

**Gleeson Homes** 

# PROPOSED RESIDENTIAL DEVELOPMENT, LAND AT HOW BANK FARM, EGREMONT AND FORMER ORGILL SCHOOL, EGREMONT

**Transport Assessment** 

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## 1 INTRODUCTION

- 1.1.1 Vectos has been commissioned by Gleeson Homes to provide traffic and transportation advice to support a planning application for residential development on land at How Bank Farm and the former Orgill School in Egremont, Cumbria.
- 1.1.2 This Transport Assessment provides information on the traffic and transport planning aspects of the development proposals and forms supplementary information to assist in the determination of the planning application.

#### 1.2 Site Locations

- 1.2.1 The planning application relates to the redevelopment of two sites in Egremont. Both sites lie to the west of Egremont town centre, with the How Bank Farm site lying approximately 150 metres to the south west of the former Orgill School site.
- 1.2.2 The strategic location of the two sites is shown in **Plan 1**, with **Plan 2** showing the sites in a more local context. An aerial view of the site location is shown in **Figure 1.1**.



Figure 1.1: Aerial View of Site Location

#### 1.3 Proposed Development

1.3.1 The detailed planning application will cover both sites with the How Bank Farm site providing 90 dwellings and the former Orgill School providing a further 15 dwellings. As such, the planning application will propose a total of 105 units.



- 1.3.2 Access to the How Bank Farm site is proposed from Baybarrow Road with access to the Orgill School site proposed from Chaucer Avenue and Croadalla Avenue.
- 1.3.3 The proposed site layout for both sites is shown in **Plan 3**. This plan also shows the application red line boundary.

#### 1.4 Scope of Report

- 1.4.1 This Transport Assessment has been prepared in accordance with guidance provided by the Department for Transport's (DfT) *'Travel Plans, Transport Assessment and Statements'* (2014) document, as well as paying due notice to the DfT's now superseded 'Guidance on Transport Assessments' document. The scope of the report has also been discussed with highway officers from Cumbria County Council and pays due regard to the County Council's Development Design Guide.
- 1.4.2 Following this introduction, the report provides the following information:
  - Section 2 A review of pertinent national planning policy guidance;
  - Section 3 A review of baseline conditions;
  - Section 4 A review of the accessibility of the site by sustainable modes;
  - Section 5 A description of the development proposals;
  - Section 6 Provides a summary of the traffic generation forecasts and trip distribution for both site;
  - Section 7 Provides a review of the impact of the development proposals on the local highway network; and
  - Section 8 Report summary and conclusions.



## 2 TRANSPORT PLANNING CONSIDERATIONS

- 2.1 Introduction
- 2.1.1 Section 2 of this report considers the national planning policy guidance which is pertinent in the context of the development proposals.

#### 2.2 National Planning Policy

- 2.2.1 The main source of national policy regarding the transport planning aspects development can be found in the Department of Communities and Local Government 'National Planning Policy Framework' which was published in February 2019. This replaces the previous versions published in March 2012 and July 2018.
- 2.2.2 At the heart of the Framework is a presumption in favour of sustainable development. In accordance with national policy, it is considered that the development constitutes a sustainable form of development within walking and cycling distance of local residential development and public transport links.
- 2.2.3 As part of promoting sustainable transport, paragraph 108 of the revised NPPF states that in assessing 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; and
  - c) 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.
- 2.2.4 Paragraph 109 goes on to state 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'.



## **3** BASELINE CONDITIONS

#### 3.1 Introduction

3.1.1 Section 3 of this report provides a review of the baseline conditions in the vicinity of the sites, including a description of the location of the site and existing highway network, a review of personal injury accident data.

#### 3.2 Existing Site Location

- 3.2.1 The proposed development sites are located approximately 800 metres to the west and northwest of Egremont town centre.
- 3.2.2 The areas surrounding the sites are predominantly residential in nature, with areas of open space located to the north and west of both sites.
- 3.2.3 Of the two sites the How Bank Farm site is currently undeveloped open space, with no vehicle access currently available to the land within the application red line. The northern of the two sites previously accommodated Orgill School, with vehicle access provided from Chaucer Avenue. The Orgill School site has also been cleared of all built development, although a dropped kerb provision remains on Chaucer Avenue.

#### 3.3 Surrounding Highway Network

- 3.3.1 The sites are located within an intricately connected road network, which provide a multitude of route choices for local residents.
- 3.3.2 The main site access for the How Bank Farm site will be taken from Baybarrow Road with access for the former Orgill School site taken from Chaucer Avenue and Croadalla Avenue.
- 3.3.3 The highway network in the vicinity of the sites is illustrated in **Figure 3.1** below and described in the following paragraphs.





Figure 3.1: Surrounding Highway Network

- 3.3.4 Chaucer Avenue forms the northern boundary of the Orgill School site. Chaucer Avenue is a 5.5-metrewide single carriageway road subject to a 30-mph speed restriction and provides a footway along the southern boundary of the carriageway. Chaucer Avenue provides connections to a small residential development to the west of the Orgill School site and does not serve as a through route for traffic.
- 3.3.5 In the northeast corner of the site Chaucer Road forms the minor arm of a priority-controlled junction with Croadalla Avenue/Smithfield Road.
- 3.3.6 Croadalla Avenue provides north/south connections from Chaucer Avenue and Smithfield Road to Southey Walk and Park View. Croadalla Avenue is a 7-metre-wide single carriageway road with 2metre-wide footways and street lighting provided along both sides of the carriageway. Croadalla Avenue is residential in nature with residential dwellings located along both sides of the carriageway and is subject to a 30-mph speed restriction.
- 3.3.7 At its northern end Croadalla Avenue rounds a bend and becomes Smithfield Road. From this point Smithfield Road continues in an east-west alignment and provides connections to an extensive residential area, before being renamed Howbank Road and ultimately providing connections to the A595.

3.3.8 At its southern end, Croadalla Avenue forms priority-controlled junctions with St Bridgett's Lane to the east and Southey Avenue to the west, before being renamed Park View. Park View then provides access to further residential areas before terminating at a priority-controlled junction with Grove Road. Grove Road then provides access towards Egremont town centre to the east and towards St Bees to the west.

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- 3.3.9 Baybarrow Road borders the How Bank Farm site. It provides a circa 7 metre carriageway and is subject to a 30-mph speed limit. To the west of the site Baybarrow Road provides access to residential areas, before terminating at a priority junction with Ashlea Road. Ashlea Road then connects with Grove Road to the south.
- 3.3.10 To the east of the How Bank Farm site Baybarrow Road firstly forms a priority-controlled junction with Goldsmith Road, which provides a further route to Grove Road, before being renamed Southey Avenue. Southey Avenue then terminates at the aforementioned junction with Croadalla Avenue.
- 3.3.11 From this junction connections are then provided to St Bridgett's Avenue. This residential road extends to the east, before rounding a bend at which point it is renamed Nelson Square. Nelson Square then forms a roundabout junction with Central Avenue and Tower View from which connections are available to Castle Villas. Castle Villas connects to Queens Drive to the south while to the north it leads into Egremont town centre and Main Street.
- 3.3.12 Main Street provides access to the majority of retail premises, general amenities, and food/drink establishments within Egremont. There are a range of retail establishments and services including food retail, general retail, pharmacy, and post office along with food and drink venue.
- 3.3.13 From the Castle Villas junction, the northern Main Street arm provides connections to Whitehaven and Workington via the A595, while to the south Main Street connects with 72 and then Vale View, which provide an alternative route to the A595 and to Sellafield to the south.

#### 3.4 Road Safety Review

3.4.1 A review of accident records for the highway network in the direct vicinity of the site has been undertaken using data available on the Crashmap website. Crashmap uses data collected by the police about road traffic crashes occurring on British roads where someone is injured. This data is approved by the National Statistics Authority and reported on by the Department for Transport each year.



3.4.2 The Crashmap analysis has been undertaken for the 5-year period between 2015 and 2019 and is summarised in **Figure 3.2**.



Figure 3.2: Accident Data (Source: Crashmap.co.uk)

- 3.4.3 As can be seen from **Figure 3.2**, the Crashmap data reveals that there have been no traffic collisions recorded on Baybarrow Road/Southey Walk near the How Bank Farm site. Likewise, there have been no incidents recorded on Croadalla Avenue, Chaucer Avenue or Smithfield Road in the vicinity of the former Orgill School site.
- 3.4.4 There has been one recorded incident on Smithfield Road to the east of the Orgill School site at the Smithfield Road/Gillfoot Road junction. This incident has been recorded as slight.
- 3.4.5 It can therefore be concluded that there are no accident blackspots on the highway network in the vicinity of the proposed development site.



### 4 ACCESSIBILITY BY SUSTAINABLE TRAVEL MODES

#### 4.1 Introduction

- 4.1.1 The 'Promoting Sustainable Transport' section of the National Planning Policy Framework states that opportunities to promote walking, cycling and public transport use should be identified and pursued.
- 4.1.2 This section of the report therefore considers the accessibility of the site by the following modes of transport:
  - Accessibility on foot;
  - Accessibility by cycle;
  - Accessibility by public transport.

#### 4.2 Pedestrian Accessibility

- 4.2.1 The Institution of Highways and Transportation (IHT) document 'Guidelines for Providing for Journeys on Foot' (2000) contains suggested acceptable walking distances for pedestrians without mobility impairment for some common facilities. The guidelines suggest that an acceptable walking distance for commuting/school purposes is 1 kilometre, with a preferred maximum distance of 2 kilometres. Walking can also be promoted as part of a multi-modal journey, particularly with public transport.
- 4.2.2 The more recent CIHT document 'Planning for Walking' (2015) affirms this by stating that 80% of journeys shorter than a mile (approximately 1.6 kilometres) are made wholly on foot.
- 4.2.3 An analysis of the pedestrian catchment of the site has been completed to illustrate the site's 2kilometre walking catchment which represents a journey of approximately 25 minutes. This is defined as a preferred maximum for trips carried out on foot by the Chartered Institution of Highways and Transportation (CIHT) document, entitled 'Guidelines for Providing for Journeys on Foot'.
- 4.2.4 The pedestrian catchment plan for the sites is shown on **Plan 4**, with the How Bank Farm site catchment in yellow and the Orgill School site catchment in blue. This demonstrates that the majority of Egremont, including the whole of the town centre is within the pedestrian catchment of the two sites.

4.2.5 Within Egremont town centre Main Street provides a wide range of day-to-day amenities including a supermarket, post office, cash machine, GP surgery, pharmacy, and dentist. The location of the key local facilities is shown in **Plan 5**. This plan also highlights the location of a number of amenities on Southey Avenue which are in closer proximity to the sites. These include a primary school, convenience store and take-away, which are approximately 250 metres from both sites.

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- 4.2.6 In addition to these retail and civic amenities, there are industrial and employment land uses on the outskirts of the town which provide further employment opportunities to those provided in the town centre.
- 4.2.7 To support pedestrian trips street lit footways are provided along all roads in the vicinity of the sites. These are supported by dropped kerbs and tactile paving on the key pedestrian desire lines. A hard surfaced, street lit, public footpath is also located along the southern boundary of the How Bank Farm site and along the western boundary of the Orgill School site.
- 4.2.8 This pedestrian infrastructure provides safe connections from the sites to the surrounding education establishments and retail amenities, as well as connections to Egremont town centre. Within the centre of Egremont wide street lit footways are provided along both sides of Main Street, with signalised pedestrian crossing facilities also provided.
- 4.2.9 It is therefore concluded that the pedestrian facilities in the vicinity of the sites provide an excellent opportunity for trips to be undertaken on foot, with a number of local amenities conveniently located.

#### 4.3 Accessibility by Cycle

- 4.3.1 Cycling is becoming an increasingly popular mode of transport and is an effective mode for short trips.
  The DfT's Local Transport Note 2/08 'Cycle Infrastructure Design' (2008) states that many utility cycle journeys are under 3 miles (approximately 5 kilometres) although for commuters a trip distance of over 5 miles is not uncommon.
- 4.3.2 Consequently, cycling has the potential to replace short car journeys, particularly those under 5 kilometres. At a leisurely cycle speed of 10 miles per hour this would equate to a journey of around 25 minutes.



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- 4.3.4 The 5-kilometre cycle catchment covers the whole of Egremont, in addition to a number of villages in the surrounding area, including Thornhill, Bigrigg and Cleator, along with St Bees. The significant employment site of Sellafield is approximately 7.5 kilometres from the site which is not an unreasonable cycle journey from Egremont.
- 4.3.5 To support trips by bicycle National cycle route 72 runs through the centre of Egremont. This route provides a connected on-road and traffic free cycle route running from Kendal along the Cumbrian coast to Barrow-in-Furness, Whitehaven and Silloth.
- 4.3.6 The site is therefore concluded to be accessible by bicycle.

#### 4.4 Accessibility by Public Transport

#### Access by Bus

- 4.4.1 The closest bus stops to the site are located on Egremont Bypass and Main Street as shown on Plan 4.
  These stops are approximately 600 metres walking distance from the Orgill School site, and around 900 metres walking distance from How Bank Farm site.
- 4.4.2 While these walking distance is slightly further than typically desirable, the potential for residents to consider these bus services as a viable travel option does reflect recent NPPF guidance, which at Paragraph 103 states that "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".
- 4.4.3 On the basis of this guidance, the bus stops on are considered accessible from the proposed development sites.
- 4.4.4 **Table 4.1** provides a summary of the bus services and frequencies that operate along Main Street and Egremont Bypass.



			Monday				
Service	Route	AM Peak	Daytime	PM Peak	Evening	Sat	Sun
30	Maryport - Whitehaven - Egremont - Thornhill	2	2	2	1	2	1
X30	Whitehaven - Egremont	-	1	-	-	1	-

Table 4.1: Bus Services to/from Egremont

- 4.4.5 As can be seen from **Table 4.1**, the route 30 provides a service to key destinations such as Whitehaven and Workington throughout the day at weekends.
- 4.4.6 In addition to public bus services, there are also some dedicated services operated for employees of the Sellafield site, which is a significant local employer. Services include the following:
  - A shuttle service from the company's Whitehaven offices and the Sellafield site, via Egremont. This runs every 15 minutes between 8am and 4pm, with very limited services before and after these times. This service stops at the car park on Chapel Street in the centre of Egremont town centre.
  - A park and ride service from the Moresby Parks park and ride (to the east of Whitehaven), via Cleator Moor and Egremont to the Sellafield site. This provides 9 services between 06:15 and 09:15 in the morning and 11 return services between 11:15 and 5:20pm.
- 4.4.7 The proposed development site is therefore concluded to be accessible by public transport.

#### Access by National Rail

4.4.8 As shown in **Plan 6,** St Bees National Railway Station is within a 5km cycle of the site. St Bees is managed by Northern Trains with a local stopping service operating between Barrow-In-Furness and Carlisle. Stops along this route include Millom, Sellafield, and Whitehaven. Services operate on an hourly frequency in both directions Monday to Sunday with earlier and later trains operating during the week and on Saturdays.



#### 4.5 Summary

4.5.1 Overall, the review of the site has identified that it is in a sustainable location and therefore is ideally placed to be able to positively promote and encourage trips by walking, cycling or public transport, rather than being reliant on the private car. The site's sustainable location is enhanced by virtue of its proximity to a range of day-to-day amenities, including those located in Egremont town centre.



### 5 DEVELOPMENT PROPOSALS

#### 5.1 Introduction

5.1.1 This report considers the development proposals for both the How Bank Farm and former Orgill School sites and outlines the access strategy for both sites.

#### 5.2 Proposed Development

- 5.2.1 The planning application relates to the redevelopment of two sites in Egremont, with the How Bank Farm site lying approximately 150 metre to the southwest of the former Orgill School site.
- 5.2.2 The proposed site layout for both sites is shown in **Plan 3**.
- 5.2.3 It is proposed that the How Bank Farm site provide a total of 90 dwellings comprising:
  - 14 x 2-bedroom dwellings;
  - 54 x 3-bedroom dwellings; and
  - 22 x 4-bedroom dwellings.
- 5.2.4 Meanwhile, the former Orgill School site will provide a total of 15 dwellings comprising:
  - 2 x 2-bedroom dwellings;
  - 11 x 3-bedroom dwellings; and
  - 2 x 4-bedroom dwellings.

#### 5.3 Internal Site Layout

#### <u>How Bank Farm Site</u>

- 5.3.1 The proposed internal road network has been designed in accordance with Cumbria County Council's Development Design Guide. The internal access road provides a width of 5.5 metres, with 2 metre footways provided.
- 5.3.2 The internal road network has been designed to encourage low vehicle speeds, thus creating a pedestrian and cycle friendly environment. The proposed layout features a short section of 'shared surface' for access to some of the properties in the centre of the site.



#### Former Orgill School Site

- 5.3.3 The proposed internal road network has been designed in accordance with Cumbria County Council's Development Design Guide. The internal road network has been designed to encourage low vehicle speeds, thus creating a pedestrian and cycle friendly environment.
- 5.3.4 The proposed layout features a short section of 'shared surface' for access to the properties within the site. This road will be designed as shared private driveways and will be 4.2 metres wide. The road will provide access to the parking associated with six residential dwellings. There will be nine dwelling fronting either Chaucer Avenue or Croadalla Avenue with driveways and footways providing direct access to these roads.

#### 5.4 Parking

- 5.4.1 Each proposed residential dwelling within the How Barn Farm site will provide off-street car parking provision on private driveways, with a minimum of two parking spaces per dwelling. Likewise the former Orgill School site will also provide a minimum of two parking spaces per dwelling, which will either be located on private driveways, or in the case of properties 91 to 96, located in front of, or adjacent to, the houses.
- 5.4.2 In addition the How Bank Farm site will provide 33 visitor car parking spaces, while the former Orgill School site will provide 6 visitor spaces.

#### 5.5 Vehicle Access

#### <u> Access – How Bank Farm</u>

- 5.5.1 Vehicle access to the site is proposed from a priority-controlled junction with Baybarrow Road. This access will be designed to adoptable standards in line with Cumbria County Council's Development Design Guide.
- 5.5.2 The junction provides visibility splays of 2.4 m x 43m as are appropriate for a 30mph based upon Cumbria County Council/ Manual for Streets guidance. This is illustrated in **Plan 7**.
- 5.5.3 The proposed internal layout has been tracked using an 11.2 metre refuse vehicle. This assessment demonstrates that all required vehicle movements can be safely undertaken.



5.5.4 Refuse collection vehicles are able to stop within approximately 30 metres of all properties. This meets the guidelines set by Cumbria County Council/ Manual for Streets guidance on the maximum distance that residents can transport waste for collection.

#### Access – Former Orgill School

- 5.5.5 Vehicle access to the dwellings on the former Orgill School site is proposed from a number of locations. Four dwellings will have driveways providing direct access onto Chaucer Avenue, with five dwellings having driveways that provide direct access onto Croadalla Avenue. In addition six dwellings will be accessed off Croadalla Avenue by way of a shared surface street.
- 5.5.6 Refuse vehicles will not enter the site with collections occurring on-street in a similar manner to the existing residential dwellings on Chaucer Avenue and Croadalla Avenue.

#### 5.6 Travel Plan

5.6.1 To promote resident's travel by sustainable means a Travel Plan is proposed. A Framework Travel Plan has been prepared to accompany the planning application, which provides a 'heads a terms' for a full Travel Plan to be prepared once the development is constructed. The Framework document is provided in **Appendix A**.



### 6 TRAFFIC IMPACT ASSESSMENT

#### 6.1 Introduction

- 6.1.1 This section of the report provides a traffic impact assessment of the development proposals.
- 6.1.2 It is noted that the traffic impact has been prepared on the basis of 97 dwellings being developed on the How Bank Farm site, and 15 dwellings being developed on the Former Orgill School site. The current layout plan now proposes a reduced quantum of units on both sites, and as such the traffic impact assessment represents a robust and worst case analysis.

#### 6.2 Traffic Generation

- 6.2.1 To understand the potential traffic generation of the proposed development reference has been made to the TRICS database version 7.7.2 for the 'Residential – Houses Privately owned' range of sites. The assessment has focussed upon sites in comparable locations and of a similar scale.
- 6.2.2 **Table 6.1** summarises the traffic generation of the proposed development for typical network AM and PM peak hours, with the full TRICS report provided at **Appendix B.**

Time	Trip Rate		How Bank Farm Site Trips (97 dwellings)			Former Orgill School Site Trips (17 dwellings)		
	Arr	Dep	Arr	Dep	2 Way	Arr	Dep	2 Way
08:00-09:00	0.179	0.351	17	34	51	3	6	9
17:00-18:00	0.340	0.141	33	14	47	6	2	8

Table 6.1: Trip Rates and Trip Generation

- 6.2.3 As can be seen from **Table 6.1**, the development on the How Bank Farm site is forecast to generate 51 two-way trips during the AM peak period and 47 two-way trips during the PM peak hours.
- 6.2.4 Meanwhile the development on the former Orgill School site is forecast to generate 9 two-way trips during the AM peak period and 8 two-way trips during the PM peak period.

#### 6.3 Traffic Impact Assessment

6.3.1 Given the level of traffic flows generated by the How Bank Farm site a capacity assessment has been undertaken of the proposed site access junction with Baybarrow Road, along with a consideration of the impact of development traffic on the wider highway network.



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#### 6.4 Baseline Traffic Flows

- 6.4.1 During scoping discussions with Cumbria County Council, it was confirmed that traffic flows had increased sufficiently following the COVID-19 lockdown to allow traffic surveys to resume.
- 6.4.2 Therefore, to determine baseline traffic flows on Baybarrow Road passing the proposed site access a traffic survey was undertaken on Thursday 10<sup>th</sup> September 2020 during the weekday AM and PM peak hours. The raw survey data is included in **Appendix C**.
- 6.4.3 The traffic surveys revealed that the AM peak hour occurred between 08:00 09:00 with the PM peak hour occurring between 17:00 18:00.
- 6.4.4 **Figure 6.1** provides a summary of the baseline traffic flows.

#### 6.5 Assessment Scenarios

6.5.1 In order to consider the impact of the development in a future year scenario the baseline traffic flows have been growthed to a 2025 future year scenario. This represents a period 5-year post planning application submission. **Table 6.2** provides a summary of TEMPro derived AM and PM growth factors for the Copeland 006 Middle Super Output Area.

	2020 – 2025 Growth Factors
AM Peak Period	1.0538
PM Peak Period	1.0373

#### Table 6.2: 2025 Growth Factor

6.5.2 The 2020 baseline traffic surveys have been growthed using these factors. The resultant 2025 baseline traffic flows are presented in **Figure 6.2**.

#### 6.6 Committed Developments

6.6.1 No committed developments were identified during scoping discussions with Cumbria County Council highway officers.



#### 6.7 Development Trip Distribution and Assignment

6.7.1 The baseline traffic surveys on Baybarrow Road were used to calculate a trip distribution for the proposed development on How Bank Farm. This distribution is presented in **Table 6.3**.

	AM Peak Period	PM Peak Period
Left onto Southey Walk	66%	57%
<b>Right onto Baybarrow Road</b>	34%	43%
<b>Right from Southey Walk</b>	66%	57%
Left from Baybarrow Road	34%	43%

Table 6.3: How Bank Farm Site Trip Distribution

- 6.7.2 The How Bank Farm traffic flows presented in **Table 6.1** have then been assigned to the proposed site access junction based upon these turning proportions.
- 6.7.3 The resultant development traffic flows are presented in **Figure 6.3**.

#### 6.8 2025 Baseline with Development Traffic Flows

6.8.1 The proposed development traffic flows have been added to the 2025 Baseline flows to generate the 2025 Baseline with Development traffic flows. These are presented in Figure 6.4.

#### 6.9 Capacity Assessments

6.9.1 The proposed How Bank Farm site access junction with Baybarrow Road, as illustrated in **Plan 7**, has been capacity tested using the JUNCTIONS 8 modelling software. A summary of the results of this assessment are presented in **Table 6.4** with the full model output provided at **Appendix D.** 

Link	AM Peak		PM Peak	
	RFC	Queue (PCUs)	RFC	Queue (PCUs)
Site Access – Left and Right	0.06	0.07	0.03	0.03
Baybarrow Road (NE) – Right	0.02	0.02	0.04	0.04

Table 6.4: Site Access/Baybarrow Road/Southey Walk Junction Assessment

6.9.2 **Table 6.4** highlights that the proposed site access junction is forecast to operate significantly within capacity and without queuing.



#### 6.10 Impact of the Development on the Wider Highway Network

- 6.10.1 As described in Section 3.3 the proposed developments are located within an intricate network of residential streets. This means that residents on both development sites will benefit from a variety of route choices when travelling to or from the site.
- 6.10.2 Traffic arriving or departing the How Bank Farm site to the west will likely route via Ashlea Road. Based upon the calculated distribution profile a maximum of 20 two-way vehicle trips are forecast to arrive/ depart from the west in the PM peak hour. This equates to an additional vehicle every 3 minutes. Such an increase in traffic flow will not alter the character or safety of this route, nor would it materially alter the operation of the Ashlea Road/ Grange Road junction.
- 6.10.3 The traffic distribution forecasts that a maximum of 23 vehicles will depart the site to the east in the AM peak hour, with 12 travelling in the opposite direction. Vehicles travelling in this direction have the choice of a variety of routes, for example Goldsmiths Road or Park View to access Grange Road, Croadalla Avenue to travel north to the A595, or St Bridgett's Lane to travel towards Egremont town centre. Assuming an evening split between the four routes this would equate to around 8 additional two-way vehicle trips per hour on each route, or an additional vehicle trip every 7.5 minutes. Clearly additional routes are available for this increase in traffic flow may be further diluted. Such changes in traffic flow will not materially alter the safe or efficient operation of the surrounding highway network.
- 6.10.4 It is therefore concluded that the variety of route options in the direct vicinity of the site would mean that new vehicle movements are unlikely to be concentrated on any single section of highway or junction. For this reason, the proposed development is would not be expected to have a material impact upon the operation of the surrounding highway network.

#### 6.11 Summary

6.11.1 As highlighted, changes in traffic flow of this scale will have no material impact upon the safe and efficient operation of the surrounding highway network, and the proposed access onto Baybarrow Road is forecast to operate well within capacity. It is therefore concluded that the proposed development should be acceptable in traffic impact terms.



## 7 SUMMARY AND CONCLUSIONS

#### 7.1 Introduction

- 7.1.1 Vectos has been commissioned by Gleeson Homes to provide traffic and transportation advice to support a planning application to for residential development on land at How Bank Farm and the ormer Orgill School in Egremont, Cumbria.
- 7.1.2 The planning application proposes the development of 90 dwellings on the How Bank Farm site, with15 dwellings proposed on the former Orgill School site.
- 7.1.3 Access for the How Bank Farm site will be from Baybarrow Road with access for the Orgill School site taken from Chaucer Avenue and Croadalla Avenue.
- 7.1.4 This Transport Assessment has been prepared in accordance with recognised guidance and following pre-application discussions with the highway authority, Cumbria County Council. The report draws the following conclusions:
  - In accordance with planning policy guidance, which promotes sustainable development, the site has been demonstrated to be accessible on foot, by bicycle and by public transport;
  - The applicant has also proposed to adopt a Travel Plan to encourage resident's travel by sustainable means;
  - A review of historical collision data has demonstrated that there are no existing accident blackspots in the vicinity of the site. Based upon the findings of the trip generation analysis it has been concluded that there is no reason to believe highway safety would be worsened as a result of the development proposals;
  - The design of the internal site layouts, and site access junctions with Baybarrow Road, Chaucer Avenue and Croadalla Avenue, accord with Cumbria County Council's design guide;
  - A robust traffic impact assessment has demonstrated that the proposed How Bank Farm access onto Baybarrow Road would operate within capacity, and development would have no material impact upon the safe and efficient operation of the surrounding highway network;
  - Residents car parking is provided in accordance with the highway authority's adopted standards, while visitors are able to safely park on-street; and
  - The sites can be safely serviced using an 11.2 metre refuse vehicle.



#### 7.2 Transport Assessment Conclusions

- 7.2.1 The development site is in a sustainable location, would not have a detrimental impact upon either the operation or safety of the local highway network, provides an appropriate quantum of car parking, and can be safely serviced.
- 7.2.2 The National Planning Policy Framework 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".
- 7.2.3 This report has demonstrated that the proposed development would have no impact upon highway safety and that the residual cumulative impacts of the proposed development would not be severe. Therefore, in accordance with NPPF guidance there are no reasons why the planning application should be refused on highway or transportation grounds.



**PLANS** 









Legend  $\bigstar$ 

~

A

Former Orgil School SIte Location How Bank Farm Site Location

PLAN 4

Bus Stop

Primary School

Secondary School

GP Surgery

Dentist

Newsagent/Post Office

**Convience Store** 

Supermarket

Pharmacy

Mobile Bank

Cash Machine/ATM

Public Right of Way

Former Orgill School 2km Walking Catchment How Bank Farm 2km Walking Catchment

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CLIENT:

## **Gleeson Homes**

PROJECT TITLE

Land at How Bank Farm and Former Orgill School, Egremont

DRAWING TITLE

## **Pedestrian Walking** Catchment

N.T.S DRAWN: HECKED TA RW Sep. 2020



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# **FIGURES**










# **APPENDICES**



# **APPENDIX A**

Framework Travel Plan



**Gleeson Homes** 

# PROPOSED RESIDENTIAL DEVELOPMENT, LAND AT HOW BANK FARM, EGREMONT AND FORMER ORGILL SCHOOL, EGREMONT

**Interim Travel Plan** 

VN201725

November 2022

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### **REPORT CONTROL**

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### PLANS

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Plan 4	Pedestrian Catchment Plan
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Interim Travel Plan



### 1 INTRODUCTION

### 1.1 Background

- 1.1.1 Vectos has been commissioned by Gleeson Homes to provide traffic and transportation advice to support a planning application to develop land at How Bank Farm and the former Orgill School in Egremont, Cumbria.
- 1.1.2 This Transport Statement provides information on the traffic and transport planning aspects of the development proposals and forms supplementary information to assist in the determination of the planning application.
- 1.1.3 The planning application relates to the redevelopment of two sites in Egremont. Both sites lie to the west of Egremont town centre, with the How Bank Farm site lying approximately 150 metres to the south west of the former Orgill School site.
- 1.1.4 The strategic location of the two sites is shown in **Plan 1**, with **Plan 2** showing the sites in a more local context.
- 1.1.5 The detailed planning application will cover both sites with the How Bank Farm site providing 90 dwellings and the former Orgill School providing a further 15 dwellings. As such, the planning application will propose a total of 105 units. Access to the How Bank Farm site is proposed from Baybarrow Road with access to the Orgill School site proposed from Chaucer Avenue and Croadalla Avenue.
- 1.1.6 The proposed site layout for both sites is shown in **Plan 3**. This plan also shows the application red line boundary.
- 1.1.7 A Transport Assessment (TA) has also been prepared to support the planning application which provides a detailed description of the development proposals for the site. This Framework Travel Plan should be read in conjunction with the TA.

### 1.2 Travel Plan Objectives

1.2.1 This Travel Plan is intended to form the basis of a long-term strategy for reducing dependence on travel by private car. It reflects the following transport objectives:

- Reduce reliance on single occupancy car journeys;
- Promote alternative modes of travel to the car;
- Advocate means of travel that are beneficial to the health of those living at or visiting the site;

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- Minimise car travel in the area surrounding the site, cutting down on associated costs (environmental, financial, health, etc.); and
- Contain parking demand.
- 1.2.2 In addition, it is envisaged that there are likely to be a number of benefits to the local community which can be achieved through encouraging the use of sustainable transport. These include:
  - Improved air quality and less noise, dirt and fumes;
  - Walking and cycling can provide daily exercise and thus improve/maintain health; and
  - Increasing the modal shift from private motor vehicle to sustainable modes of transport can help reduce congestion on the local and national road network.

### 1.3 Report Detail

- 1.3.1 This Framework Travel Plan (FTP) has been prepared, to consider travel to and from the Site for residents and outlines a number of suggested initiatives and measures that will allow sustainable modes of travel to be positively promoted, and includes the following information:
  - Context of the Site;
  - Travel Plan Initiatives;
  - Travel Plan Administration, Monitoring and Review; and
  - Action Plan.



### 2 LOCAL CONTEXT

- 2.1 Site Location
- 2.1.1 The proposed development sites are located approximately 800 metres to the west and northwest of Egremont town centre.
- 2.1.2 The areas surrounding the sites are predominantly residential in nature, with areas of open space located to the north and west of both sites.
- 2.1.3 Of the two sites the How Bank Farm site is currently undeveloped open space, with no vehicle access currently available to the land within the application red line. The northern of the two sites previously accommodated Orgill School, with vehicle access provided from Chaucer Avenue. The Orgill School site has also been cleared of all built development, although a dropped kerb provision remains on Chaucer Avenue.

### 2.2 Surrounding Highway Network

- 2.2.1 The sites are located within an intricately connected road network, which provide a multitude of route choices for local residents.
- 2.2.2 The main site access for the How Bank Farm site will be taken from Baybarrow Road with access for the former Orgill School site taken from Chaucer Avenue and Croadalla Avenue.
- 2.2.3 The highway network in the vicinity of the sites is illustrated in **Figure 2.1** below and described in the following paragraphs.





Figure 2.1: Surrounding Highway Network

- 2.2.4 Chaucer Avenue forms the northern boundary of the Orgill School site. Chaucer Avenue is a 5.5metre-wide single carriageway road subject to a 30-mph speed restriction and provides a footway along the southern boundary of the carriageway. Chaucer Avenue provides connections to a small residential development to the west of the Orgill School site and does not serve as a through route for traffic.
- 2.2.5 In the northeast corner of the site Chaucer Road forms the minor arm of a priority-controlled junction with Croadalla Avenue/Smithfield Road.
- 2.2.6 Croadalla Avenue provides north/south connections from Chaucer Avenue and Smithfield Road to Southey Walk and Park View. Croadalla Avenue is a 7-metre-wide single carriageway road with 2metre-wide footways and street lighting provided along both sides of the carriageway. Croadalla Avenue is residential in nature with residential dwellings located along both sides of the carriageway and is subject to a 30-mph speed restriction.
- 2.2.7 At its northern end Croadalla Avenue rounds a bend and becomes Smithfield Road. From this point Smithfield Road continues in an east-west alignment and provides connections to an extensive residential area, before being renamed Howbank Road and ultimately providing connections to the A595.



- 2.2.9 Baybarrow Road borders the How Bank Farm site. It provides a circa 7 metre carriageway and is subject to a 30-mph speed limit. To the west of the site Baybarrow Road provides access to residential areas, before terminating at a priority junction with Ashlea Road. Ashlea Road then connects with Grove Road to the south.
- 2.2.10 To the east of the How Bank Farm site Baybarrow Road firstly forms a priority-controlled junction with Goldsmith Road, which provides a further route to Grove Road, before being renamed Southey Avenue. Southey Avenue then terminates at the aforementioned junction with Croadalla Avenue.
- 2.2.11 From this junction connections are then provided to St Bridgett's Avenue. This residential road extends to the east, before rounding a bend at which point it is renamed Nelson Square. Nelson Square then forms a roundabout junction with Central Avenue and Tower View from which connections are available to Castle Villas. Castle Villas connects to Queens Drive to the south while to the north it leads into Egremont town centre and Main Street.
- 2.2.12 Main Street provides access to the majority of retail premises, general amenities, and food/drink establishments within Egremont. There are a range of retail establishments and services including food retail, general retail, pharmacy, and post office along with food and drink venue.
- 2.2.13 From the Castle Villas junction, the northern Main Street arm provides connections to Whitehaven and Workington via the A595, while to the south Main Street connects with 72 and then Vale View, which provide an alternative route to the A595 and to Sellafield to the south.

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#### 2.3 Pedestrian Accessibility

- 2.3.1 The Institution of Highways and Transportation (IHT) document 'Guidelines for Providing for Journeys on Foot' (2000) contains suggested acceptable walking distances for pedestrians without mobility impairment for some common facilities. The guidelines suggest that an acceptable walking distance for commuting/school purposes is 1 kilometre, with a preferred maximum distance of 2 kilometres. Walking can also be promoted as part of a multi-modal journey, particularly with public transport.
- 2.3.2 The more recent CIHT document 'Planning for Walking' (2015) affirms this by stating that 80% of journeys shorter than a mile (approximately 1.6 kilometres) are made wholly on foot.
- 2.3.3 An analysis of the pedestrian catchment of the site has been completed to illustrate the site's 2kilometre walking catchment which represents a journey of approximately 25 minutes. This is defined as a preferred maximum for trips carried out on foot by the Chartered Institution of Highways and Transportation (CIHT) document, entitled 'Guidelines for Providing for Journeys on Foot'.
- 2.3.4 The pedestrian catchment plan for the sites is shown on **Plan 4**, with the How Bank Farm site catchment in yellow and the Orgill School site catchment in blue. This demonstrates that the majority of Egremont, including the whole of the town centre is within the pedestrian catchment of the two sites.
- 2.3.5 Within Egremont town centre Main Street provides a wide range of day-to-day amenities including a supermarket, post office, cash machine, GP surgery, pharmacy, and dentist. The location of the key local facilities is shown in **Plan 5**. This plan also highlights the location of a number of amenities on Southey Avenue which are in closer proximity to the sites. These include a primary school, convenience store and take-away, which are approximately 250 metres from both sites.
- 2.3.6 In addition to these retail and civic amenities, there are industrial and employment land uses on the outskirts of the town which provide further employment opportunities to those provided in the town centre.
- 2.3.7 To support pedestrian trips street lit footways are provided along all roads in the vicinity of the sites. These are supported by dropped kerbs and tactile paving on the key pedestrian desire lines. A hard surfaced, street lit, public footpath is also located along the southern boundary of the How Bank Farm site and along the western boundary of the Orgill School site.



- 2.3.8 This pedestrian infrastructure provides safe connections from the sites to the surrounding education establishments and retail amenities, as well as connections to Egremont town centre. Within the centre of Egremont wide street lit footways are provided along both sides of Main Street, with signalised pedestrian crossing facilities also provided.
- 2.3.9 It is therefore concluded that the pedestrian facilities in the vicinity of the sites provide an excellent opportunity for trips to be undertaken on foot, with a number of local amenities conveniently located.

### 2.4 Accessibility by Cycle

- 2.4.1 Cycling is becoming an increasingly popular mode of transport and is an effective mode for short trips. The DfT's Local Transport Note 2/08 'Cycle Infrastructure Design' (2008) states that many utility cycle journeys are under 3 miles (approximately 5 kilometres) although for commuters a trip distance of over 5 miles is not uncommon.
- 2.4.2 Consequently, cycling has the potential to replace short car journeys, particularly those under 5 kilometres. At a leisurely cycle speed of 10 miles per hour this would equate to a journey of around 25 minutes.
- 2.4.3 **Plan 6** highlights a 5-kilometre cycle catchment from the sites along with all cycling facilities/infrastructure within the surrounding area. This would equate to a journey of around 25 minutes using a leisurely cycle speed of 12 kilometres per hour.
- 2.4.4 The 5-kilometre cycle catchment covers the whole of Egremont, in addition to a number of villages in the surrounding area, including Thornhill, Bigrigg and Cleator, along with St Bees. The significant employment site of Sellafield is approximately 7.5 kilometres from the site which is not an unreasonable cycle journey from Egremont.
- 2.4.5 To support trips by bicycle National cycle route 72 runs through the centre of Egremont. This route provides a connected on-road and traffic free cycle route running from Kendal along the Cumbrian coast to Barrow-in-Furness, Whitehaven and Silloth.
- 2.4.6 The site is therefore concluded to be accessible by bicycle.

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#### 2.5 Accessibility by Public Transport

#### Access by Bus

- 2.5.1 The closest bus stops to the site are located on Egremont Bypass and Main Street as shown on Plan
   4. These stops are approximately 600 metres walking distance from the Orgill School site, and around 900 metres walking distance from How Bank Farm site.
- 2.5.2 While these walking distance is slightly further than typically desirable, the potential for residents to consider these bus services as a viable travel option does reflect recent NPPF guidance, which at Paragraph 103 states that "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".
- 2.5.3 On the basis of this guidance, the bus stops on are considered accessible from the proposed development sites.
- 2.5.4 **Table 4.1** provides a summary of the bus services and frequencies that operate along Main Street and Egremont Bypass.

		Monday - Friday					
Service	Route	AM Peak	Daytime	PM Peak	Evening	Sat	Sun
30	Maryport - Whitehaven - Egremont - Thornhill	2	2	2	1	2	1
X30	Whitehaven - Egremont	-	1	-	-	1	-

Table 4.1: Bus Service	s to/from Egremont
------------------------	--------------------

- 2.5.5 As can be seen from **Table 4.1**, the route 30 provides a service to key destinations such as Whitehaven and Workington throughout the day at weekends.
- 2.5.6 In addition to public bus services, there are also some dedicated services operated for employees of the Sellafield site, which is a significant local employer. Services include the following:
  - A shuttle service from the company's Whitehaven offices and the Sellafield site, via Egremont. This runs every 15 minutes between 8am and 4pm, with very limited services before and after

these times. This service stops at the car park on Chapel Street in the centre of Egremont town centre.

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- A park and ride service from the Moresby Parks park and ride (to the east of Whitehaven), via Cleator Moor and Egremont to the Sellafield site. This provides 9 services between 06:15 and 09:15 in the morning and 11 return services between 11:15 and 5:20pm.
- 2.5.7 The proposed development site is therefore concluded to be accessible by public transport.

### Access by National Rail

2.5.8 As shown in **Plan 6,** St Bees National Railway Station is within a 5km cycle of the site. St Bees is managed by Northern Trains with a local stopping service operating between Barrow-In-Furness and Carlisle. Stops along this route include Millom, Sellafield, and Whitehaven. Services operate on an hourly frequency in both directions Monday to Sunday with earlier and later trains operating during the week and on Saturdays.

### 2.6 Summary

2.6.1 Overall, the review of the site has identified that it is in a sustainable location and therefore is ideally placed to be able to positively promote and encourage trips by walking, cycling or public transport, rather than being reliant on the private car. The site's sustainable location is enhanced by virtue of its proximity to a range of day-to-day amenities, including those located in Egremont town centre.



### **3 PROPOSED DEVELOPMENT**

- The planning application relates to the redevelopment of two sites in close proximity to each other.
   The land at How Bank Farm site lies approximately 150m to the south west of the former Orgil School site. The sites lie to the west of Egremont town centre and both are currently undeveloped.
- 3.1.2 The detailed planning application will cover both sites with the How Bank Farm site providing up to 90 dwellings and the Former Orgil School providing a further 15 dwellings. As such, the planning application will consider a total of 105 units. Access for the How Bank Farm site will be from Babybarrow Road with access for the Orgil School site taken from Chaucer Avenue and Croadalla Avenue.
- 3.1.3 The proposed site layout for both sites is shown in **Plan 3**.

### 3.2 Internal Site Layout

### <u>How Bank Farm</u>

- 3.2.1 The proposed internal road network has been designed in accordance with Cumbria County Council's Development Design Guide. The internal access road provides a width of 5.5 metres, with 2 metre footways provided.
- 3.2.2 The internal road network has been designed to encourage low vehicle speeds, thus creating a pedestrian and cycle friendly environment. The proposed layout features a short section of 'shared surface' for access to some of the properties in the centre of the site. These sections will be 4.8m wide.

### Former Orgill School

3.2.3 The proposed internal road network has been designed in accordance with Cumbria County Council's Development Design Guide. The internal road network has been designed to encourage low vehicle speeds, thus creating a pedestrian and cycle friendly environment.



3.2.4 The proposed layout features a short section of 'shared surface' for access to the properties within the site. This road will be designed as shared private driveways and will be 4.2 metres wide. The road will provide access to the parking associated with six residential dwellings. There will be nine dwelling fronting either Chaucer Avenue or Croadalla Avenue with driveways and footways providing direct access to these roads.

#### 3.3 Site Access Arrangements

- 3.3.1 Access to the How Bank Farm site is proposed from a priority-controlled junction with Baybarrow Road. This access will be designed to adoptable standards in line with Cumbria County Council's Development Design Guide. A 2-metre wide footway will be that will provide connections to the existing pedestrian footways on Baybarrow Road/Southey Walk.
- 3.3.2 Vehicle access to the dwellings on the former Orgill School site is proposed from a number of locations. Four dwellings will have driveways providing direct access onto Chaucer Avenue, with five dwellings having driveways that provide direct access onto Croadalla Avenue. In addition six dwellings will be accessed off Croadalla Avenue by way of a shared surface street. Connections will be made to the existing footways along Chaucer Avenue and Croadalla Avenue.



### 4 TRAVEL PLAN INTIATIVES

### 4.1 Plan Flexibility

- 4.1.1 To satisfy the objectives, a range of suggested initiatives are provided in this document. These are discussed in the following section and are intended to encourage travel by sustainable modes.
- 4.1.2 The promotion of walking, cycling and public transport trips will be a key aim of the Travel Plan and will sit alongside the measures to promote car sharing amongst future residents. As far as possible, the measures set out in this section are designed to be suitable for review and monitoring. The list is not exhaustive and additional measures may be added to the list in the future.
- 4.1.3 It is important for the Travel Plan to be flexible to changing circumstances and innovations. Once it has been implemented, the Travel Plan Co-ordinator will be encouraged to investigate and adopt other potential initiatives to increase the attractiveness of making journeys to/from the site by non-car modes where appropriate.

#### 4.2 Provision of Information

- 4.2.1 The dissemination of information relating to sustainable travel modes will be an important part of the Plan. Future residents are unlikely to be aware of the full opportunities available for using sustainable transport modes as they may not be familiar with the local area.
- 4.2.2 Information in relation to sustainable transport opportunities may be disseminated in the following ways:
  - Inclusion of information, in relation to the available sustainable transport opportunities, within an initial Information Sheet;
  - Provision of 'Travel Packs' to all residents. The pack would include walk and cycle maps, showing integration with local amenities and public transport, and details of local public transport services, including maps and timetables. The pack might also contain the first travel questionnaire/diary and note the overall objectives to raise awareness of the proposals; and
  - Use made of existing and emerging technologies (i.e. mobile phone applications, real time public transport information systems) where appropriate.



#### 4.3 Travel Pack

4.3.1 The Travel Plan may be marketed and promoted through the provision of the Travel Pack for new residents. In addition to this, the Travel Plan Co-ordinator may also investigate the potential for providing community web pages, which may be hosted through an existing or new website. This could be used to develop a car sharing database for future residents, to disseminate information, such as forthcoming national events (e.g. National Cycle to Work Week) and outline any available sustainable transport discounts. Further detail for specific modes is outlined below. **Figure 4.1** shows an example of the travel information guide developed by Gleeson Homes for their Carlisle Street site in Swinton.



Figure 4.1: Example Travel Information Guide

4.3.2 **Figure 4.2** provides an image of the website which was produced for Gleeson's Carlisle Park development. In this instance the website was also used to issue the residents travel survey.



Figure 4.2: Website Promotion

### 4.4 Mode Specific Travel Information

### <u>Walking</u>

- 4.4.1 Measures to encourage walking as part of a multi-modal journey may include:
  - Travel Plan Co-ordinator liaison with the Highway Authority to ensure that potential pedestrian walking routes are appropriately maintained; and
  - Residents informed of Active Travel through the use of information sheets (possibly made available on a community website or online forum).
- 4.4.2 **Figure 4.3** provides an image of the 'travel of foot' page of the website produced for Gleeson Homes' Carlisle Park development.

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Figure 4.3 Walking Promotion Webpage

### <u>Cycling</u>

4.4.3 Cycling is promoted with secure cycle parking provided within the development. Further measures to encourage cycling may include:

- Promotional material on bicycle maintenance to be available to residents (possibly via a community website);
- Practical advice, safety information and local route information can be promoted;
- Advertisement of a local bicycle user group to new residents;
- Special travel events could be promoted at the site (e.g. a Dr Bike style event);
- The Travel Plan Co-ordinator to liaise with the Highway Authority to ensure that cycle routes are appropriately maintained; and
- Option for partnership with local cycle store which may facilitate the provision of vouchers or discounts for residents.



4.4.4 The development Travel Plan website will also provide key cycle information and links, an example of which is shown in **Figure 4.4**.



Figure 4.4: Cycling Promotion Webpage

### Public Transport Services

4.4.5 As previously noted, there are a number of bus services available in the vicinity of the site. The use of public transport can be promoted as part of a multi-modal journey. Measures to encourage bus and train usage may include:



- Up to date information provided on bus and train services, including route information and service frequencies, available to residents;
- The Travel Plan Co-ordinator to liaise with the Local Authority and the public transport operators to ensure that information remains valid; and
- The Travel Plan Co-ordinator to bring to the bus and rail operators' attention any issues raised to ensure that the potential for the use of these services to the site is maximised.
- 4.4.6 The development Travel Plan website will also provide key public transport information and links, an example of which is shown in **Figure 4.5**.

Take a fresh look at travel by bus. If you haven't used a bus for some time we believe you will be surprised with the exceptional quality of new buses now appearing on local routes.	Bu	s Timetables:		
Both Kilnhurst and Swinton benefit from a comprehensive network of bus services offering regular links to Mexborough, Doncaster, Rotherham and Barnsley as well as the opportunity to connect to rail services at Swinton and Mexborough stations.	+	Bus Service 217 (From Station Street, Lime Grove and Highthorn Road)		
The stops on Station Street, Lime Grove and Highthorn Road can all be reached in approximately 10 minutes. From these stops, regular bus services run to destinations such as Rotherham, Mexborough, Barnsley, Doncaster and many more local destinations. What's more, once the site has grown a little we will be funding a	+	Bus Service 218 (From Station Street, Lime Grove and Highthorn Road)		
bus service to come through Carlisle Park itself. Service 224 will provide a half hourly link (Monday to Saturday) and hourly link (evenings and Sundays) to Doncaster and Mexborough.	+	Bus Service 221 (From Station Street)		
A summary of the bus services operating from these stops is provided below. To download the timetable for each service, see the links to the right of this page.	+	Bus Service 222 (From Station Street)		
Interactive Public Transport Map				
To help you identify the range of bus options available South Yorkshire has an interactive public transport map, from which you can link to the timetables for all services operating across the region.				
Online Journey Planner				
The easiest way to plan a journey by public transport is to use the Travel South Yorkshire online journey planner. Simply enter your journey start and end points and the times you wish to travel, and the online tool will do the rest.				
<ul> <li>Further useful links:</li> <li>Travel South Yorkshire</li> </ul>				
+ Follow Travel South Yorkshire on Twitter				
+ Ticket Finder				

Figure 4.5: Public Transport Promotion Webpage (Bus page illustrated)



### Car Sharing and Taxis

- 4.4.7 Given the location of the development a car sharing scheme could be proposed for residents administered using a local database or alternatively there may be opportunities to use an internet based scheme such as <u>www.liftshare.com</u>.
- 4.4.8 Taxis may allow residents to make trips by public transport and then access the site more easily, even if this is occasional. A list of local taxi company's contact details will be available within the Travel Pack.



### 5 ADMINISTRATION, MONITORING AND REVIEW

### 5.1 Administration

### <u>Management</u>

- 5.1.1 The administration of the Travel Plan will initially be the responsibility of a Travel Plan Co-ordinator. A dedicated Travel Plan Co-ordinator will be appointed to provide residents with details of the environmental, social and health benefits to be gained by using sustainable transport modes and will be the first point of contact for residents and other outside organisations in all matters regarding travel.
- 5.1.2 This post will run for the lifetime of the Plan which is typically 5 years with duties of the Travel Plan Coordinator generally including:
  - The operation of the Plan;
  - Maintenance of a database containing existing travel information;
  - Monitoring of the Travel Plan;
  - The preparation of subsequent update Travel Plan reports for submission to the Local Authority;
  - Liaison with the Local Authority Travel Plan Co-ordinator (where appropriate);
  - Liaison with Public Transport providers (where appropriate);
  - Promotion of the Travel Plan; and
  - Promotion of travel events.

### <u>Funding</u>

5.1.3 Financial measures will be considered at an appropriate time along with a suitable budget to be set aside for the Travel Plan and its initiatives as required. At this stage, it is envisaged that this would allow travel taster initiatives to be promoted such as a weekly bus/rail ticket, membership to the car club scheme and cycle accessories. The Action Plan for the implementation of the Travel Plan and its suggested initiatives is discussed in subsequent sections of this document.



#### 5.2 Monitoring

5.2.1 The Travel Plan is a strategy which can evolve over time. It is important that the Plan is a flexible document that is responsive to change, although the underlying objectives of the Plan, which are to educate and facilitate travel by sustainable modes, will not change.

#### <u>Baseline</u>

- 5.2.2 Travel surveys will be conducted to determine the baseline from which the effectiveness of the Travel Plan may be evaluated. These could be supplemented by a questionnaire survey or travel diary for residents. It is envisaged that the first questionnaire surveys/travel diaries may be issued to residents as part of the Travel Pack. Within 6 months of first occupation, the returned survey data will be collated and analysed which may then form the baseline upon which to set targets and monitor progress.
- 5.2.3 To assist in collecting travel survey data from residents, it could be advertised that each returned completed questionnaire is entered into a prize draw; the winner receiving a prize, which may be vouchers for a local cycle shop or similar.
- 5.2.4 The surveys should be repeated on an annual basis for a 5-year period. The programme of monitoring and review will be designed to generate information by which the success of the Plan can be evaluated. Monitoring and review will be the responsibility of the Travel Plan Coordinator.

#### <u>Targets</u>

- 5.2.5 Following the establishment of the baseline, a full Travel Plan for the site will be produced which will include targets (to be agreed with the Local Authority).
- 5.2.6 It is envisaged that targets may be set for the percentage of trips by sustainable modes over a 5-year period. It may be possible to increase the number of walking and cycling trips by a percentage (to be agreed) over a 5-year period to assist with general health and wellbeing.

#### 5.3 Review

5.3.1 The first review will be 12 months after completion of the full Travel Plan and may include production of a brief Travel Plan review report. This may be submitted to the Local Authority for information.



- 5.3.2 After the initial review, a further update may be carried out annually, which would include the submission of a summary report to the Local Authority. This should continue for a period of 5 years. The review of the Plan might include:
  - Analysis of the latest travel survey responses;
  - The latest bus, cycle, and walking route information;
  - Consideration of any subsequent development or new transport provision in the local area and its implications for the Plan;
  - Review of targets for the future year;
  - Any additional measures, any changes/refinements to existing measures; and
  - Evaluation of the success of the various measures implemented to date.



### 6 DRAFT ACTION PLAN

- 6.1.1 The following list describes the proposed measures that are to be taken to help achieve the TravelPlan objectives. The measures can be developed in the form of an Action Plan as outlined overleaf.The Action Plan should:
  - Include a time frame for each action so as to provide a clear approach for the implementation of the Travel Plan;
  - Name the person who is to be responsible for making sure the actions are accomplished; and
  - Include a range of measures of varying degrees of complexity. It is important to ensure that all measures are attempted and that not just the easiest measures are achieved.



Measure	Objective	Responsibility	Deadline
Framework Travel Plan	Prepare Framework Travel Plan	Vectos	Prior to Planning permission
Appoint TPC	Provide person responsible for Plan	Gleeson Homes	Prior to first occupation
Set up development website	Provide person responsible for Plan	Gleeson Homes	Prior to first occupation
Provide all new residents with travel information guide	Promotion of sustainable travel	TPC	Prior to first occupation
Provide community notice board	Promotion of sustainable travel	Gleeson Homes	During construction
Provide pedestrian infrastructure	Promote walking	Gleeson Homes	During construction
Submit and agree Full Travel Plan	Promotion of sustainable travel	ТРС	Prior to first occupation
Investigate potential for school walking initiatives	Promotion of sustainable travel	ТРС	From first occupation
Carry out baseline travel survey	Determine baseline travel patterns	TPC	Once occupation exceeds 50 units
Commission follow up travel survey	Monitor Travel Plan progress towards targets	ТРС	12 months after baseline survey (and then annually)
Prepare residents newsletter	Promotion of sustainable travel	TPC	Annually until full occupation
Produce Annual Progress Report for CCC	Tailor Travel Plan to site conditions and progress towards targets	ТРС	1 month after first survey and annually thereafter



**PLANS** 









Legend  $\bigstar$ 

~

A

Former Orgil School SIte Location How Bank Farm Site Location

PLAN 4

Bus Stop

Primary School

Secondary School

GP Surgery

Dentist

Newsagent/Post Office

**Convience Store** 

Supermarket

Pharmacy

Mobile Bank

Cash Machine/ATM

Public Right of Way

Former Orgill School 2km Walking Catchment How Bank Farm 2km Walking Catchment

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CLIENT:

# **Gleeson Homes**

PROJECT TITLE

Land at How Bank Farm and Former Orgill School, Egremont

DRAWING TITLE

# **Pedestrian Walking** Catchment

N.T.S DRAWN: HECKED TA RW Sep. 2020



REVISION:

Oxford Place, 61 Oxford Street, Manchester M1 6EQ t:0161 228 1008 e:manchester@vectos.co.uk






## **APPENDIX B**

**TRICS Output Files** 

Sele	cted regions and areas:	
02	SOUTH EAST	
	HF HERTFORDSHIRE	1 days
	KC KENT	1 days
04	EAST ANGLIA	
	NF NORFOLK	3 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
80	NORTH WEST	
	CH CHESHIRE	2 days
10	WALES	
	PS POWYS	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

#### Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	No of Dwellings
Actual Range:	23 to 288 (units: )
Range Selected by User:	6 to 200 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision: Selection by:

Include all surveys

Date Range: 01/01/12 to 19/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

<u>Selected survey days:</u>	
Monday	2 days
Tuesday	2 days
Wednesday	3 days
Thursday	3 days

This data displays the number of selected surveys by day of the week.

<u>Selected survey types:</u>	
Manual count	10 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

<u>Selected Locations:</u>	
Suburban Area (PPS6 Out of Centre)	
Edge of Town	

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

<u>Selected Location Sub Categories:</u> Residential Zone 3 7

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

RICS 7.7.2 250720 B19	0.45 Database right of TRICS Consortiu	Im Limited, 2020. All rights reserved	Monday 07/09/20
ectos (North) Limited	3rd Floor, Oxford Place, 61 Oxford St	Manchester	Licence No: 715001
Secondary Filter	ing selection:		
<u>Use Class:</u>			
C3	10 days		
This data displays has been used for	the number of surveys per Use Class cla this purpose, which can be found within	essification within the selected set. The U. the Library module of TRICS®.	lse Classes Order 2005
Population within	<u>1 mile:</u>		
1,001 to 5,000	2 days		
5,001 to 10,000	8 days		
This data displays	the number of selected surveys within s	tated 1-mile radii of population.	
Population within	<u>5 miles:</u>		
5,001 to 25,000	4 days		
25,001 to 50,000	2 days		
50,001 to 75,000	4 days		
This data displays	the number of selected surveys within s	tated 5-mile radii of population.	
Car ownership wit	hin 5 miles:		
0.6 to 1.0	1 days		
1.1 to 1.5	8 days		
1.6 to 2.0	1 days		
This data displays within a radius of	the number of selected surveys within st 5-miles of selected survey sites.	tated ranges of average cars owned per .	residential dwelling,
Travel Plan			
Yes	5 davs		
	0 44 / 5		

5 days 5 days No This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

<u>PTAL Rating:</u> No PTAL Present

ΤF

10 days

This data displays the number of selected surveys with PTAL Ratings.

TRICS 7.7.	2 250720 B19.45	Database right of TRICS C	Consortium Limited, 2020	D. All rights reserved	Monday 07/09/20 Page 3
Vectos (Nor	th) Limited 3rd Flo	or, Oxford Place, 61 Oxfor	rd St Manchester		Licence No: 715001
<u></u>	T OF SITES relevant i	to selection parameters			
1	CH-03-A-10 MEADOW DRIVE NORTHWICH BARNTON Edge of Town Residential Zone Total No of Dwellin	SEMI - DETACHED & 1	40	CHESHIRE	
2	CH-03-A-11 LONDON ROAD NORTHWICH LEFTWICH Suburban Area (PF Residential Zone Total No of Dwellin	PS6 Out of Centre)	24	Survey Type: MANUAL CHESHIRE	
3	Survey data HF-03-A-03 HARE STREET ROA BUNTINGFORD	e: THURSDAY MIXED HOUSES AD	06/06/19	Survey Type: MANUAL HERTFORDSHIRE	
4	Edge of Town Residential Zone Total No of Dwellin <i>Survey dat</i> KC-03-A-07 RECULVER ROAD HERNE BAY	ngs: <i>e: MONDAY</i> MI XED HOUSES	160 <i>08/07/19</i>	<i>Survey Type: MANUAL</i> KENT	
5	Edge of Town Residential Zone Total No of Dwellin <i>Survey dat</i> NF-03-A-01 YARMOUTH ROAD CAISTER-ON-SEA	ngs: <i>e: WEDNESDAY</i> SEMI DET. & BUNGA	288 <i>27/09/17</i> LOWS	<i>Survey Type: MANUAL</i> NORFOLK	
6	Suburban Area (PF Residential Zone Total No of Dwellin <i>Survey dat</i> NF-03-A-04 NORTH WALSHAM NORTH WALSHAM	PS6 Out of Centre) ngs: <i>ie: TUESDAY</i> MI XED HOUSES ROAD	27 16/10/12	<i>Survey Type: MANUAL</i> NORFOLK	
7	Edge of Town Residential Zone Total No of Dwellin <i>Survey dat</i> NF-03-A-05 HEATH DRIVE HOLT	ngs: <i>e: WEDNESDAY</i> MI XED HOUSES	70 1 <i>8/09/19</i>	<i>Survey Type: MANUAL</i> NORFOLK	
8	Edge of Town Residential Zone Total No of Dwellin <i>Survey dat</i> NY-03-A-11 HORSEFAIR BOROUGHBRIDGE	ngs: <i>e: THURSDAY</i> PRIVATE HOUSING	40 1 <i>9/09/19</i>	<i>Survey Type: MANUAL</i> NORTH YORKSHIRE	
	Edge of Town Residential Zone Total No of Dwellin <i>Survey dat</i>	ngs: <i>e: WEDNESDAY</i>	23 1 <i>8/09/13</i>	Survey Type: MANUAL	

TRICS 7.7.2	250720 B19.45 Da	tabase right of TRICS Co	nsortium Limited, 2020	). All rights reserved	Monday 07/09/20 Page 4
Vectos (North	n) Limited 3rd Floor	, Oxford Place, 61 Oxford	St Manchester		Licence No: 715001
LIST	OF SITES relevant to	selection parameters (Co	<u>nt.)</u>		
9	PS-03-A-02	DETACHED/SEMI -DET	ACHED	POWYS	
	gunrog Road Welshpool				
	Suburban Area (PPS	6 Out of Centre)			
	Residential Zone				
	Total No of Dwellings		28		
10	Survey date:	MONDAY	11/05/15	Survey Type: MANUAL	
10	SH-03-A-05	SEMI-DETACHED/TER	RACED	SHRUPSHIRE	
	Edge of Town				
	Residential Zone				
	Total No of Dwellings		54		
	Survey date:	THURSDAY	24/10/13	Survey Type: MANUAL	
	5				

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

#### MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
ES-03-A-04	Does not match development characteristics
HC-03-A-17	Does not match development characteristics
HC-03-A-18	Does not match development characteristics
HC-03-A-19	Does not match development characteristics
HC-03-A-20	Does not match development characteristics
HC-03-A-23	Does not match development characteristics

#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI-MODAL VEHICLES Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS		[	DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	75	0.080	10	75	0.306	10	75	0.386
08:00 - 09:00	10	75	0.179	10	75	0.351	10	75	0.530
09:00 - 10:00	10	75	0.160	10	75	0.180	10	75	0.340
10:00 - 11:00	10	75	0.134	10	75	0.182	10	75	0.316
11:00 - 12:00	10	75	0.142	10	75	0.184	10	75	0.326
12:00 - 13:00	10	75	0.159	10	75	0.153	10	75	0.312
13:00 - 14:00	10	75	0.155	10	75	0.143	10	75	0.298
14:00 - 15:00	10	75	0.233	10	75	0.199	10	75	0.432
15:00 - 16:00	10	75	0.316	10	75	0.186	10	75	0.502
16:00 - 17:00	10	75	0.296	10	75	0.163	10	75	0.459
17:00 - 18:00	10	75	0.340	10	75	0.141	10	75	0.481
18:00 - 19:00	10	75	0.309	10	75	0.199	10	75	0.508
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.503			2.387			4.890

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.

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#### Parameter summary

Trip rate parameter range selected:	23 - 288 (units: )
Survey date date range:	01/01/12 - 19/11/19
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	6

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI-MODAL CYCLISTS Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS		[	DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	75	0.001	10	75	0.008	10	75	0.009
08:00 - 09:00	10	75	0.003	10	75	0.009	10	75	0.012
09:00 - 10:00	10	75	0.000	10	75	0.004	10	75	0.004
10:00 - 11:00	10	75	0.001	10	75	0.003	10	75	0.004
11:00 - 12:00	10	75	0.001	10	75	0.004	10	75	0.005
12:00 - 13:00	10	75	0.003	10	75	0.003	10	75	0.006
13:00 - 14:00	10	75	0.000	10	75	0.000	10	75	0.000
14:00 - 15:00	10	75	0.001	10	75	0.001	10	75	0.002
15:00 - 16:00	10	75	0.007	10	75	0.001	10	75	0.008
16:00 - 17:00	10	75	0.009	10	75	0.000	10	75	0.009
17:00 - 18:00	10	75	0.005	10	75	0.004	10	75	0.009
18:00 - 19:00	10	75	0.003	10	75	0.000	10	75	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.037			0.071

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

#### Page 7 Licence No: 715001

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI - MODAL VEHICLE OCCUPANTS Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

		ARRIVALS		[	DEPARTURES	5		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	75	0.107	10	75	0.528	10	75	0.635
08:00 - 09:00	10	75	0.271	10	75	0.683	10	75	0.954
09:00 - 10:00	10	75	0.243	10	75	0.294	10	75	0.537
10:00 - 11:00	10	75	0.196	10	75	0.296	10	75	0.492
11:00 - 12:00	10	75	0.228	10	75	0.293	10	75	0.521
12:00 - 13:00	10	75	0.247	10	75	0.237	10	75	0.484
13:00 - 14:00	10	75	0.251	10	75	0.227	10	75	0.478
14:00 - 15:00	10	75	0.363	10	75	0.297	10	75	0.660
15:00 - 16:00	10	75	0.584	10	75	0.279	10	75	0.863
16:00 - 17:00	10	75	0.549	10	75	0.282	10	75	0.831
17:00 - 18:00	10	75	0.615	10	75	0.224	10	75	0.839
18:00 - 19:00	10	75	0.523	10	75	0.362	10	75	0.885
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.177			4.002			8.179

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI-MODAL PEDESTRIANS Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES	5		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	75	0.012	10	75	0.031	10	75	0.043
08:00 - 09:00	10	75	0.052	10	75	0.057	10	75	0.109
09:00 - 10:00	10	75	0.042	10	75	0.021	10	75	0.063
10:00 - 11:00	10	75	0.024	10	75	0.023	10	75	0.047
11:00 - 12:00	10	75	0.020	10	75	0.021	10	75	0.041
12:00 - 13:00	10	75	0.027	10	75	0.023	10	75	0.050
13:00 - 14:00	10	75	0.027	10	75	0.021	10	75	0.048
14:00 - 15:00	10	75	0.024	10	75	0.024	10	75	0.048
15:00 - 16:00	10	75	0.058	10	75	0.060	10	75	0.118
16:00 - 17:00	10	75	0.050	10	75	0.037	10	75	0.087
17:00 - 18:00	10	75	0.040	10	75	0.021	10	75	0.061
18:00 - 19:00	10	75	0.041	10	75	0.072	10	75	0.113
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.417			0.411			0.828

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI-MODAL PUBLIC TRANSPORT USERS Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES	;		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	75	0.000	10	75	0.012	10	75	0.012
08:00 - 09:00	10	75	0.004	10	75	0.050	10	75	0.054
09:00 - 10:00	10	75	0.001	10	75	0.011	10	75	0.012
10:00 - 11:00	10	75	0.004	10	75	0.004	10	75	0.008
11:00 - 12:00	10	75	0.007	10	75	0.005	10	75	0.012
12:00 - 13:00	10	75	0.004	10	75	0.001	10	75	0.005
13:00 - 14:00	10	75	0.009	10	75	0.005	10	75	0.014
14:00 - 15:00	10	75	0.005	10	75	0.005	10	75	0.010
15:00 - 16:00	10	75	0.024	10	75	0.020	10	75	0.044
16:00 - 17:00	10	75	0.019	10	75	0.009	10	75	0.028
17:00 - 18:00	10	75	0.016	10	75	0.008	10	75	0.024
18:00 - 19:00	10	75	0.052	10	75	0.023	10	75	0.075
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.145			0.153			0.298

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

#### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED MULTI-MODAL TOTAL PEOPLE Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

		ARRIVALS		[	DEPARTURES	5		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									L
03:00 - 04:00									L
04:00 - 05:00									I
05:00 - 06:00									L
06:00 - 07:00									I
07:00 - 08:00	10	75	0.121	10	75	0.578	10	75	0.699
08:00 - 09:00	10	75	0.329	10	75	0.800	10	75	1.129
09:00 - 10:00	10	75	0.286	10	75	0.330	10	75	0.616
10:00 - 11:00	10	75	0.225	10	75	0.325	10	75	0.550
11:00 - 12:00	10	75	0.256	10	75	0.324	10	75	0.580
12:00 - 13:00	10	75	0.280	10	75	0.264	10	75	0.544
13:00 - 14:00	10	75	0.286	10	75	0.253	10	75	0.539
14:00 - 15:00	10	75	0.394	10	75	0.328	10	75	0.722
15:00 - 16:00	10	75	0.672	10	75	0.359	10	75	1.031
16:00 - 17:00	10	75	0.627	10	75	0.329	10	75	0.956
17:00 - 18:00	10	75	0.676	10	75	0.257	10	75	0.933
18:00 - 19:00	10	75	0.618	10	75	0.456	10	75	1.074
19:00 - 20:00									<u> </u>
20:00 - 21:00									L
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.770			4.603			9.373

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.



# **APPENDIX C**

**Baseline Traffic Survey Results** 

## SURVEY CONTROL

Client:	Vectos North
Client Contact:	Richard Whiting
Survey Location:	Egremont
Date(s) of Survey:	Thursday 10th September 2020
Notes:	
On Site Supervisor:	Neil Harley
Data Checking:	David Cheng
Survey Reference:	2020 Egremont
Status:	Final
Date of Issue:	12th September 2020

				JUNCTION 1
<b>_</b>				
	Bavbarrow		2	
	Road		▲1	
				1
VING TITLE				
VING TITLE	TRAFFIC MOV	EMENT REFERENCE		signal surveys
VING TITLE	TRAFFIC MOV	EMENT REFERENCE		signal surveys Traffic Counts and Car Park Surveys Parkway House, Palatine Road, Northenden, Manchester,
WING TITLE	TRAFFIC MOVI	EMENT REFERENCE		<b>Signal surveys</b> Traffic Counts and Car Park Surveys Parkway House, Palatine Road, Northenden, Manchester, M22 4DB Tel 0161 998 4226

Time Beginning	Bayb	Baybarrow Road - Thursday 10th September 2020						
		1		2				
	LV	HV	PCU	LV	HV	PCU		
0730	2	0	2	10	0	10		
0745	1	0	1	4	0	4		
0800	5	0	5	16	0	16		
0815	12	0	12	20	0	20		
0830	13	1	15	25	0	25		
0845	9	0	9	19	0	19		
0900	5	0	5	8	0	8		
0915	8	1	10	5	0	5		
Baybarrow Road - Thursday 10th September 2020								
Time Beginning	Bayb	arrow R Sepi	Road - T tember :	hursday 2020	y 10th			
Time Beginning	Bayb	arrow R Sep <sup>i</sup> 1	Road - T tember :	hursday 2020	y 10th 2			
Time Beginning	Bayb LV	arrow R Sept 1 HV	Road - T tember : PCU	hursday 2020 LV	y 10th 2 HV	PCU		
Time Beginning 1630	Bayb	arrow R Sep 1 HV 0	Road - T tember PCU 12	hursday 2020 LV 12	y 10th 2 HV 0	PCU 12		
Time Beginning 1630 1645	Bayb LV 12 9	arrow R Sept 1 HV 0 0	Road - T tember 2 PCU 12 9	hursday 2020 LV 12 12	y 10th 2 HV 0 0	PCU 12 12		
Time Beginning 1630 1645 1700	Bayb LV 12 9 11	arrow R Sepi 1 HV 0 0	Road - T tember : PCU 12 9 11	hursday 2020 LV 12 12 14	y 10th 2 HV 0 0 1	PCU 12 12		
Time Beginning 1630 1645 1700 1715	Bayb LV 12 9 11 11	arrow R Sep <sup>i</sup> 1 HV 0 0 0	20ad - T tember 1 PCU 12 9 11 11	hursday 2020 LV 12 12 14 17	y 10th 2 HV 0 1 0	PCU 12 12 16 17		
Time Beginning 1630 1645 1700 1715 1730	Bayb LV 12 9 11 11 13	arrow R Sepi 1 HV 0 0 0 0 0	20ad - T tember PCU 12 9 11 11 13	hursday 2020 LV 12 12 14 17 21	y 10th 2 HV 0 0 1 0 0	PCU 12 12 16 17 21		
Time Beginning 1630 1645 1700 1715 1730 1745	Bayb LV 12 9 11 11 13 20	arrow R Sepi 1 1 0 0 0 0 0 0 0	Road - T           tember :           PCU           12           9           11           13           20	hursday 2020 LV 12 12 14 17 21 18	y 10th 2 HV 0 0 1 0 0 0 0	PCU 12 12 16 17 21 18		
Time Beginning 1630 1645 1700 1715 1730 1745 1800	Bayb LV 12 9 11 11 13 20 15	arrow R Sepi 1 HV 0 0 0 0 0 0 0 0 0	Road - T           tember           PCU           12           9           11           13           20           15	hursday 2020 LV 12 12 14 17 21 18 7	y 10th 2 HV 0 0 1 0 0 0 0 0 0	PCU 12 12 16 17 21 18 7		



# **APPENDIX D**

How Bank Farm Junction Modelling Results



# Junctions 8 PICADY 8 - Priority Intersection Module Version: 8.0.6.541 [19821,26/11/2015] © Copyright TRL Limited, 2020 For sales and distribution information, program advice and maintenance, contact TRL:

Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Site access-Baybarrow Rd.arc8 Path: N:\Vectos Job Data\2020\VN201725 Land at Egremont\Picady Report generation date: 05/10/2020 16:23:02

- » (Default Analysis Set) 2025 Inc Dev, AM
- » (Default Analysis Set) 2025 Inc Dev, PM

#### Summary of junction performance

	AM		PM					
	Queue (PCU)	RFC	Queue (PCU)	RFC				
	A1 -	A1 - 2025 Inc Dev						
Stream B-AC	0.07	0.06	0.03	0.03				
Stream C-AB	0.02	0.02	0.04	0.04				
Stream C-A	-	-	-	-				
Stream A-B	-	-	-	-				
Stream A-C	-	-	-	-				

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle.

"D1 - 2025 Inc Dev, AM " model duration: 07:45 - 09:15 "D2 - 2025 Inc Dev, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 05/10/2020 16:23:00

#### **File summary**

Title	(untitled)
Location	
Site Number	
Date	01/10/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	james.whitton
Description	

#### **Analysis Options**

Vehicle Length	Do Queue	Calculate Residual	Residual Capacity Criteria	RFC	Average Delay Threshold	Queue Threshold
(m)	Variations	Capacity	Type	Threshold	(s)	(PCU)
5.75			N/A	0.85	36.00	20.00



#### Units



The junction diagram reflects the last run of ARCADY.

# (Default Analysis Set) - 2025 Inc Dev, AM

#### **Data Errors and Warnings**

No errors or warnings

## **Analysis Set Details**

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	



## **Demand Set Details**

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2025 Inc Dev, AM	2025 Inc Dev	AM		ONE HOUR	07:45	09:15	90	15		

# **Junction Network**

## Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	6.27	А

#### **Junction Network Options**

Driving Side	Lighting
Left	Normal/unknown

## Arms

#### Arms

Arm	Arm	Name	Description	Arm Type
Α	Α	Baybarrow Rd (SW)		Major
В	В	Site Access		Minor
С	С	Baybarrow (NE)		Major

## **Major Arm Geometry**

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
С	7.00		0.00		2.20	90.00	<	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

#### Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
в	One lane	2.75										120	105

## Slope / Intercept / Capacity

#### **Priority Intersection Slopes and Intercepts**

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	556.016	0.097	0.245	0.154	0.350
1	B-C	672.766	0.099	0.249	-	-
1	C-B	626.083	0.232	0.232	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.



# **Traffic Flows**

## **Demand Set Data Options**

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		~	~	HV Percentages	2.00				~	~

# **Entry Flows**

#### **General Flows Data**

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Α	ONE HOUR	~	90.00	100.000
В	ONE HOUR	~	35.00	100.000
С	ONE HOUR	~	54.00	100.000

# **Turning Proportions**

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

	То						
		Α	В	С			
Erom	Α	0.000	6.000	84.000			
From	в	12.000	0.000	23.000			
	С	43.000	11.000	0.000			

#### Turning Proportions (PCU) - Junction 1 (for whole period)

	То						
		Α	В	С			
From	Α	0.00	0.07	0.93			
FIOII	в	0.34	0.00	0.66			
	С	0.80	0.20	0.00			

# **Vehicle Mix**

Average PCU Per Vehicle - Junction 1 (for whole period)

		То						
		Α	В	С				
From	Α	1.000	1.000	1.000				
From	в	1.000	1.000	1.000				
	С	1.000	1.000	1.000				



#### Heavy Vehicle Percentages - Junction 1 (for whole period)

	То				
		Α	В	С	
From	A	0.0	0.0	0.0	
FIOIII	В	0.0	0.0	0.0	
	С	0.0	0.0	0.0	

# **Results**

## **Results Summary for whole modelled period**

Stream Max RFC		Max Delay (s)	Max Queue (PCU)	Max LOS	
B-AC 0.06		6.43	0.07	А	
C-AB	0.02	5.79	0.02	А	
C-A	-	-	-	-	
A-B	-	-	-	-	
A-C	-	-	-	-	

## Main Results for each time segment

#### Main results: (07:45-08:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	26.35	26.17	0.00	607.86	0.043	0.04	6.187	А
C-AB	8.73	8.66	0.00	631.75	0.014	0.02	5.777	А
C-A	31.93	31.93	0.00	-	-	-	-	-
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	63.24	63.24	0.00	-	-	-	-	-

#### Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	31.46	31.43	0.00	604.01	0.052	0.05	6.286	А
C-AB	10.53	10.52	0.00	632.91	0.017	0.02	5.783	А
C-A	38.01	38.01	0.00	-	-	-	-	-
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	75.51	75.51	0.00	-	-	-	-	-

#### Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	38.54	38.48	0.00	598.69	0.064	0.07	6.426	Α
C-AB	13.08	13.06	0.00	634.55	0.021	0.02	5.792	А
C-A	46.37	46.37	0.00	-	-	-	-	-
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	92.49	92.49	0.00	_	-	-	-	-



#### Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	38.54	38.53	0.00	598.69	0.064	0.07	6.426	А
C-AB	13.09	13.09	0.00	634.56	0.021	0.02	5.794	Α
C-A	46.37	46.37	0.00	-	-	-	-	-
A-B	6.61	6.61	0.00	-	-	-	-	-
A-C	92.49	92.49	0.00	-	-	-	-	-

#### Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	31.46	31.52	0.00	604.01	0.052	0.06	6.288	Α
C-AB	10.53	10.55	0.00	632.92	0.017	0.02	5.786	А
C-A	38.01	38.01	0.00	-	-	-	-	-
A-B	5.39	5.39	0.00	-	-	-	-	-
A-C	75.51	75.51	0.00	-	-	-	-	-

## Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	26.35	26.39	0.00	607.85	0.043	0.05	6.193	А
C-AB	8.73	8.74	0.00	631.75	0.014	0.02	5.778	А
C-A	31.92	31.92	0.00	-	-	-	-	-
A-B	4.52	4.52	0.00	-	-	-	-	-
A-C	63.24	63.24	0.00	-	-	-	-	-

# (Default Analysis Set) - 2025 Inc Dev, PM

#### **Data Errors and Warnings**

No errors or warnings

#### **Analysis Set Details**

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

## **Demand Set Details**

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2025 Inc Dev, PM	2025 Inc Dev	PM		ONE HOUR	16:30	18:00	90	15		

# **Junction Network**

## Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	6.00	А

#### **Junction Network Options**

Driving Side	Lighting
Left	Normal/unknown



# Arms

#### Arms

Arm	Arm	Name	Description	Arm Type
Α	А	Baybarrow Rd (SW)		Major
В	В	Site Access		Minor
С	С	Baybarrow (NE)		Major

### **Major Arm Geometry**

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
С	7.00		0.00		2.20	90.00	~	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

#### **Minor Arm Geometry**

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
в	One lane	2.75										120	105

## Slope / Intercept / Capacity

#### **Priority Intersection Slopes and Intercepts**

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	556.016	0.097	0.245	0.154	0.350
1	B-C	672.766	0.099	0.249	-	-
1	C-B	626.083	0.232	0.232	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

# **Traffic Flows**

#### **Demand Set Data Options**

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		~	~	HV Percentages	2.00				~	~



# **Entry Flows**

## **General Flows Data**

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Α	ONE HOUR	$\checkmark$	90.00	100.000
В	ONE HOUR	~	14.00	100.000
С	ONE HOUR	✓	77.00	100.000

# **Turning Proportions**

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

			То	
		Α	В	С
From	Α	0.000	14.000	76.000
FIOIN	В	6.000	0.000	8.000
	С	58.000	19.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		То					
		Α	В	С			
From	Α	0.00	0.16	0.84			
FIOIN	в	0.43	0.00	0.57			
	С	0.75	0.25	0.00			

# **Vehicle Mix**

#### Average PCU Per Vehicle - Junction 1 (for whole period)

		То					
		Α	В	С			
From	Α	1.000	1.000	1.000			
FIUIII	В	1.000	1.000	1.000			
	С	1.000	1.000	1.000			

#### Heavy Vehicle Percentages - Junction 1 (for whole period)

	То					
		Α	В	С		
Erom	Α	0.0	0.0	0.0		
FIOII	В	0.0	0.0	0.0		
	С	0.0	0.0	0.0		



# **Results**

## **Results Summary for whole modelled period**

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.03	6.31	0.03	А
C-AB	0.04	5.78	0.04	А
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

## Main Results for each time segment

### Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	10.54	10.47	0.00	595.63	0.018	0.02	6.152	А
C-AB	15.34	15.23	0.00	639.20	0.024	0.03	5.769	А
C-A	42.63	42.63	0.00	-	-	-	-	-
A-B	10.54	10.54	0.00	-	-	-	-	-
A-C	57.22	57.22	0.00	-	-	-	-	-

#### Main results: (16:45-17:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.59	12.57	0.00	591.39	0.021	0.02	6.219	А
C-AB	18.58	18.56	0.00	641.84	0.029	0.03	5.775	А
C-A	50.64	50.64	0.00	-	-	-	-	-
A-B	12.59	12.59	0.00	-	-	-	-	-
A-C	68.32	68.32	0.00	-	-	-	-	-

#### Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	15.41	15.39	0.00	585.54	0.026	0.03	6.313	Α
C-AB	23.20	23.16	0.00	645.51	0.036	0.04	5.784	А
C-A	61.58	61.58	0.00	-	-	-	-	-
A-B	15.41	15.41	0.00	-	-	-	-	-
A-C	83.68	83.68	0.00	-	-	-	-	-

#### Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	15.41	15.41	0.00	585.53	0.026	0.03	6.313	А
C-AB	23.20	23.20	0.00	645.51	0.036	0.04	5.784	А
C-A	61.58	61.58	0.00	-	-	-	-	-
A-B	15.41	15.41	0.00	-	-	-	-	-
A-C	83.68	83.68	0.00	-	-	-	-	-



#### Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	12.59	12.61	0.00	591.38	0.021	0.02	6.222	Α
C-AB	18.59	18.62	0.00	641.84	0.029	0.04	5.776	Α
C-A	50.63	50.63	0.00	-	-	-	-	-
A-B	12.59	12.59	0.00	-	-	-	-	-
A-C	68.32	68.32	0.00	-	-	-	-	-

### Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	10.54	10.55	0.00	595.60	0.018	0.02	6.155	А
C-AB	15.35	15.38	0.00	639.21	0.024	0.03	5.770	А
C-A	42.62	42.62	0.00	-	-	-	-	-
A-B	10.54	10.54	0.00	-	-	-	-	-
A-C	57.22	57.22	0.00	-	-	-	-	-