SCP

Transportation Planning : Infrastructure Design

Transport Assessment

Proposed Residential Development

Cardwell Farm, Barton

Wainhomes (North West) Limited

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APPENDICES

1.0 INTRODUCTION

1.1 This Transport Assessment (TA) has been prepared by SCP on behalf Wainhomes (North West) Ltd to consider the traffic and transport implications of a planning application for a residential development on land at Cardwell Farm to the east of A6 Garstang Road, Barton.

1.2 The proposed development comprises of a residential scheme of some 151 dwellings to be accessed to the west of Garstang Road via a new access.

1.3 The TA has been prepared to appraise the site in terms of the likely transport implications of the development on the local highway network. The accessibility of the site by sustainable modes including walking, cycling and public transport is also assessed.

1.4 This assessment estimates the traffic likely to be generated by the development, distributes it to the local highway network and considers its impact.

1.5 As well as traffic impact issues, this TA also considers the sustainability and accessibility of the site. The report therefore covers the following:

- Section 2 outlines the policy background at a national and local level.
- Section 3 provides a description of the highway network surrounding the site, details of the existing traffic flows, parking provision, review of the personal injury accident records and the results of the baseline capacity assessments within the study area
- Section 4 describes the site location and development proposals with regard to the proposed quantum of development and broad layout of the site, the proposed means of access to the site and also the proposed parking provision.
- Section 5 examines the accessibility of the site by a number of travel modes and also considers the accessibility of a range of key services and facilities.
- Section 6 discusses the traffic flows used for the assessment.
- Section 7 summarises the assessment parameters that have been adopted within this Transport Assessment.
- Section 8 examines the impact of development traffic on the local highway network and presents the results of the future year junction assessments to determine the potential impact of the proposals.
- Section 9 of the report draws together the summary and conclusions.

2.0 POLICY CONTEXT

National Planning Policy Framework

2.1 On 19th February 2019, the Ministry of Housing, Communities and Local Government published a new National Planning Policy Framework (NPPF), which replaced the document that was first published on 27th March 2012 and then updated in 24th July 2018.

2.2 The new NPPF in paragraph 103 states that "significant development should be focused in locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help reduce congestion and emissions and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision making."

2.3 In paragraph 108 the NPPF states that when considering planning applications, it should be ensured that:

- Appropriate opportunities to promote sustainable transport can be or have been taken up, given the location and type of development;
- Safe and suitable access to the site can be achieved for all users; and
- 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.
- NPPF paragraph 109 states that "Development should only be prevented or refused on highway 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 In relation to paragraph 109, developments should be in accordance with paragraph 110, which states:

- Give priority first to pedestrians 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;
- Address the needs of people with disabilities and reduce mobility in relation to all modes of transport;

- 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;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.5 Paragraph 111 of the NPPF states that all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.

Central Lancashire Core Strategy

2.6 The Core Strategy was prepared jointly by Preston City Council, Chorley Council and South Ribble Council and was adopted in July 2012. The Core Strategy coordinates development in the area covered by the aforementioned three councils.

2.7 Central Lancashire Adopted Core Strategy sets a Vision for Central Lancashire in 2026 as follows (p.33):

'By 2026 Central Lancashire will be recognised as a highly sought after place to live and work in the North West. It offers excellent quality of life to all its residents. It will play a leading role in Lancashire's world class economy and have sustainable economic growth based on the area's unique assets. Its central location at the hub of the transport network, its green spaces and access to open countryside make it a place with 'room to breathe'…

Central Lancashire's wider role will be as a driver of sustainable economic growth for the region, marrying opportunity and need and providing a transport hub to improve connections for the region….

There will be improved transport connections within Central Lancashire and to wider regional, national and international destinations. The character of rural villages will have been maintained, with access to services to sustain the local communities and overcome rural poverty.'

2.8 Central Lancashire Adopted Core Strategy sets the locally distinctive Strategic Objectives, designed to set out the key issues to be addressed in each policy area. The following Strategic Objectives are relevant to the proposed residential development:

- SO 3 - To reduce the need to travel, manage car use, promote more sustainable modes of transport and improve the road network to the north and south of Preston.
- SO 4 - To enable easier journeys into and out of Preston City Centre and east/west trips across South Ribble, improve movement around Chorley, as well as safeguard rural accessibility, especially for mobility impaired people.

Lancashire Third Local Transport Plan

2.9 Lancashire Local Transport Plan 3 (LTP3) came into effect in 2011 with a 20 year strategy and a short term implementation plan aimed at delivering the Government's goals for sustainable transport at the Lancashire level through funded schemes and coordinated actions.

2.10 Lancashire County Council (LCC) sets out the following transport goals within LTP3 to increase prosperity and well-being for all communities in Lancashire (p.9):

- To help to secure a strong economic future by making transport and travel into and between our major economic centres more effective and efficient and by improving links to neighbouring major economic areas and beyond.
- To provide all sections of the community with safe and convenient access to the services, jobs, health, leisure and educational opportunities that they need.
- To improve the accessibility, availability and affordability of transport as a contribution to the development of strong and cohesive communities.
- To create more attractive neighbourhoods by reducing the impact of transport on our quality of life and by improving our public realm.
- To reduce the carbon impact of Lancashire's transport requirements, whilst delivering sustainable value for money transport options to those who need them.
- To make walking and cycling more safe, convenient and attractive, particularly in the more disadvantaged areas of Lancashire, bringing improvements in the health of Lancashire's residents.
- In all that we do, to provide value for money by prioritising the maintenance and improvement of Lancashire's existing transport infrastructure where it can help to deliver our transport goals.

2.11 From the aforementioned transport goals LCC has drawn up seven transport priorities which will deliver tangible improvements over the life of the strategy.

- Improving access into areas of economic growth and regeneration.
- Providing better access to education and employment.

- Improving people's quality of life and wellbeing.
- Improving safety of our streets for our most vulnerable residents.
- Providing safe, reliable, convenient and affordable transport alternatives to the car.

Summary

2.12 Given the above, it is considered that the proposals are in compliance with relevant national and local transport policy.

3.0 THE SITE AND LOCAL HIGHWAY NETWORK

Site Location

3.1 The plans at **Appendix 1** shows the location of the site in the context of the wider area.

3.2 The site is roughly rectangular in shape and consists of approximately five hectares of land. It lies between the village of Barton to the north and Newsham to the south and has a frontage of approximately 50m along the eastern side of the A6 which is located at the north western extent of the site.

3.3 The site is bounded to the north by an existing farm. The western boundary of the site is formed in part by Garstang Road itself at the northern end of the site and also by the rear gardens of existing properties which take direct frontage access onto Garstang Road. The eastern boundary of the site is formed by open land and the southern boundary is formed by an existing residential development which takes access from Garstang Road further to the south via Thorntrees Avenue.

Local Highway Network

A6 Garstang Road

3.4 The A6 Garstang Road is a single carriageway road which runs on a generally north to south alignment. Locally, Garstang Road provides vehicle access between Barton and Newsham. The road provides access to a number of residential areas to both sides of the carriageway.

3.5 Continuing south from the site along the Garstang Road through the village of Broughton provides access to the M6 motorway and Preston via the M55 Junction 1. To the north of the site, Garstang Road continues to Garstang, Lancaster and beyond, serving numerous towns and villages and effectively running parallel to the M6 which lies to the east of Garstang Road.

3.6 In the vicinity of the site Garstang Road is a single carriageway road of approximately 10m width with 3.5m wide traffic lanes for ahead traffic. There is a right turn ghost island of 3m width which provides access to Thorntrees Avenue and which prevents northbound vehicles waiting to turn right from blocking northbound through traffic. Similarly, there is ghost island for southbound right turning traffic into Station Lane.

3.7 Garstang Road is lit and is subject to a 40mph speed limit as it passes along the frontage of the site. There are footways of at least 2m in width along both sides of the carriageway with the majority of the eastern footway being segregated from vehicular traffic by wide grass verges. Where the side roads cross the footways along Garstang Road there are dropped crossings and

tactile paving. There is direct frontage access to the driveways of many of the residential properties which front onto Garstang Road.

Thorntrees Avenue / Woodlands Way

3.8 Thorntrees Avenue lies to the south of the site and forms the minor arm approach to a ghost island junction with Garstang Road at its eastern extent. At the eastern end of Thorntrees Avenue, approximately 90m from its junction with Garstang road, Thorntrees Avenue turns northwards and becomes Woodlands Way.

3.9 The road(s) provide access to 41 existing properties which take direct frontage access from the carriageways of Thorntrees Avenue and Woodlands Way.

3.10 Both roads exhibit the same physical characteristics in that they are 5.5m wide, are lit and have 2m wide footways on both sides of the carriageway (along Thorntrees Avenue the footways are segregated from the carriageway by grass verges). Both roads are subject to a 30mph speed limit.

Station Lane

3.11 Station Lane lies to the south of the southern boundary of the site along Garstang Road in the centre of Newsham village and approximately opposite Thorntrees Avenue. The road provides a convenient route to some of the outlying hamlets in the local area as well as to a local primary school. There are no other destinations of significance via Station Lane.

3.12 The road is signposted as being unsuitable for heavy goods vehicles and coaches due to a narrow bridge approximately 1 km to the west from its junction with Garstang Road.

B5296 Whittingham Lane

3.13 The B5296 is located further to the south of Newsham in the centre of Broughton. It runs on an east to west orientation and forms the eastern and western approach arms to a signalised junction with Garstang Road, which form the northern and southern approach arms.

3.14 The road is typical of an urban road in that it is lit, has footways on both sides of the carriageway and is subject to a 30mph speed limit.

Broughton Bypass

3.15 The existing local highway network in Broughton has been subject to significant changes with the completion of the Broughton Bypass, which opened in October 2017.

3.16 The bypass provides a link to the M55 roundabout south of Broughton and also Whittingham Lane and the A6 north of Broughton crossroads, whilst avoiding the main part of the village of Broughton.

3.17 The bypass is 2km in length with the northern section from the A6 Garstang Road to the B5269 Whittingham Lane providing one lane in each direction. The southern section, from the B5269 Whittingham Lane to Broughton roundabout (M55 Junction 1), is formed by a dual carriageway.

3.18 As part of the planning consent for Broughton Bypass, improvements are proposed along the A6 through Broughton Village to reflect the reduction in traffic levels and encourage traffic continuing along the A6 to use the bypass rather than the A6. The proposals also include the removal of the traffic signals at Broughton crossroads, the creation of narrower roads with wider footways, courtesy crossings, dedicated cycle lanes and tree planting. A new 20mph speed limit and vehicle weight limit along Garstang Road will also be introduced. These improvements will provide better conditions for pedestrians, cyclists and buses.

3.19 The bypass is expected to reduce traffic travelling through the centre of Broughton on Garstang Road by up to 90% and improve journey times for motorists. Creating better connectivity to the wider strategic road network, contributing to the development and economic growth in the wider area.

Summary

3.20 The development site is well located in terms of its access onto the local and strategic highway networks.

Traffic Flow Data

3.21 Comprehensive traffic flow data for the weekday morning and evening peak periods has been obtained for the following key junctions on the surrounding highway network.

- Garstang Road (A6) / James Towers Way Roundabout;
- James Towers Way / Whittingham Lane Roundabout;
- James Towers Way / D'Urton Lane Roundabout;

3.22 The surveys were undertaken on Tuesday 15th May 2018 during the hours of 07:00-09:30 and 16:00-18:30. Manual classified turning counts and queue lengths were recorded at the junctions listed above.

3.23 Automatic Traffic Counts (ATC) were also undertaken in the vicinity of the proposed site access junction to measure the existing two-way flows.

3.24 To validate the model outputs, the survey data has been analysed and the AM and PM peak hour traffic flows for each junction have been identified. The highway peak hours at the junctions were found to be 07:15-08:15 and 16:15-17:15.

3.25 During validation it was noted that high numbers of u-turners were recorded at the James Towers Way / D'Urton Lane roundabout which was due to a road closure at the Garstang Road / James Towers Way junction close to the Broughton Roundabout. These movements were due to access the Broughton Roundabout to the south and as a result these movements have not been used in the capacity assessments of the James Towers Way / D'Urton Lane roundabout as in normal conditions these movements would not occur.

3.26 The AM and PM peak hour traffic flows across the network described above are presented diagrammatically in **Appendix 2**.

Existing Junction Capacity Analysis

3.27 The junction modelling results set out below are considered to reflect the existing conditions on the principal junctions in the vicinity of the site. A summary of the results are provided in Table 3.1 and the full Junctions 9 outputs are attached at **Appendix 3**.

3.28 Assessments of the priority controlled junctions within the study area have been undertaken utilising Junctions 9 (PICADY & ARCADY) software. The Junctions 9 models the results generated provide a Ratio to Flow capacity (RFC) along with an estimate of the likely traffic queues. RFC values below 0.85 are generally accepted as representing stable and acceptable operating conditions within the junction's practical capacity. Values between 0.85 and one represent variable operation (i.e. possible queues building up at the junction during the assessment period and increases in vehicular delay at the junction itself). RFC values in excess of 1.00 suggest a junction is operating outside of the optimal operation.

Table 3.1 – Base 2019 Junction results

Arm	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Garstang Road (A6) / James Towers Way Roundabout				
Farm Access	0.0	0	0.0	0
James Towers Way	0.33	1	0.48	1
Garstang Road (A6) South	0.15	0	0.22	0
Garstang Road (A6) North	0.53	1	0.60	2
James Towers Way / Whittingham Lane Roundabout				
Whittingham Lane (B5269) East	0.30	0	0.34	1
James Towers Way (A6) South	0.28	0	0.39	1
Whittingham Lane (B5269) West	0.18	0	0.21	0
James Towers Way (A6) North	0.38	1	0.42	1
James Towers Way / D'Urton Lane Roundabout				
James Towers Way North	0.45	1	0.48	1
D'Urton Lane	0.05	0	0.04	0
James Towers Way South	0.33	1	0.42	1

3.29 The results shown in Table 3.1 demonstrate that all of the junctions within the study area currently operating within capacity during the AM and PM peak hours. This was confirmed when analysing the junctions during a site visit.

Personal Injury Accident Records

3.30 Personal Injury Accident (PIA) data for the most recent five year period from 2014 to 2019 has been obtained from the Lancashire County Council's Maps & Related Information Online (MARIO) website and the CrashMap database (an official recognised database for PIC data in Great Britain). The locations of the recorded accidents can be found at **Appendix 4**.

3.31 The PIA data was obtained for a link of Garstang Road (A6) between Linnet Avenue to the north of the site and station Lane to the south of the site.

3.32 The accident record for the surrounding area is good, with a relatively low incidence of injury accidents.

3.33 The data shows that there were a total of five accidents within the study area during the five year period which resulted in a total of six casualties. This is an average of one accident per annum within the study area and is not considered to be a high frequency. Of the five accidents recorded,

three (60%) were classified as slight in nature, two (30%) were classified as serious and no accidents reported as fatal. These include:

- Two slight and one serious accident occurred in the vicinity of the Garstang Road / Station Lane ghost island. The serious accident involved a goods vehicle and a pedal cycle and resulted in a serious pedal cycle casualty. The two slight accident occurred in 2014 and 2015.One of these accidents involved two vehicles and another involved two vehicles and a motorcycle.
- An accident occurred close to the Barton Car Sales Garage in 2014. This involved two cars and resulted in one slight injury.
- An accident which occurred on Garstang Road in 2014 was classified as serious and involved two cars.
- No fatal accidents, child, or pedestrian casualties were reported Garstang Road during the five year period.

3.34 It is therefore considered that there is no existing safety problems associated with the road network in the immediate vicinity of the development site. It is not anticipated that the traffic associated with the proposed development would result in any significant safety implications on the adjacent highway network.

4.0 SUSTAINABLE ACCESS

4.1 The Government's objectives set out in the NPPF are to ensure that new developments are provided in sustainable locations, where the need to travel is minimised and the use of sustainable modes can be maximised.

4.2 This section outlines the existing public transport, walking and cycling facilities within the vicinity of the development site and describes the accessibility of the site in terms of its proximity to key services and destinations.

Public Transport

4.3 The CIHT publication "Providing for Journeys on Foot" recommends that the maximum walking distance from a residential development to a bus stop should be no more than 400m which is equivalent to a 5 minute walk time.

4.4 There are bus stops located along Garstang Road which can be easily accessed from the site within a 400m walk via the pedestrian link provided from the development site. The two nearest stops are located to the north of the Garstang Road / Thorntrees Avenue.

4.5 There are regular local services which operate from these bus stops and a plan showing the location of the bus stops in the vicinity of the site can be seen at **Appendix 5**.

Table 4.1: Bus Services

Route No.	Route Description	Service Frequency (Peak Hour)	
		Monday to Saturday	Sunday
40 / 40A / 41	Morecambe - Lancaster – Garstang - Preston	30 mins	60 mins

4.6 Table 4.1 shows that there is a frequent bus service passing by the site which provides access to major employment areas and interchanges such as those in Garstang and Lancaster to the north as well as those in Preston to the south, where access to further public transport services to a wide range of destinations can be achieved.

4.7 Also included at **Appendix 5** is a plan showing the public transport accessibility from the site. The plan demonstrates that there are numerous destinations which are accessible by public transport

within 60 minutes travel time from the site and which include major employment and retail destinations.

Rail

4.8 Preston rail station is accessible by bus, taxi or by driving, all of which have the potential to form part of the longer journey by rail. The station is 8km or a 35 minute journey time from the site by bus.

4.9 The station is located on the West Coast Mainline and as such provides access to numerous local, regional and national destinations including Edinburgh, London and Manchester.

Pedestrian Environment and Local Facilities

4.10 There are many local facilities close to the site including several schools, as well as retail, leisure and educational facilities further afield. Both Barton village and Newsham village centres are within a 2km walk distance which is described as the walkable neighbourhood in Manual for Streets (MfS) and it is within this distance that there is the greatest potential to replace car trips. The plan at **Appendix 5** shows the 2km pedestrian catchment area from the site.

4.11 The pedestrian environment in the vicinity of the site is typical of that of a rural area on the outskirts of an established urban area. Many of the minor roads in the area benefit from dropped crossings with tactile paving and the general condition of the footways in considered to be good.

4.12 There are continuous footways on both sides of the carriageway along Garstang Road which provide safe and convenient routes for pedestrians to access local facilities in the village centres of Barton and Broughton. These include:

- Two filling stations with associated convenience stores;
- Two public houses;
- Restaurants;
- A hotel;
- Places of worship;
- Barton St Lawrence Church of England Primary School;
- St Mary's and St Andrew's Catholic Primary School;
- Broughton High School; and
- Numerous leisure facilities including Broughton and District Club and Barton Village Hall.

Cycling

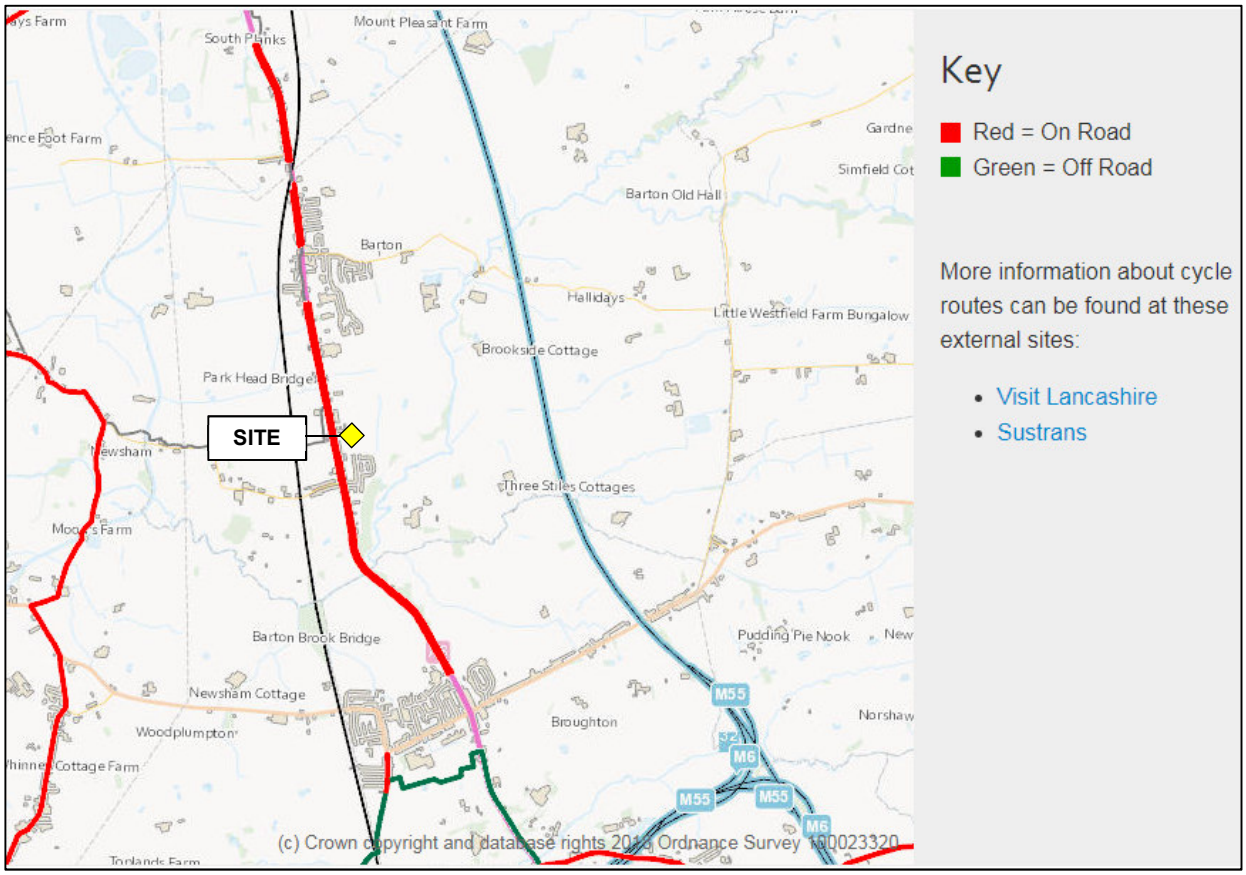
4.13 It is generally recognised that cycle journeys up to 5km have the potential to replace car journeys. The plans at **Appendix 5** shows a 5km catchment area around the site. The plans also demonstrate that connections to regional and national cycle network (NCN) routes comprising of a combination of traffic-free and on-road routes and which also link Garstang Road to many destinations including Broughton, Catterall, Garstang and Preston, are possible.

4.14 Cycle routes of note in the vicinity of the site include:

- Regional Route 622 which is accessed via Garstang Road to the south and provides access to the north western areas of Preston;
- Regional Route 90 which passes to the west of the site and provides a convenient link from the NCN 6 in Catterall to the north to the NCN 6 at Preston to the south accessed via Station Road in Newsham to the south of the site; and
- NCN 6 which provides access from Preston to the Lake District.

4.15 An extract of the Lancashire Council Cycle Map can be seen below in **Figure 4.1**.

Figure 4.1 - Lancashire Cycling Routes



4.16 The plan shows that there are numerous local traffic free and advisory cycle routes which provide cycle access across the local area. In particular, Garstang Road benefits from marked advisory cycle lanes on both the north and southbound carriageway as it passes along the frontage of the site except for where the carriageway is widened to accommodate right turning lanes.

4.17 The scheme will also benefit from the proposed improvements in the village of Broughton to the south which seek to provide a 20mph scheme and enhanced cycle facilities such as foot/cycleways which are segregated from vehicular traffic and will encourage cycle access from the site.

4.18 Clearly, cycle access to local facilities is good and the highway network in the vicinity of the site does not discourage the use of cycle as a form of transport.

Local Facilities

4.19 Table 4.2 provides an extensive list of the local facilities as well as the walk distances to each local facility from the center of the site.

Table 4.2: Local Facilities

Facility	Name	Distance from the Development Site
Bus Stops	Station Lane Bus Stops (located on A6 Garstand Road)	300m
Railway Station	Preston Railway Station	8.0km
ATM / Bank	Natwest Fulwood	3.8km
Supermarket	Booths and Asda Supermarkets Fulwood	3.8km
Convenience Store	Texaco Garage	1.5km
Hot Food Takeaway	Barton Takeaway	300m
Hospital	Fulwood Hospital	3.8km
Pharmacy	Lloyds Pharmacy Fulwood	3.8km
Primary School	St Mary's & St Andrew's Primary School	750m
Secondary School	Broughton High School	1.8km
Petrol Station	Texaco Garage	1.5km
Leisure Facility	Football and Cricket pitches (off Station Lane)	500m
Hotels / Historic Structures	Barton Grange Hotel	1.6km

Post Office	Sharoe Green Post Office	3.5km
Letterboxes	Located on A6 Garstand Road	300m
Petrol Station	Texaco Garage	1.5km
Place of Worship	St Lawrence, Barton	1.0km
Public House	The Sparling	1.2km
Public Pay Phone	Located on A6 Garstand Road	300m
Restaurant / Cafe	Walled Garden	1.2km

4.20 The location of the above local facilities can also be seen on the plan at **Appendix 5**.

5.0 DEVELOPMENT PROPOSALS

5.1 The development proposals consist of a residential scheme of up to 151 dwellings and which includes for a mix of house types.

5.2 As this is an outline planning application the internal layout may be subject to amendment. A plan showing the indicative site layout is included at **Appendix 6**.

Site Access and Internal Layout

5.3 Vehicular and pedestrian access to the site will be taken off Garstang Road (A6) by means of a formalised priority ghost island junction. The access will comprise 9m junction radii and a 6m wide road with a 3.4m wide right turn lane of approximately 50m in length. Footways of 2m in width will be provided along the both sides of the access road. As part of this arrangement the existing pedestrian refuge island will be removed and the existing right turn ghost island into The Sidings will be reduced to 50m in length. A plan showing the indicative ghost island access is found at **Appendix 7**.

5.4 Within the site, the main access roads serving the development will run from the site access with a nominal width of 5.5m. Direct frontage access and access to private driveways will be taken directly from the main internal highway network.

5.5 In accordance with DMRB TD 42/95 (Paragraph 7.8), the 'X Distance' or visibility set-back from the edge of the main carriageway has been set at 2.4m, which is considered appropriate given the lightly-trafficked nature of the proposed access.

5.6 In line with that set out above, visibility splays of 2.4m x 120m have been shown on the proposed site access drawing and are included at **Appendix 7**. These splays can be delivered entirely within land within the developers control or within the highway boundary.

5.7 Turning heads will be provided at the end of cul-de-sacs in order that service vehicles can enter and leave all areas of the proposed development in a forward gear.

5.8 Pedestrian and cycle access will be via the proposed vehicular access onto Garstang Road. This provides a convenient and direct access to the bus stops and existing pedestrian and cycle routes along Garstang Road.

5.9 Since the proposals are in outline, the parking provision has not been considered in detail. The parking provision would however be derived at the reserved matters stage, which would be based on Preston City Council's latest parking standards applicable at the time.

6.0 FUTURE BASELINE CONDITIONS

Introduction

6.1 This chapter describes the future baseline traffic conditions on the local highway network in relation to traffic growth and committed development traffic flows.

Traffic Growth

6.2 In order to determine the impact of the development, it is proposed to undertake a junction capacity assessment of the proposed site access junction and the three roundabout junctions on the new Broughton Bypass during a 2024 scenario, requiring a factoring up of 2018 background traffic conditions.

6.3 As agreed with Highway Officers, a number of committed and potential future developments have been considered as part of the assessment of the critical junctions on the local highway network. As the amount of background traffic generated by these developments is greater than traffic growth in the five year analysis period adopted for this assessment, no additional traffic growth factors need to be applied to the background traffic flows. It has been accepted that the committed development included within the assessment accounts for all likely levels of traffic growth in the area over the assessment period. This approach is considered to be robust as a number of the developments were part occupied or complete when the 2018 survey was undertaken and therefore there may be an element of double counting within the assessment. Due to the complexities of confirming how much of each development was occupied when the surveys were undertaken the full development quantum for each scheme has been included for within the committed development traffic flows and therefore considers a worst case scenario.

6.4 Our future year assessment flows allowing for traffic growth are shown in the Traffic Flow Figures within **Appendix 2**.

Committed Development

6.5 The following committed developments have been considered in this TA and are considered to influence the A6 corridor and specifically Broughton Bypass:

Ribble Valley:

- 3/2014/0764 – East of Chipping Lane, Longridge – 363 dwellings

Preston:

- 6/2013/0785 – Former Ridings Depot – north / south of Whittingham Road, Longridge – 220 dwellings and 929sqm of offices (Class B1) and residential apartments with care (Class C2);
- 06/2017/0356 – Inglewhite Road, Longridge – 186 dwellings;
- 06/2016/1101 – Former Ridings Depot – Foodstore replacing offices permitted under 06/2013/0785;
- 06/2016/1039 – Goosnargh Lane, Goosnargh – 98 dwellings;
- 06/2015/0306 – Wainhomes, Barton – 72 dwellings;
- 06/2016/0736 – Bank Hall Farm, Broughton – 92 dwellings;
- 06/2015/0816 – Whittingham Lane, Broughton – 61 dwellings;
- 06/2017/0097 – Keyfold Farm, Broughton – 130 dwellings;
- 06/2017/0941 – 126A Whittingham Lane, Broughton – 101 dwellings
- 06/2018/0242 – Garstang Road, Broughton – 45 dwellings;
- 06/2018/0867 – Avonhurst, Barton – 29 dwellings;
- 06/2018/0884 – Bushells Farm – 140 dwellings;
- 06/2018/1042 – Land off Halfpenny Lane – 52 dwellings.

Wyre District:

- 15/00248 – Joe Lane – 200 dwellings;
- 16/00090 – Garstang Road, Myerscough – 26 dwellings;
- 15/00420 – Garstang Road, Bowgreave – 46 dwellings;
- 15/00891 – Garstang County Club – 995 dwellings;
- 15/00928 – Calder House Lane 49 dwellings;
- 16/00144 – Daniel Fold Farm 2 – 66 dwellings;
- 16/00241 – Nateby Crossing Lane – 269 dwellings;
- 14/00266 – Kepple Lane – 130 dwellings;
- 14/00681 – Daniel Fold Farm – 122 dwellings;
- 16/00625 – Garstang Road, Barton – 72 dwellings;
- 14/00053 – Utopia – 75 dwellings;
- 16/00955 – Tan Yard Road – 6000sqm industrial;
- 16/0807 – Shepherds Farm, Barton – 29 dwellings;
- 15/00040 – Bowgreave House Farm – 30 dwellings;
- 15/00072 – Avonhurst, Barton – 29 dwellings;
- 17/00579 – Dunollie, Kepple Lane – 50 dwellings.

6.6 The traffic flows from the above developments are shown in the Traffic Flow Figures within **Appendix 2**. Where possible vehicles have been distributed through the network as shown within each site's associated assessment. Where the network ends before entering the network adopted for this assessment, trips have been distributed through the network based on the agreed distribution proportions.

Future Baseline Traffic Flows

6.7 The 2024 future baseline traffic flows are the sum of the surveyed traffic flows plus the committed development flows and are shown in the Traffic Flow Figures within **Appendix 2.**

7.0 TRIP GENERATION AND ASSIGNMENT

Trip Generation

7.1 Vehicle trip rates during the AM and PM peak hours were used by LCC in the production of their Central Lancashire Highways and Transport Masterplan and are based on accepted trip rates for other developments along the A6 corridor.

7.2 Vehicle trip rates for the AM and PM peak hours based on the development of some 151 dwellings can be seen below in Table 7.1.

Table 7.1: Trip Rates and Generated Trips (151 dwellings)

	Trip Rate		Trips	
	Arrivals	Departures	Arrivals	Departures
AM	0.140	0.445	21	67
PM	0.437	0.226	66	34

Trip rates are per dwelling

7.3 As shown in Table 7.1, the proposed residential development could be expected to generate 88 two-way vehicle trips during a weekday morning peak hour and 100 two-way vehicle trips during a weekday evening peak hour. This equates to less than two additional vehicles per minute during the AM and PM peak hour, which when taking account of daily fluctuations in traffic flows on the highway network is considered negligible.

7.4 As stated above, this trip generation should be considered as robust as no reduction in trip generation has been applied to take account of affordable housing.

Distribution and Assignment

7.5 The vehicular trip distribution has been calculated based on the 2011 National Census data using the www.nomisweb.co.uk website for the official labour market statistics from the Office for National Statistics.

7.6 The development generated trips have been distributed on the local highway network based on NOMIS: Location of usual residence and place of work (OA level) for Preston 002 in which the site lies.

7.7 The data shows that some 9% of all vehicle journeys will arrive and depart the site via Garstang Road to the north and 91% of all vehicle journeys will arrive and depart to the south towards the M55, M6 and Preston.

7.8 A copy of the calculations based on the NOMIS data used to determine the development traffic distribution can be seen at **Appendix 8**.

7.9 A plan showing the assigned AM and PM peak hour traffic flows can be seen on the plans at **Appendix 2**.

8.0 JUNCTION CAPACITY ASSESSMENT

Introduction

8.1 This Chapter describes the impact of the additional trips generated by the proposed development on the operation of the local highway network. For the modelling assessment a development of 152 dwellings has been adopted which is considered robust. The study area for the TA includes the following junctions:

- Site Access / Garstang Road Priority T-Junction;
- Garstang Road (A6) / James Towers Way Roundabout;
- James Towers Way / Whittingham Lane Roundabout;
- James Towers Way / D'Urton Lane Roundabout;

Cardwell Farm Site Access

8.2 The proposed site access junction with Garstang Road has been assessed using the PICADY module within Junctions 9, the industry-standard software used for capacity assessment of priority junctions.

8.3 Table 8.1 summarises the PICADY assessment results for the 2024 Future Year plus Development scenario. As the proposed access will form a new junction, no further junction capacity scenarios have been considered. The full model output report can be found at **Appendix 3**.

Table 8.1 – Garstang Road / Site Access Junction Assessment

Arm	2022 Base + Development			
	AM Peak Period		PM Peak Period	
	RFC	Queue	RFC	Queue
Site Access	0.21	0	0.16	0
Garstang Road	0.04	0	0.16	0

8.4 The PICADY assessment results summarised in Table 8.1 demonstrate a maximum RFC (ratio of flow to capacity) of 0.21 predicted at the site access during the AM peak period. At an RFC of 0.85 the impacts of junction capacity exceedance can be observed, however it has been demonstrated that in 2024 the traffic impacts associated with the proposed development access on Garstang Road are significantly lower.

James Towers Way / Garstang Road Roundabout

8.5 The James Towers Way / Garstang Road roundabout to the north of the site on the new Broughton Bypass has been assessed using the ARCADY module within Junctions 9, the industry-standard software used for capacity assessment of priority junctions.

8.6 Table 8.2 summarises the ARCADY assessment results for the 2024 Future Year committed and the 2024 Future Year plus committed plus development scenario. The full model output report can be found at **Appendix 3**.

Table 8.2 – Garstang Road / James Towers Way Junction Assessment

Arm	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Base 2024 + Committed				
Farm Access	0.00	0	0.00	0
James Towers Way	0.57	1	0.77	3
Garstang Road South	0.22	0	0.33	1
Garstang Road North	0.83	5	0.86	6
Base 2024 + Committed + Development				
Farm Access	0.00	0	0.00	0
James Towers Way	0.58	1	0.82	5
Garstang Road South	0.22	0	0.35	1
Garstang Road North	0.87	6	0.88	7

8.7 The model outputs illustrate that the junction is forecast to operate within capacity on all approaches in the future year scenario with the addition of committed sites and the development with minimal queuing and delay with the exception of the Garstang Road approach which experiences a 30 minute period slightly above an RFC of 0.85 during both the AM and PM peak in the future year scenario and can be considered to be operating at 'practical' capacity on this approach. Queuing is minimal, can be contained on the highway link and the impact of the development is negligible on queuing and delay with an additional vehicle added to the queue in both the AM and PM peak period. Once a manoeuvre is operating at an RFC above 0.85 it becomes very sensitive to any increase in traffic, often providing excessive queuing results which do not correspond with the 'actual' additional traffic forecast through the junction itself.

Whittingham Lane / James Towers Way Roundabout

8.8 The Whittingham Lane / James Towers Way roundabout to the west of the site has been assessed using the ARCADY module within Junctions 9, the industry-standard software used for capacity assessment of priority junctions.

8.9 Table 8.3 summarises the ARCADY assessment results for the 2024 Future Year committed and the 2024 Future Year plus committed plus development scenario. The full model output report can be found at **Appendix 3**.

Table 8.3 – Whittingham Lane / James Towers Way Junction Assessment

Arm	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Base 2024 + Committed				
Whittingham Lane East	0.80	4	0.74	3
James Towers Way (A6) South	0.52	1	0.78	4
Whittingham Lane West	0.29	0	0.51	1
James Towers Way (A6) North	0.69	2	0.82	4
Base 2024 + Committed + Development				
Whittingham Lane East	0.82	5	0.75	3
James Towers Way (A6) South	0.53	1	0.80	4
Whittingham Lane West	0.29	0	0.54	1
James Towers Way (A6) North	0.73	3	0.84	5

8.10 The results indicate that the roundabout is capable of accommodating the anticipated future year traffic flows and operates within capacity. Impacts of the development proposals would be negligible with minimal increases in RFC's and forecast queue lengths.

James Towers Way / D'urton Lane Roundabout

8.11 The James Towers Way / D'Urton Lane roundabout to the south of the site on the new Broughton Bypass has been assessed using the ARCADY module within Junctions 9, the industry-standard software used for capacity assessment of priority junctions.

8.12 Table 8.4 summarises the ARCADY assessment results for the 2024 Future Year committed and the 2024 Future Year plus committed plus development scenario. The full model output report can be found at **Appendix 3**.

Table 8.4 –James Towers Way / D'Urton Lane Junction Assessment

Arm	AM		PM	
	RFC	Queue (PCU)	RFC	Queue (PCU)
Base 2024 + Committed				
James Towers Way (A6) North	0.82	5	0.76	3
D'Urton Lane	0.29	0	0.40	1
James Towers Way (A6) South	0.54	1	0.78	4
Base 2024 + Committed + Development				
James Towers Way (A6) North	0.84	5	0.78	4
D'Urton Lane	0.31	1	0.43	1
James Towers Way (A6) South	0.54	1	0.80	4

8.13 The outputs illustrate that the junction is expected to operate within capacity under forecast development flows.

Summary

8.14 Junction capacity assessments have been undertaken on junctions within the study network. The analysis has shown that all junctions will continue to operate within theoretical capacity for the Future Year development scenarios with minimal queuing and delay with the exception of Garstang Road North at the Garstang Road / James Towers Way roundabout to the north of Broughton Bypass.

8.15 Importantly the assessments have considered all potential future development which will impact upon the study area which has concluded that the network is capable of accommodating this level of development.

9.0 SUMMARY AND CONCLUSIONS

9.1 This report has considered the traffic and transport issues arising as a result of a proposed development of 151 dwellings on a site to the east of Garstang Road near Newsham.

9.2 The local highway network in the vicinity of the site has been described and it has been shown that the site is in a sustainable location, is well served by buses and has good access to a wide range of local facilities.

9.3 Vehicular and pedestrian access to the site will be taken off Garstang Road (A6) by means of a formalised ghost island priority junction. The priority junction will comprise 9m junction radii and a 6m wide road with a 3.4m wide right turn lane of approximately 50m in length. Footways of 2m in width will be provided along the both sides of the access road. As part of this arrangement the existing pedestrian refuge island will be removed and the existing right turn ghost island into The Sidings will be reduced to 50m in length. Since the proposals are for outline permission, the parking provision and internal layout has not been considered in detail. However this will be provided in accordance with the requirements of Preston City Council's latest parking standards.

9.4 Personal Injury Collision data for the most recent five year period from 2014 to 2019 does not indicate any inherent road safety issues associated with the existing layout of the roads in the vicinity of the site.

9.5 An assessment of the trips generated by the development has been undertaken. The development is predicted to generate some 88 and 100 two-way vehicle trips in the morning and evening peak hours respectively based on average trip rates.

9.6 Junction capacity assessment of the proposed site access and the three roundabouts on the Broughton Bypass have been undertaken in the 2024 Future Year using Junctions 9. This assessment has demonstrated that all junctions on the local highway network will operate within 'practical' capacity during 2024 with the addition of both committed development and the proposed development, without significant impact to existing traffic flows in the vicinity of the site with the exception of the Garstang Road north approach to the Garstang Road / James Towers Way roundabout. The impact of the development has been demonstrated to be negligible on this approach.

Conclusion

9.7 The proposed development is located in a sustainable location which is accessible on foot and by cycle and is also accessible by public transport.

9.1 It is considered that the volume of traffic generated by the scheme and its distribution is unlikely to be detrimental to the level road safety. Therefore, it is considered that the highway network operates safely in the vicinity of the site and will continue to do so with development in place.

9.2 It has demonstrated through this Transport Assessment that the highway impact of the development proposals is below the threshold set out in paragraph 32 of NPPF that "*development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe".*

9.3 It is therefore concluded that there are no justifiable traffic or highway related reasons the development should not be granted planning permission.