport related reasons why the proposed development should not be granted planning permission.