

TRANSPORT ASSESSMENT

# Jones Homes (Yorkshire) Ltd

Proposed Residential Development Primrose Lane,  
Liversedge

March 2023

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Transport Assessment

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VN222468

## Report control

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## 1 Introduction

- 1.1 Vectos has been commissioned by Jones Homes (Yorkshire) Ltd to provide highways and transportation advice in support of a planning application for a proposed residential development in Liversedge, Kirklees in West Yorkshire.
- 1.2 The site is located within the jurisdiction of Kirklees Council (KC), who act as both the local planning and highway authority.
- 1.3 This Transport Assessment (TA) provides information on the traffic and transport planning aspects of the development proposals and forms supplementary information to assist in the determination of a planning application. A Framework Travel Plan (FTP) is included as part of the transport submission to promote sustainable travel at the site.

### Development Site and Location

- 1.4 The strategic location of the site is shown in **Plan VN222468-G100**, with **Plan VN222468-G101** showing the site in a more local context.
- 1.5 The proposed development site is located in the western part of Liversedge, between Cleckheaton and Heckmondwike and to the northwest of Dewsbury, within the Kirklees District in West Yorkshire. The site is to the north of the A649 Halifax Road and is currently open land.

### Proposed Development and Planning Background

- 1.6 A total of 67 residential dwellings are proposed at the site with access to be taken from Darley Road. The proposed site layout for the development has been included as **Appendix A** of his report.
- 1.7 The proposed development is part of an allocated housing site, as identified in the KC Policies Map that was adopted in February 2019 and is part of the current KC Local Plan up to 2026. The proposed development is part of the Site HS117, which comprises a total of 3.12ha of land. The net site area is reduced to around 2.5ha in order to safeguard the area of woodland (Protected Open Space) in the northern part of the site. The allocated housing site as indicated in the KC Policies Plan is shown by the orange area in **Figure 1.1**.

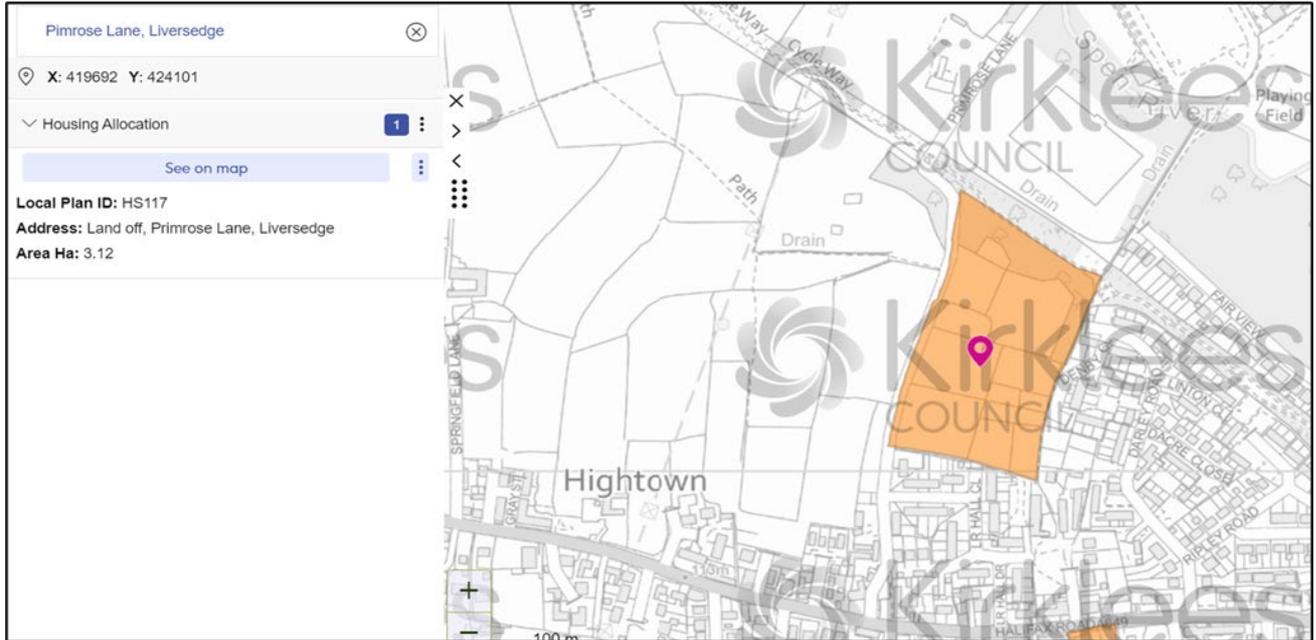


Figure 1.1: Allocation Site HS117: KOMPASS (Source: Kirkless.gov.uk)

## Scope of Report

- 1.8 This report 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.
- 1.9 The scope of this report has been informed by a pre-application note prepared by KC Highways Development Management, which sets out the key issues relevant to this site and the requirements for the planning application submission in respect of transport and highways. This response has been included as **Appendix B** of this report.
- 1.10 Following this introductory chapter, the remainder of this TA is structured as follows:
- **Section 2** – Provides a review of pertinent national, regional and local planning policy guidance.
  - **Section 3** – Provides a review of the baseline traffic conditions and the local highway network in the vicinity of the site, including a review of traffic related injury accidents.
  - **Section 4** – Provides a review of the accessibility of the site by sustainable modes of travel.
  - **Section 5** – Provides a detailed description of the development proposals.
  - **Section 6** – Provides a traffic impact assessment of traffic associated with the proposed development.

- **Section 7** – Provides a detailed review of existing parking conditions on Ripley Road and Darley Road, and outlines potential parking management proposals as part of the proposed access strategy for the development site.
- **Section 8** – Provides a Framework Travel Plan for the proposed development.
- **Section 9** – Provides the report’s summary and conclusions.

## 2 Policy Context

### Introduction

2.1 This Section of the report considers the national planning policy guidance, regional and local guidance pertinent in the context of the development proposals.

### National Planning Policy Framework

2.1 The National Planning Policy Framework (NPPF) was updated in 2021 and sets out the government’s planning policies for England and how these are expected to be applied. This revised Framework replaces the previous National Planning Policy Framework published in March 2012 and revised in July 2018 and February 2019. At the heart of the Framework is a presumption in favour of sustainable development.

2.2 As part of promoting sustainable transport, paragraph 110 of the revised NPPF states that in assessing applications for development, it should be ensured that:

- i) *“Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location.*
- ii) *Safe and suitable access to the site can be achieved for all users.*
- iii) *The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code.*
- iv) *Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree”.*

2.3 Paragraph 111 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”.*

### West Yorkshire Combined Authority Transport Strategy 2040

2.4 This transport strategy has replaced the West Yorkshire Local Transport Plan, which was published in 2011, and it provides the policy framework for the planning and delivery of improved transport infrastructure and services in West Yorkshire. It is supported by the following three objectives:

- i) *“Economy – create a more reliable, less congested, better connected transport network, increasing business productivity and access to wider labour markets.*
- ii) *Environment – have a positive impact on our built and natural environment and increase resilience against climate change.*

iii) *People and Place – put people first to create a strong sense of place - increasing access in a safe, inclusive way and encouraging walking and cycling for health and other benefits”.*

2.5 The Transport Strategy identifies the following six core themes (and associated policies) that the West Yorkshire Combined Authority will take forward to address the transport challenges and opportunities facing the region:

- Inclusive growth, environment, health and wellbeing.
- Road network.
- Places to live and work.
- One system public transport.
- Smart futures.
- Asset management and resilience.

2.6 The Transport Strategy recognises that the designation of the North Kirklees Growth Zone means that future transport infrastructure needs are starting to emerge around Batley Town Centre. Improved rail journey times and capacity improvements on the TransPennine rail corridor are also key priorities for Kirklees, along with rail station improvements and more rail user car parking. The Transport Strategy also highlights having better quality bus services and increased investment in walking and cycling infrastructure on short journeys.

### **Kirklees Local Plan**

2.7 The Kirklees Local Plan was adopted on 27th February 2019 replacing the Kirklees Unitary Development Plan.

2.8 The Local Plan sets out a number of key policies in respect of transport as follows:

- Policy LP 19 – Strategic transport infrastructure.
- Policy LP 20 – Sustainable travel.
- Policy LP 21 – Highway and access.
- Policy LP 22 – Parking.
- Policy LP 23 – Core walking and cycling network.

2.9 As previously detailed, the proposed development is part of an allocated housing site included in KC’s local plan and is identified as Site HS117.

## **Summary**

- 2.10 In the following sections of this TA report, Vectos has demonstrated that the residential development proposal at Primrose Lane in Liversedge accords with the guidance set out in the NPPF, and that the transport impacts on the area around the site will not be severe.
- 2.11 The above policy review identifies that the proposed development site is generally compliant with the main objectives and policies outlined within the relevant national, regional and local transport guidance.

### 3 Baseline Highway Conditions

#### Introduction

3.1 This Section of the report provides a description of the baseline conditions in the vicinity of the site, including the surrounding area, local highway network and a review of personal injury accident data.

#### Site Location and Context

3.2 The site is located in the western part of Liversedge, around 2km from Cleckheaton Town Centre and 2.4km from Heckmondwike Town Centre.

3.3 An aerial view of the site’s location including an approximate red line boundary is provided in **Figure 3.1**.



**Figure 3.1: Site Location (Source: Google Earth)**

3.4 The site is currently undeveloped and is bound by Primrose Lane on its western side and a traffic-free footway / cycleway on its northern side. Existing residential development forms the eastern and southern boundaries of the site.

#### Surrounding Highway Network

3.5 As previously described, Primrose Lane bounds the site on its western side, which in the vicinity of the site is a largely unsurfaced track between 2m to 3m in width. This route is wide enough to accommodate for one vehicle only and has limited passing places for two cars to pass one another.

- 3.6 Darley Road terminates at the eastern boundary of the site and serves existing residential dwellings in the surrounding area. Darley Road has a carriageway width of around 5.5m, which becomes Ripley Road at its southern end where the carriageway is slightly wider. This road is a residential cul-de-sac that is not subject to any parking restrictions, and vehicles associated with the adjacent residential properties can park on both sides of the carriageway or in the shared parking courts that are located along this route. From the boundary of the proposed site, Darley Road runs for approximately 300m before becoming Ripley Road. Ripley Road / Darley Road has a 30mph speed limit and is provisioned with street-lit footways.
- 3.7 To the southeast of the site, Ripley Road connects with the A649 Halifax Road, forming the minor arm of a priority T-junction that includes a ghost-island right turn arrangement. Halifax Road is also subject to a 30mph speed restriction, is a bus route, includes footways on both sides of the carriageway and is provisioned with street-lighting. Halifax Road is mainly a single carriageway route that is typically around 7m wide, and broadly runs in a west to east alignment between Hipperholme and Liversedge.
- 3.8 There is a DfT Traffic Count site on the A649 Halifax Road to the east of the site (DfT Count Site 17364), and this has been reviewed to provide an indication of existing traffic flows on Halifax Road (June 2018) in the weekday peak periods (see **Table 3.1**).

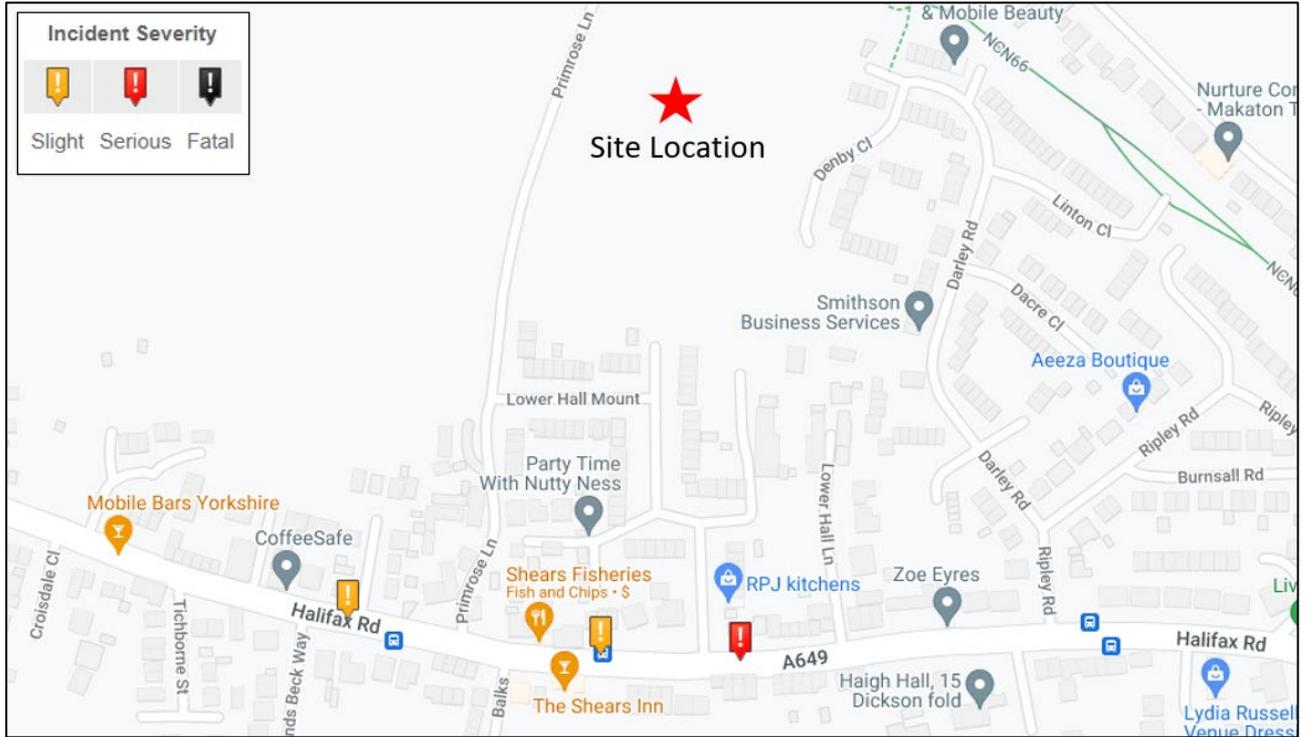
	Eastbound	Westbound
AM Peak (0800-0900)	612	383
PM Peak (1700-1800)	569	685

**Table 3.1: A649 Halifax Road 2018 Manual Count (Traffic Flows – Vehicles)**

- 3.9 It can be seen from Table 3.1 that two-way traffic flows on Halifax Road were recorded at 995 vehicles during the morning peak hour, and evening peak hour flows were recorded at 1,254 two-way vehicle movements. Whilst this 2018 survey data is around five years old, it gives some indication of likely levels of traffic on Halifax Road and is considered to be robust traffic data as it is before the Covid-19 pandemic. It also shows that the weekday evening peak hour is busier than the morning peak hour, and the survey data suggests tidal traffic flows associated with commuting to / from Liversedge and Heckmondwike in the east.

**Accident Record Overview**

- 3.10 A review of accident data for the five-year period between January 2017 and December 2021 has been conducted for Darley Road, Ripley Road and the A649 Halifax Road in the vicinity of the development site. This information has been sourced from online records of accident statistics made available by UK Local Authorities on Crashmap, a national database of traffic accidents, for the most recent five-year period that is available. An extract from the Crashmap website is shown in **Figure 3.2**.



**Figure 3.2: Accident Search Area Map (Source: Crashmap)**

- 3.11 As shown in Figure 3.2, a total of three injury accidents were recorded in the study area of which two were classified as slight in severity and one as serious.
- 3.12 None of the recorded incidents involved pedestrians or cyclist. One incident, which took place in 2017 involved a car and a motorcycle. The rider of the motorcycle received slight injuries following the collision. There have not been any accidents on Ripley Road and Darley Road, which is the proposed access route immediately adjacent to the site, including at the A649 Halifax Road / Ripley Road junction.
- 3.13 Whilst all accidents are regrettable particularly those that result in serious injuries the rate of accidents over a five-year period is not considered to be indicative of any underlying highway safety issues on the network and at the Halifax Road / Ripley Road junction. There is therefore no evidence that the proposed development would have any negative impact on highway safety.
- 3.14 In summary, the accident record does not reveal any significant safety concerns that would need to be addressed in relation to the residential development proposals at Primrose Lane.

## 4 Accessibility by Sustainable Modes of Transport

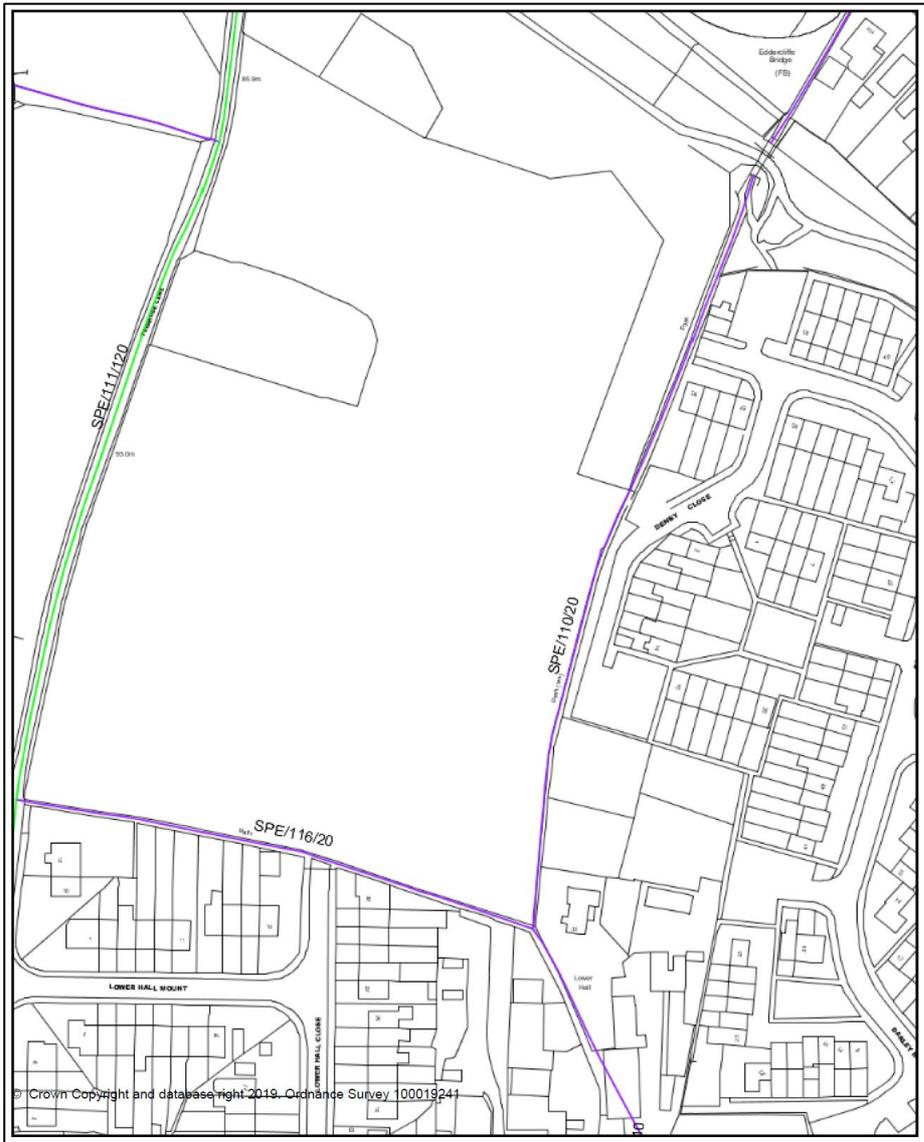
### Introduction

- 4.1 The National Planning Policy Framework states that opportunities to promote walking, cycling and public transport use should be identified and pursued.
- 4.2 The accessibility of the site by the following modes of travel has therefore been considered:
- Accessibility on foot.
  - Accessibility by cycle.
  - Accessibility by public transport.

### Accessibility on Foot

- 4.3 The site is well located to encourage journeys to be undertaken on foot.
- 4.4 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 1km, with a preferred maximum distance of 2km. Walking can also be promoted as part of a multi-modal journey, particularly with public transport.
- 4.5 The more recent CIHT document ‘Planning for Walking’ (2015) affirms this by stating that 80% of journeys shorter than a mile (approximately 1.6km) are made wholly on foot.
- 4.6 An analysis of the pedestrian routes in the area has been completed to identify areas situated within 1km and 2km catchments. This is presented in **Plan VN222468-G102**, which demonstrates that the walking catchment of the proposed site includes the entirety of Liversedge and parts of Littletown, Heckmondwike and Hightown.
- 4.7 Within this catchment a wide range of services and amenities are available, including a nursery, a primary school, a secondary school, a GP, pharmacy, post office, leisure centre with a gym and swimming pool, a church, a number of food and drink establishments along the A649 Halifax Road, and a variety of convenience stores.
- 4.8 The site’s location provides convenient access to a range of leisure opportunities as there are several parks located nearby and the Spen Valley Greenway corridor is located to the north of the site, all which can be reached within a short walking distance. The Spen Valley Greenway corridor route is a traffic free path, providing connections to Ravensthorpe / Ravensthorpe Railway Station, Cleckheaton and southeast parts of Bradford, which includes Newhall Odsal and Faxfleet.
- 4.9 There are bus stops located on the A638 Bradford Road and the Halifax Road corridors, and the services that use these stops provide access to other employment, leisure, and retail opportunities and destinations including Leeds and the towns of Heckmondwike and Cleckheaton.

- 4.10 Pedestrian infrastructure in the vicinity of the proposed development site is generally of a good standard, with Darley Road and Ripley Road between the site and Halifax Road being provisioned with footways on both sides of the road. There are footways on both sides of Halifax Road that are around 2m wide in the vicinity of the site, and to the east towards Liversedge Town Centre there is a pedestrian refuge crossing around 85m from the junction with Ripley Road that provides access to the catchment area to the southeast of the site. Traffic calming measures including speed cameras and ‘SLOW’ road markings are also in place to assist ensuring safe traffic conditions for all road users.
- 4.11 There are several existing Public Rights of Way (PRoW) in the vicinity of the proposed site and an extract from KC’s PRoW mapping is provided in **Figure 4.1**.



**Figure 4.1: Definitive Map of Public Rights of Way (Source: Kirklees Council)**

- 4.12 As shown in Figure 4.1, the proposed site is bound by several PRoW routes. Footpaths SPE/110/20 and SPE/116/20 run along the southern and eastern boundaries of the site respectively. Furthermore, Primrose Lane, running along the western edge of the site, is also a PRoW and a

bridleway (ref. number: SPE/111/120). Additionally, there is another off-road path running in parallel to the southern edge of the development site in a west-east alignment (ref. number: SPE/116/20) that connects to Primrose Lane to the west and path SPE/110/20.

- 4.13 On the basis of this review, it is concluded that the proposed site is well positioned to provide excellent opportunities for journeys to be undertaken on foot.

### Accessibility by Cycle

- 4.14 Cycling is increasingly being recognised as a viable alternative to the car and there has been sustained growth in cycling as both a mode of travel and leisure activity. DfT ‘Local Transport Note 1/20 Cycling Infrastructure Design’ states that, “two out of every three personal trips are less than five miles in length – an achievable distance to cycle for most people”.
- 4.15 With this in mind, **Plan VN222468-G103** displays a 5km cycle catchment of the site. This would equate to a journey of around 25 minutes using a leisurely cycle speed of 12km per hour. It is considered that this catchment represents the lower threshold of the potential cycle catchment of the site.
- 4.16 This plan illustrates that the 5km cycle catchment of the site encompasses the entirety of Liversedge, Heckmondwike, Cleakheaton, the northern boundary of Mirfield, the northwest parts of Dewsbury and the east of Batley. This catchment clearly demonstrates accessibility from the proposed site to a wide range of services, employment opportunities and amenities.
- 4.17 An extract from the West Yorkshire Interactive Cycling Map has been provided in **Figure 4.2** and illustrates cycling infrastructure in close proximity to the proposed development site. The location of the proposed site is denoted by a red star.

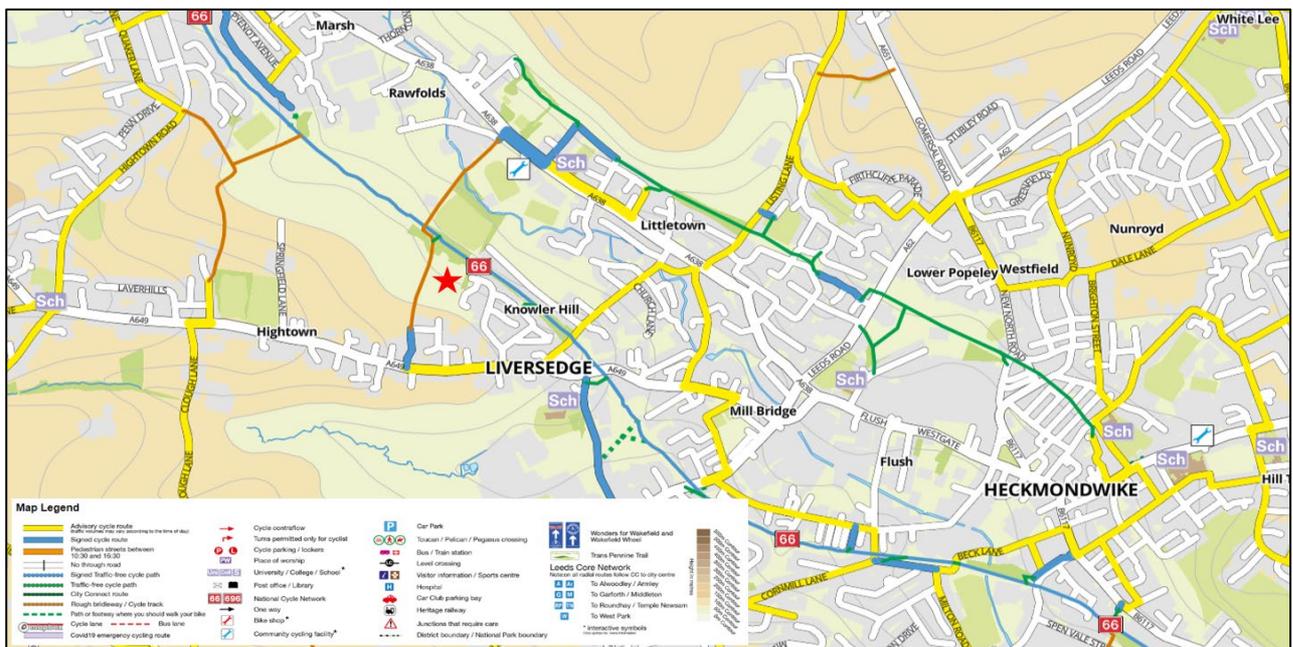


Figure 4.2: Cycle Infrastructure (Source: West Yorkshire Interactive Cycling Map)

- 4.18 As illustrated in Figure 4.2, the proposed site is located in close proximity to a network of advisory cycle lanes. This includes on the A649 Halifax Road and Knowler Hill to the east of the site, which provide routes towards Liversedge and Littletown, and Clough Lane to the west of the site provides a north-south route from Halifax Road towards the villages of Hartshead and Roberttown.
- 4.19 The National Cycle Network (NCN) Route 66 also runs along the northern boundary of the proposed development site, which is otherwise referred to as the previously mentioned the Spen Valley Greenway. This route runs into the nearby towns of Cleckheaton, Liversedge and Heckmondwike, and also provides wider cycle route connections to Bradford, Shipley, Dewsbury, Huddersfield and Leeds.
- 4.20 The highway network in the immediate vicinity of the site to the east is mainly residential in nature and accommodates both relatively low traffic speeds and flows. This is conducive with providing a cycle friendly environment. Overall, it is considered that the transport conditions in the vicinity of the site allow cycling to be promoted as a sustainable mode of travel.

### Accessibility by Public Transport

#### Bus

- 4.21 The IHT document ‘Guidelines for Planning for Public Transport in Developments’ (1999) suggests that the maximum walking distance to the nearest bus stop should not exceed 400m.
- 4.22 The closest bus stops to the site are located on the A649 Halifax Road immediately adjacent to the junction with Ripley Road, and are around 350m from the proposed development site. This represents a walking time of around between 4 to 5 minutes assuming an average walking speed of 80m per minute using the footways on Darley Road and Ripley Road. The westbound stop provides a flag and pole arrangement on the footway with a timetable, and the eastbound stop includes a shelter with seating and a timetable. It is considered that the eastbound bus stop on Halifax Road will be predominantly used by residents for outbound journeys due to the proximity of the centres of Liversedge and Heckmondwike to the east, and given its existing good standard it is not considered that bus stop improvements are needed to facilitate the development proposals.
- 4.23 Along the A638 Bradford Road, there are a few other different bus services provided, which is approximately 1km to the north of the development site. This equates to around a 13-minute walk via the PRow route on Primrose Lane. The pair of bus stops to the south of Primrose Lane both have a shelter with seating and a timetable.
- 4.24 **Table 4.1** below provides a summary of the bus services that operate on Halifax Road and Bradford Road.

Service No.	Route	Approximate Frequency (services per hour)					
		Mon – Fri				Sat	Sun
		AM Peak	Midday	PM Peak	Evening		
200	Heckmondwike - Leeds	2	2	2	1	2	1
260	Huddersfield - Cleckheaton	1	1	1	1	1	-
261	Huddersfield – Heckmondwike	1	1	1	-	1	-
268 MAX	Bradford - Wakefield	4	4	4	1	4	2

**Table 4.1: Frequency of Bus Services on A649 Halifax Road and A638 Bradford Road**

- 4.25 Table 4.1 shows that the Halifax Road bus stops serve the No. 200, 260 and 261 services. All services operate between every 30 minutes to hourly frequencies, Monday to Friday, and on Saturdays. The 200 bus route also provides an hourly service on the Sunday, and the 260/ 261 only provides a service every two hours between 10:49am to 16:49pm every Sunday.
- 4.26 The No. 268 MAX serves the Bradford Road bus stops. This service provides regular buses around every 15 minutes, Monday to Friday and on the Saturday. The frequency of bus services is reduced on a Sunday.
- 4.27 Additionally, there are two school services that run from the Halifax Road bus stops in the vicinity of the site. The No. 263 and AL1 run once in the morning between 07:00-08:00am and in the late afternoon between 15:00-16:00pm.
- 4.28 In summary, the site is considered to be accessible by bus.

Rail

- 4.29 The nearest train stations to the proposed development site are located in Batley and in Dewsbury, which are both approximately 6km east of the site. Although the train stations are not within the desired walking catchment area, Dewsbury Station could be accessed by bus from the site by using the No. 200 and 268 MAX bus services, and cyclists could also use the NCN Routes 66 and 69 to reach the station within an approximate 20-to-30-minute journey. There is also car parking available at Dewsbury Station.
- 4.30 Cycle parking is provided at both stations which facilitates the opportunity for linked cycle / rail journeys, while the rail operators TransPennine Express and Northern both allow bicycles on their services. This provides the potential for a linked cycle / rail journey.
- 4.31 From Batley Train Station there are generally hourly services operated to Huddersfield and Wigan. There is also a Leeds service operating at a 35 minute frequency.

- 4.32 At Dewsbury Train Station there are hourly services operating towards Redcar Central, Huddersfield, Manchester Airport, Newcastle, and Wigan. The same rail service that serves Batley Station also departs from Dewsbury every 35 minutes to Leeds.
- 4.33 In summary, the site is considered to be accessible by public transport.

## 5 Proposed Development

- 5.1 This Section of the report provides a description of the proposed development and details the site access strategy.

### Development Proposals

- 5.2 The planning application is for a residential development at the site to provide a total of 67 residential dwellings comprising the following mix of unit types:
- 55 residential houses.
  - 12 residential apartments.
- 5.3 The proposed site layout for the development has been included as **Appendix A** of this report.

### Access Strategy

#### Vehicle Access

- 5.4 It is proposed that the northern end of Darley Road will be extended into the site to the west of the junction with Denby Close to facilitate access to the proposed residential dwellings.
- 5.5 As outlined previously in this report, an existing PRow route crosses the proposed access into the development site (SPE/110/20 along the eastern boundary). At the time of writing this report, it is understood that discussions between the applicant and KC are ongoing to determine the mechanism for delivering the new access road over the PRow route in relation to enabling it to become dedicated highway that could be adopted. The PRow will also require a temporary diversion application to enable the construction of the new access road into the site. The above matters will need to be agreed with KC during the planning application review process. Also, the design requirements of the PRow route where it meets the new access road will be subject to more detailed review with KC Highways at the post submission stage, to ensure that the interaction between the PRow and the access road is safely accommodated by the proposed scheme.

#### Pedestrian and Cycle Access

- 5.6 As shown on the proposed site layout, direct footway connections are proposed to link the development to the existing PRow route on Primrose Lane and to the PRow along the eastern boundary of the site. The new access road connection with Darley Road will comprise of footways on both sides of the carriageway. This will ensure legibility of access to the surrounding area for pedestrians and cyclists, ensuring high levels of permeability and accessibility on foot.
- 5.7 A direct connection from the site to NCN 66 (Spenn Valley Greenway) to the north is also proposed, and again this will ensure ease of access for pedestrians and cyclists to an established and well-maintained traffic free route.
- 5.8 The design of the proposed links to these external active travel routes that will be accessible to cyclists will be generally in line with the Local Transport Note (LTN) 1/20 guidance.

## Internal Site Layout

- 5.9 The proposed design of the site pays due cognisance to the ‘Kirklees Highway Design Guide Supplementary Planning Document’ (SPD) (adopted in November 2019), which includes the following relevant sections:

*“The council encourages developers to construct highways to a standard that the Highway Authority can adopt via Section 38 of the Highways Act”.*

*“Within new residential areas, streets need to accommodate various types of movement in a safe and convenient way. The needs of motorised traffic must be balanced with those of pedestrians of all ages and abilities, cyclists and users of public transport. Highway designs should correspond to a street’s intended function and adapt to where that function changes along its length. Streets should also be designed so that they respond to their context”.*

- 5.10 The proposed internal layout adopts the general principles set out in KC’s SPD, with a particular emphasis on the guidelines outlined in Table 1 of the document. The highway design elements of the proposed internal layout have also taken into consideration the detailed feedback contained in the pre-application note by KC Highways Development Management (included as **Appendix B**). The main access road into the site is designed as a Local Residential Street (Type B), which provides access to Shared Surface Street (Type C) arrangements in the southern and northwest parts of the site, and the northwest Type C street leads to a proposed shared drive. The proposed carriageway widths, visitor parking spaces, visibility splays and forward visibilities (based on a 20mph road speed for the Type B street and 15mph for the Type C street) are shown on **Drawing VN222468-D100 Rev D**. It is considered that 15mph road speeds will be self-enforcing in the southern part of the site given the proposed horizontal alignments of the internal road, however additional traffic calming measures could be introduced on the bends subject to the view of the Local Highway Authority. The two internal priority junctions can achieve visibility splays of ‘x’ distance 2.4m by a ‘y’ distance of 25m in both directions.
- 5.11 The road layout accommodates a 11.85m refuse collection vehicle, which has been demonstrated through an AutoTRACK assessment presented in **VN222468-TR100 Rev D**, and the proposals for bin storage and collection arrangements are designed in general accordance with the relevant KC guidance document entitled ‘Emergency Access, Waste Management, Servicing and Deliveries’ (April 2020 version 1). The above tracking drawing also demonstrates the access manoeuvres for large cars and light van deliveries at the private drives.

## Parking

- 5.12 Parking provision across the proposed site will be provided in accordance with Kirklees Highway Design SPD.
- 5.13 It should be noted that KC do not have adopted car parking standards, however they provide the following guidelines in their SPD:
- 2-3 bedroom dwellings provide a minimum of two off-street spaces.
  - 4+ bedroom dwellings provide three off-street spaces.

- 1-2 bedroom apartments provide one space (3+ bed two spaces).

- 5.14 The proposed parking provision across the site is in general accordance with this guidance.
- 5.15 In accordance with the SPD and pre-application advice provided by KC Highways, facilities to charge a minimum of one electric vehicle will be provided for each dwelling.
- 5.16 Secure cycle parking storage will be available within the curtilages of each dwelling. If desired, residents will be able to secure bicycles in rear gardens or within garages.
- 5.17 In addition to dedicated residents parking, 18 visitor bays are proposed to be provided across the site equating to a ratio of one visitor space per four residential dwelling. This proposed provision is in line with the guidance outlined in the Kirklees SPD and the advice received in the KC pre-application note.

## 6 Traffic Impact Assessment

### Introduction

6.1 This section of the report provides a traffic impact assessment of the proposed development and includes a detailed capacity assessment of the A649 Halifax Road / Ripley Road junction.

### Baseline Traffic Flows

6.2 The assessment of the Halifax Road / Ripley Road priority junction is informed by a traffic survey undertaken on Tuesday 8<sup>th</sup> November 2022, with the full count data included as **Appendix C** of this report.

6.3 From the traffic surveys, the following weekday peak hours were identified:

- AM Peak Hour – 07:30-08:30.
- PM Peak Hour – 16:30-17:30.

6.4 The 2022 baseline traffic flows for the above peak hours are presented in **Figure 1**.

### Committed Developments

6.5 Three other residential allocation sites have been considered in this traffic impact assessment in line with the pre-application feedback from KC Highways. These are Sites HS113 (27 dwellings), HS118 (42 dwellings) and HS122 (37 dwellings).

6.6 The development traffic flows for the three allocation sites are shown in **Figure 2**.

### Background Traffic Growth

6.7 A future year of 2027 has been adopted for this assessment, which represents a position around five years post-registration of the planning application.

6.8 In order to uplift background traffic flows, growth factors have been calculated using Version 7.2 of the TEMPRO database using the middle super output area where the site is located, which is 'E02002278 - Kirklees 008'. The growth factors are presented in **Table 6.1**

	Scenario	
	AM Peak	PM Peak
2022-2027	1.0394	1.0399

**Table 6.1: TEMPRO Growth Factors 2022-2027 (E02002278 - Kirklees 008)**

### 2027 Baseline 'Without Development'

6.9 The surveyed traffic flows presented in Figure 1 have been uplifted using the growth factors presented in **Table 6.1**. These growthed traffic flows have been combined with the committed

development flows shown in Figure 2 to generate a 2027 Baseline ‘Without Development’ traffic scenario. These future year flows are presented in **Figure 3**.

**Proposed Development Trip Generation**

- 6.10 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 focused upon sites in comparable locations (Suburban / Edge of Town sites) and of a similar scale.
- 6.11 The trip rates and resultant traffic generation associated with 67 dwellings are summarized in **Table 6.2** for the typical network AM and PM peak hours, with the full TRICS report provided at **Appendix D**.

	Trip Rate			Trip Generation		
	Arr	Dep	Total	Arr	Dep	Total
AM Peak	0.145	0.397	0.542	10	27	37
PM Peak	0.374	0.166	0.54	25	11	36

**Table 6.2: Proposed Development Trip Rates and Trip Generation**

- 6.12 It can be seen from Table 6.2 that the proposed residential development could potentially be expected to generate 37 two-way trips during the weekday morning peak hour and 36 two-way trips during the evening peak hour.

**Proposed Development Trip Distribution and Assignment**

- 6.13 Traffic arriving and departing from the proposed development site has been distributed using existing turning movements at the A649 Halifax Road / Ripley Road junction. These turning movements are generated by existing residential properties in close proximity to the proposed development site so are considered to be representative of the likely travel patterns of future residents. The adopted trip distribution profile used in this assessment is shown in **Figure 4**.
- 6.14 Using the trip distribution profile, the forecast vehicle movements presented in Table 6.2 have been assigned to the study network and these flows are presented in **Figure 5**.

**2027 Baseline ‘With Development’**

- 6.15 The 2027 Baseline ‘Without Development’ traffic flows presented in Figure 3 have been combined with the forecast development traffic flows presented in Figure 5 to generate a 2027 Baseline ‘With Development’ traffic flow scenario. This traffic flows showing the inclusion of vehicle trips from the proposed residential development is presented in **Figure 6**.

**A649 Halifax Road / Ripley Road – Detailed Capacity Assessment**

- 6.16 At the request of KC Highways, a detailed capacity of the A649 Halifax Road / Ripley Road priority junction has been undertaken to support the planning application. The industry standard

JUNCTIONS 10 modelling software package has been used to assess the junction for both the weekday AM and PM peak hours.

- 6.17 JUNCTIONS 10 uses Ratio of Flow to Capacity (RFC) to predict the capacity of a junction, with RFC values in excess of 0.85 indicating that a junction is at or approaching capacity. The software also includes forecasts for queuing and delay.
- 6.18 The junction has been assessed with the 2022 survey flows, the 2027 Baseline ‘Without Development’ and ‘With Development’ traffic flows. Full modelling outputs have been included as **Appendix E** of this report and a summary of the results for the 2027 scenarios is included in **Table 6.3**.

		2027 Baseline ‘Without Development’			2027 Baseline ‘With Development’		
		RFC	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)
AM	Ripley Road	0.24	0	13	0.32	1	15
	A649 Halifax Road	0.07	0	10	0.09	0	10
PM	Ripley Road	0.08	0	8	0.10	0	8
	A649 Halifax Road	0.13	0	9	0.18	0	9

**Table 6.3: Proposed Development Trip Rates and Trip Generation**

- 6.19 As shown in Table 6.3, the junction is predicted to operate with minimal queuing and delay in the weekday morning and evening peak hours, for both the 2027 Baseline ‘Without Development’ and 2027 Baseline ‘With Development’ scenarios.
- 6.20 On the basis of the above, it is robustly concluded that the proposed residential development would have no significant impact on the operation of the local highway network. Also, based on the development vehicle trip generation at the Halifax Road / Ripley Road junction it is considered that no further off-site junctions require detailed assessments.

**Traffic Impact Assessment Conclusions**

- 6.21 This Section of the report has presented a traffic impact assessment for the proposed development to quantify the likely impact of traffic on the operation of the local highway network.
- 6.22 As shown, even through the adoption of robust trip rate forecasts, the proposed development will generate a minimal level of traffic. Furthermore, the impact of development traffic has been assessed at the A649 Halifax Road / Ripley Road junction. The change in performance at this junction once the site is operational would be imperceptible to other road users.
- 6.23 In summary, the traffic impact of the proposed development cannot reasonably be considered to be severe, and as a result the tests included within the NPPF are not exceeded.
- 6.24 As previously detailed within this report, there are no known existing highway safety issues on the local highway network. On the basis of the minimal impact of the proposed residential development

on the operation of the highway network in the vicinity of the site, there is no evidence to suggest that the proposals would have any detrimental influence on highway safety.

## 7 Ripley Road and Darley Road Detailed Review of Parking and Proposals

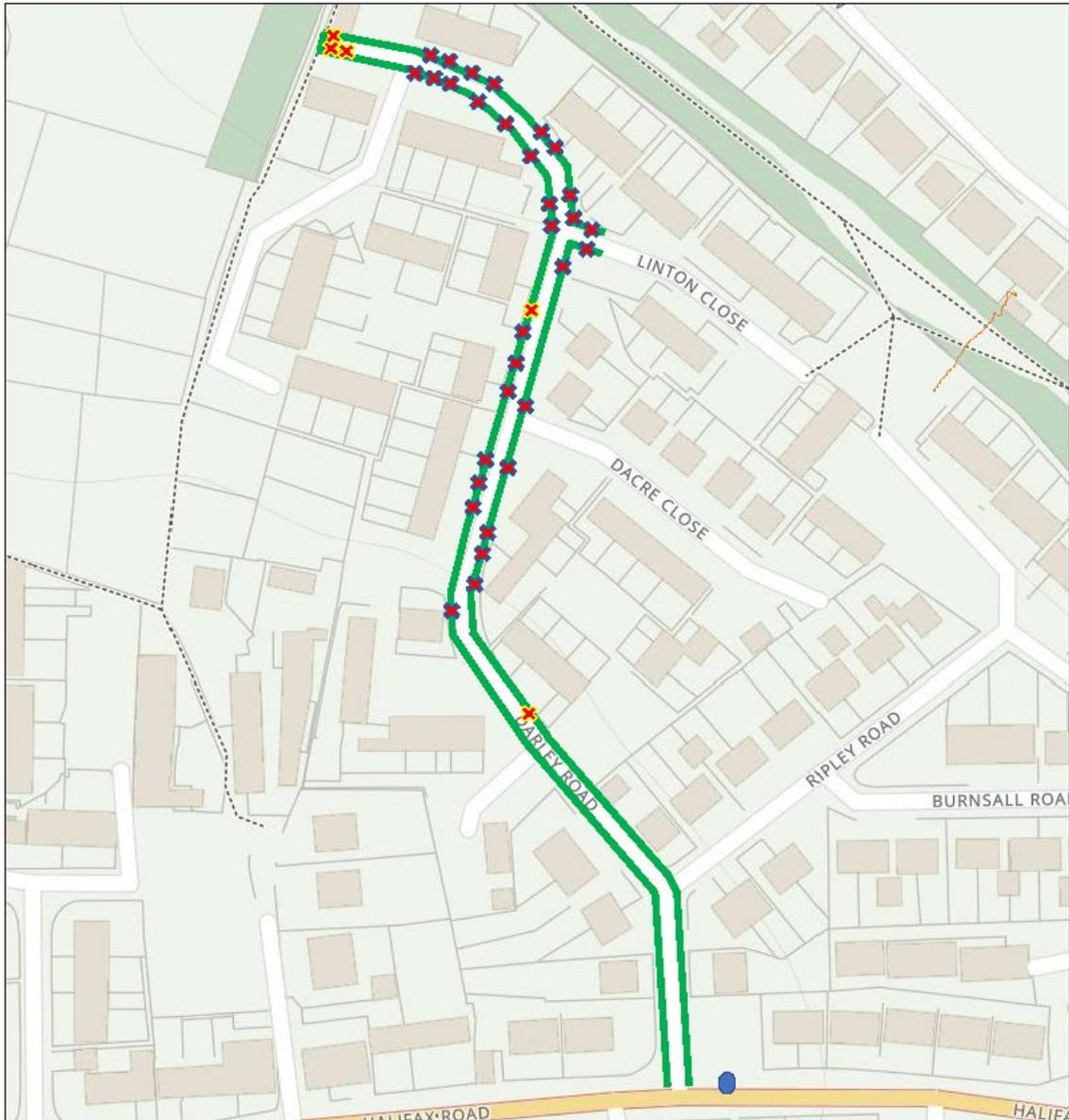
### Introduction

- 7.1 This Section of the report sets out an assessment of parking conditions on Ripley Road and Darley Road. A strategy for managing this existing parking demand is considered to ensure access to the proposed residential development, particularly in respect of refuse and emergency vehicles.

### Assessment of Parking Conditions on Ripley Road and Darley Road

- 7.2 Parking surveys and observations were undertaken on the Ripley Road-Darley Road route that links the site with the A649 Halifax Road. Two surveys were undertaken at 00:30 on Friday 4th November and at 00:40 on Wednesday 9th November 2022, with the full data included as **Appendix C** of this report.
- 7.3 The purpose of the parking surveys was to review the existing level of on-street residential car parking that takes place on this highway route, and to consider the effects on the carriageway width in respect of vehicle access to the site.
- 7.4 **Figure 7.1** presents the parking survey undertaken on Friday 4th November 2022 and **Figure 7.2** shows the parking survey undertaken on Wednesday 9th November 2022. As shown, the parking survey differentiates between parking fully in the carriageway and parking partially on the footway and carriageway.

Ripley Rd/Darley Rd \_Parking Beat 1 – 0030 Fri 4th Nov 2022



Key;

- - Parking layby
- - Unrestricted parking
- x - Parked vehicle
- x - Footway Parking
- - Double Yellow Line
- - Bus Stop

Total Parked = 34  
Capacity approx. = 100

Figure 7.1: Parking Beat Survey 1 – Friday 4<sup>th</sup> November 2022

Ripley Rd/Darley Rd\_Parking Beat 2 – 0040 Weds 9th Nov 2022



Figure 7.2: Parking Beat Survey 2 – Wednesday 9th November 2022

- 7.5 As shown in Figures 7.1 and 7.2, a maximum on-street parking occupancy of 34 vehicles was recorded with all parking taking place on Darley Road north of Ripley Road.
- 7.6 In the pre-application note from the Local Highway Authority, KC Highways have raised concerns regarding potential access restrictions for vehicles on Ripley Road and Darley Road as a result of on-street parking.
- 7.7 It is important to note that an existing situation on the residential estate roads adjacent to the site is a refuse vehicle accessing Denby Close, which is at the northern end of Darley Road. This demonstrates that refuse vehicles currently access and egress along the full extent of Darley Road. There are shared parking courts that are located along Ripley Road and Darley Road, which provide off-street parking spaces for the adjacent residential properties. Also, it should be noted that Manual for Streets guidance shows that a 4.1m carriageway width can facilitate the passing of two cars simultaneously.
- 7.8 The parking survey results for Friday 4th November 2022 show that there are a plenty of passing places on Darley Road, either on sections where there is no on-street parking or where parking occurs on one side of the carriageway i.e. the effective carriageway width is likely to be reduced to around 4.5m. To the south of Linton Close the straight carriageway alignment helps to reduce the effects of on-street parking on vehicle access along this section of Darley Road. However, to the north of Linton Close there is a greater level of on-street parking, including a number of locations where there is footway parking occurring on both sides of the carriageway (approximate effective carriageway width of 3.5m), and this section is on a bend. The parking survey results for Wednesday 9th November 2022 show a very similar pattern of on-street parking, and it is considered that Darley Road to the north of Linton Close is the section of carriageway that is most restricted by this activity in terms of vehicle access.
- 7.9 On the basis of the results of the parking surveys, it is considered that the potential introduction of a Traffic Regulation Order (TRO) along Darley Road could be an appropriate means of managing existing on-street parking demand and ensuring unrestricted access to the proposed residential development. The TRO would likely be in the form of double or single yellow lines on one or both sides of the carriageway.
- 7.10 To assist, **Figure 7.3** shows an indicative proposed location for this potential TRO. The suggested approach seeks to strike a balance between restricting on-street parking at potential pinch points on Darley Road, including adjacent to the location for the proposed new access road, and ensuring that existing on-street parking demand is safely accommodated and not simply displaced elsewhere on other residential estate roads in the vicinity.
- 7.11 As set out earlier in Section 3, the review of the recent accident record in the vicinity of the site has not identified any accidents at the A649 Halifax Road / Ripley Road junction to suggest that there are underlying highway safety issues. As a result, it is not considered that any safety mitigation measures are required at this junction to facilitate the development proposals.



**Figure 7.3: Potential Traffic Regulation Order Strategy for Darley Road**

7.12 Further discussions with KC Highways are requested on the findings of the detailed parking review and the associated potential TRO strategy for Darley Road, and it is proposed that these take place during the planning application review period to ensure that an acceptable approach is agreed.

## 8 Framework Travel Plan

### Introduction

- 8.1 This section of the report sets out a Framework Travel Plan for the proposed residential development. It is proposed that a Detailed / Implementation Travel Plan will be produced following the occupation of the development, at which point accurate baseline travel information could be obtained.

### Travel Plan Approach

- 8.2 Travel Plans are an increasingly important tool in order to facilitate sustainable development. Together with Transport Assessments, they provide the mechanism for assigning and managing multi-modal access to development sites.
- 8.3 The benefits of a Travel Plan include an increased choice of transport mode and reduced journey times. Benefits should include a strong emphasis towards the personal advantages of using sustainable transport initiatives. These are often not evident once such alternative modes of travel are used and include cost saving, time saving and social benefits.
- 8.4 The development and implementation of the Travel Plan should be a dynamic process subject to a continuous cycle of action monitoring and review. This should be achieved in order to give the Travel Plan a recognisable direction and focus towards its goals. It is therefore vital that objectives are set out for both the developer and occupiers of the development.

### Key Travel Plan Policy

- 8.5 The future Travel Plan will be developed with reference to specific policy and guidance. This will ensure that a high-quality Travel Plan is developed. The documentation includes:
- National Planning Policy Framework.
  - Good Practice Guidelines: Delivering Travel Plans through the Planning Process.
  - Travel Plans, Transport Assessments and Statements in Decision-Taking.
  - Making Residential Travel Plans Work: Guidelines for New Development.
  - Kirklees Highway Design Guide SPD.

8.6 Within the DfT guidance ‘Good Practice Guidelines: Delivering Travel Plans through the Planning Process’, the Travel Plan pyramid sets out the various facets of a Travel Plan that are key to ensuring the Travel Plan is successful. The pyramid within the aforementioned guidance is reproduced in **Figure 8.1**.

**Figure 8.1: Travel Plan Pyramid**



**Aim of the Travel Plan**

8.7 Essentially, the aim of the Travel Plan will be to minimise the number of car trips generated by the development, as well as encourage residents and visitors to use sustainable modes of transport.

8.8 Whilst the scope of the detailed Travel Plan is to be agreed at a later date, it is certain that the Travel Plan would include a number of objectives and identify a range of measures that are to be implemented in order to achieve these objectives.

**Travel Plan Objectives**

8.9 In summary, the objectives of the Travel Plan would include the following:

- To provide residents and visitors with convenient, safe and viable alternatives to the car in order to access the site as well as local destinations and amenities.
- To regularly monitor the means of travel used by residents and visitors to encourage transfer to the most sustainable modes, as achieved through the implementation of the Travel Plan.
- To reduce the environmental impact of the site as a whole, and promote a commitment to environmental values.

8.10 The following is a sub-set of objectives, which are reflective of the aforementioned overarching objectives:

- To raise awareness amongst residents and visitors of the detrimental impacts of car use in order to encourage the use of alternatives. This would be achieved by promoting benefits such as cost savings and health advantages etc.
- To encourage safe and viable alternatives to single occupancy car trips for trips generated by the residential development.
- To ensure the ongoing development and implementation of sustainable travel practices in the longer term.

### Targets

8.11 The success of the Travel Plan will be measured against a series of targets. However, as the development is not operational and baseline travel surveys have not yet been undertaken, it is not possible to set targets. This section therefore outlines a process for establishing appropriate targets.

8.12 Appropriate targets for a residential development mainly surround the reduction of vehicle trips, especially in the peak hours. Indicators of this target include monitoring the number walking, cycling, bus and rail trips to and from the site. It should be noted that specific aims of the Travel Plan must take account of factors including housing occupancy, the residential composition and realistic transport options available to residents and visitors.

8.13 Guidance produced by the DfT suggests that the main target should be to reduce the number of car trips generated by the site per day. It is also suggested that targets could also be set for other modes of transport, for example, bus patronage or walking trips.

8.14 Following the completion of the baseline travel surveys, a range of targets would be developed, with a view to:

- Promoting healthy lifestyles and sustainable, vibrant communities.
- Minimising the number of single occupancy car trips generated by the site.
- Providing adequately for those with mobility difficulties.
- Maximising the number of trips made by sustainable modes.
- Supporting access to and from the site by residents and visitors.

8.15 It is important that the targets are SMART (Specific, Measurable, Achievable, Relevant and Time-based) and meaningful to the residents and visitors who are participating in the Travel Plan.

## Measures

- 8.16 The Travel Plan’s proposed measures need to be linked with its targets and desired outcomes. It would therefore be necessary to implement a number of “hard” and “soft” measures in order to achieve such outcomes. The measures would be part of an action plan with timescales for delivery and individuals responsible identified, and could include:
- The distribution of maps showing safe walking and cycling routes.
  - On-site provision of public transport information, including bus routes and rail services.
  - Car share promotion, including events with opportunities for finding a match amongst residents.
  - Providing the service of personal travel advice.
  - Publication and effective distribution of both the Travel Plan and specific initiatives.

## Cycling

- 8.17 Residents and visitors to the site may wish to cycle and will be to able to accommodate bikes within dwellings, garages or rear gardens. Other measures could include:
- Production of maps showing cycle routes and facilities.
  - Arrange organised cycle rides for residents.

## Walking

- 8.18 Walking offers many health benefits and fits in well with the growing interest in a healthy lifestyle. As mentioned earlier in this report, the walking facilities surrounding the development site are of a good standard and should encourage travel on foot. In addition to the provision new internal footways around the site and connections with the external networks, walking maps and information on access to local amenities could be made available to users of the site along with other potential measures.

## Public Transport

- 8.19 The following initiatives will be considered to encourage uptake of trips by bus and rail modes:
- Seek to negotiate discounted travel passes from public transport operators, including the potential provision of Residential Metro Cards to be made available to some households subject to demand (to be reviewed with KC Highways and West Yorkshire Combined Authority (WYCA) at the post submission stage).
  - Provision of public transport information and timetables for residents and visitors.

## Car Sharing

- 8.20 Car sharing offers significant benefits not just for the environment but also financially. Therefore, consideration will be given to organising a car sharing scheme that is specifically aimed at finding matches amongst residents and visitors who would be able to car share when travelling to and from their daily commutes.
- 8.21 Liftshare (<https://liftshare.com/uk>) is one example of an existing car sharing platform that could be promoted to occupants at the residential development.

## Travel Plan Co-ordinator

- 8.22 It would be necessary to appoint a Travel Plan Co-ordinator for the development prior to it becoming operational to deliver the Travel Plan initiatives and bring forward the associated action plan. The Travel Plan will be implemented under the control of a Travel Plan Co-ordinator who will drive the work forward, promote the measures and be a key contact point for residents. Initially, the Travel Plan Co-ordinator role could be the responsibility of the developer, with the ultimate aim for a person(s) based at the site to manage the Travel Plan.
- 8.23 As well as ensuring the success in terms of improving modal split, the Travel Plan Co-ordinator should liaise with residents to ensure the promotion of sustainable alternatives. The Travel Plan Co-ordinator should also liaise with the Local Authority and other key stakeholders, like the WYCA, on a regular basis to obtain information and share ideas. This would also provide the opportunity to review the Travel Plan on a periodic basis to monitor its effectiveness and to agree new measures required to meet the Travel Plans aims, objectives and targets.
- 8.24 The following bullet points summarise the role of the Travel Plan Co-ordinator:
- To be the key decision maker on day-to-day matters of implementation of the Travel Plan.
  - Liaise with users of the site as well as KC, WYCA, other external organisations and stakeholders.
  - To provide a point of contact for residents and visitors in relation to travel advice.
  - To promote the use of travel modes other than the car, including the distribution of publicity material and travel information.
  - Ensuring that all relevant information is available to users and that up-to-date information is clearly displayed and distributed.
  - To co-ordinate the implementation of Travel Plan measures.
  - Data collection, surveys, monitoring and report production.

## Promotion, Communication & Training

8.25 The Travel Plan Co-ordinator will be responsible for the promotion of the Travel Plan and for the communication of its targets and objectives to residents and visitors. The following measures could be undertaken to ensure that this is done:

- Provide information in communal areas around the site.
- Provide residents and visitors with a Travel Information Brochure on available travel options.
- Promote and reinforce the aims of the Travel Plan to users on a regular basis.

## Monitoring

8.26 Once the site is operational, then it would be necessary to monitor the plan on a regular basis. This would be one of the roles of the Travel Plan Co-ordinator, and the likely steps would include:

- Post occupation / baseline travel survey.
- Annual Progress reviews (including travel surveys).
- Liaison with the KC Travel Plan Officer and WYCA Officers.

8.27 The Travel Plan monitoring arrangements and associated budgetary requirements would be subject to further review with KC Highways at the post submission stage.

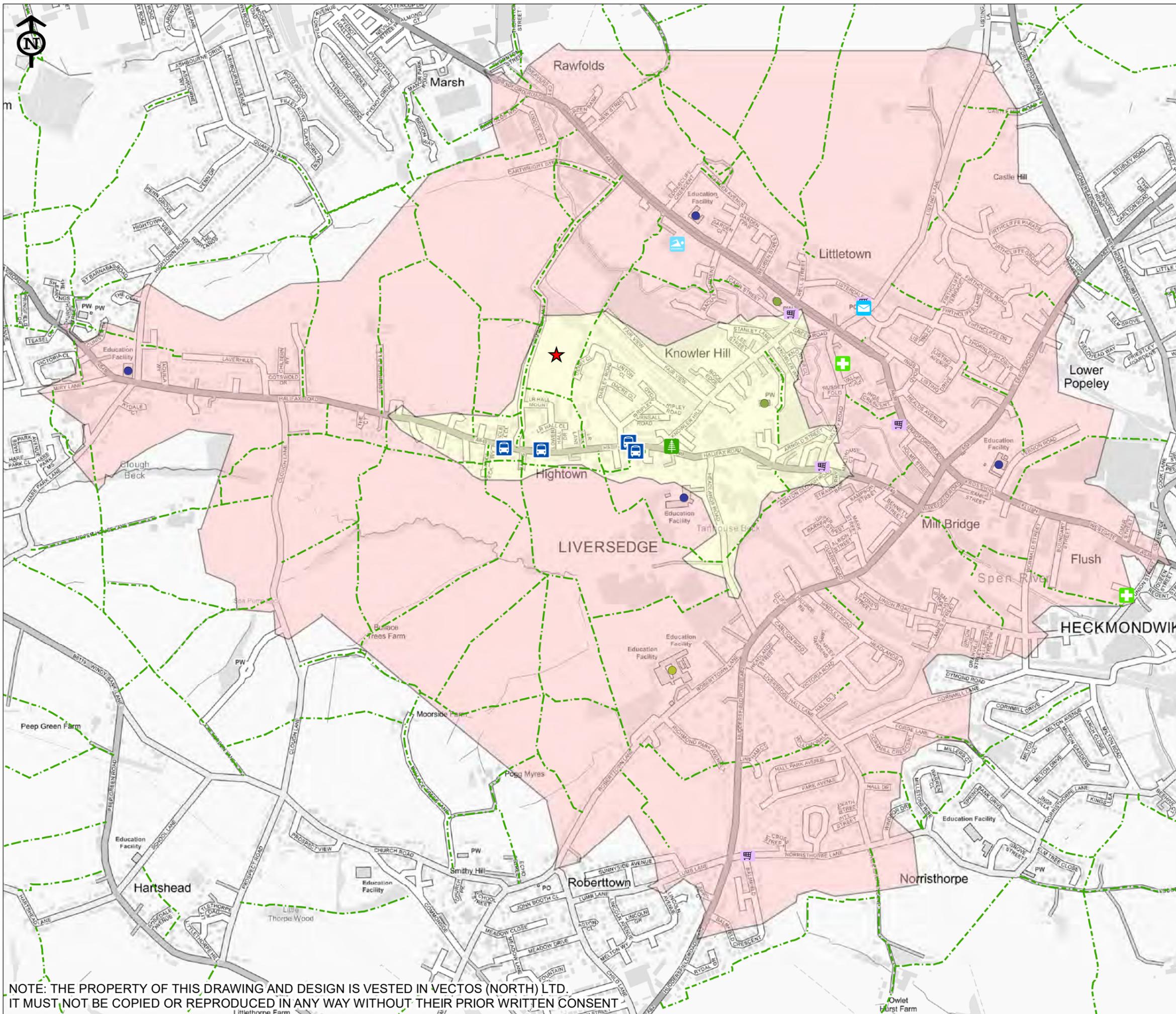
## 9 Summary and Conclusions

- 9.1 Vectos has been commissioned by Jones Homes (Yorkshire) Ltd to provide highways and transportation advice in support of a planning application for a proposed residential development in Liversedge in Kirklees, West Yorkshire.
- 9.2 The proposed scheme will provide a total of 67 residential dwellings, comprising of 55 residential houses and 12 residential apartments.
- 9.3 Based on the information on presented within this report, the following key conclusions can be drawn:
- The proposed development site is generally compliant with the main objectives and policies outlined within the relevant national, regional and local transport guidance.
  - There are no known highway features that contribute to the occurrence of accidents that would need to be addressed as part of this application.
  - The site is located in an accessible location, is well-placed to facilitate trips by residents on foot / bicycle and by public transport, and benefits from good access to the wider highway network. The site is located adjacent to NCN 66 Spen Valley Greenway and other established sustainable transport infrastructure. The proposed site layout will provide direct connections to NCN 66 and Public Rights of Way ensuring future residents and visitors have immediate access to these routes.
  - It is proposed that the northern end of Darley Road will be extended into the site to the west of the junction with Denby Close to facilitate access to the proposed residential dwellings.
  - The transport elements of the internal layout of the site are considered to generally accord with the Kirklees Highway Design Guide SPD and the Council’s guidance document ‘Emergency Access, Waste Management, Servicing and Deliveries’ (April 2020 version 1).
  - The proposed parking provision across the site is in general accordance with KC’s parking guidelines, and the internal layout is suitable to facilitate access for refuse and delivery vehicles.
  - The traffic impact of the proposed development will be minimal and have no discernible impact on the operation of the local highway network.
  - An assessment of parking conditions on Ripley Road and Darley Road has been undertaken, and a potential TRO strategy for Darley Road maybe needed as part of a strategy for managing the existing on-street parking demand to ensure access to the proposed residential development.
  - A travel plan framework is proposed as part of the transport submission, and this can be implemented to promote and encourage sustainable travel at the site.

## Conclusion

- 9.4 The NPPF states that, “*development should only be prevented or refused on highway grounds if the residual cumulative impacts on the road network would be severe*”. Although there are some matters that will require further discussion and review with KC Highways at the post submission stage, it is considered that this report has demonstrated that the residual cumulative impact of development would not be severe.
- 9.5 On this basis, there are no material reasons why the proposed residential development should not be granted planning consent on highways and transportation grounds.

# Plans



**Legend**

- ★ Site Location
- 🚌 Bus Stop
- Public Rights of Way Route

**Amenities**

- 🛒 Convenience Store / Supermarket
- 🌳 park
- 🏥 Pharmacy
- 📧 Post Office
- 🏊 Swimming Pool
- 🕌 Place Of Worship
- 🎓 Primary Education
- 🎓 Secondary Education

**Walking Catchment**

- 0 - 1 km
- 0 - 2 km

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CLIENT:  
**Jones Homes (Yorkshire) Ltd**

PROJECT TITLE:  
**Primrose Lane, Liversedge Planning Application**

DRAWING TITLE:  
**Walking Catchment with Amenities**



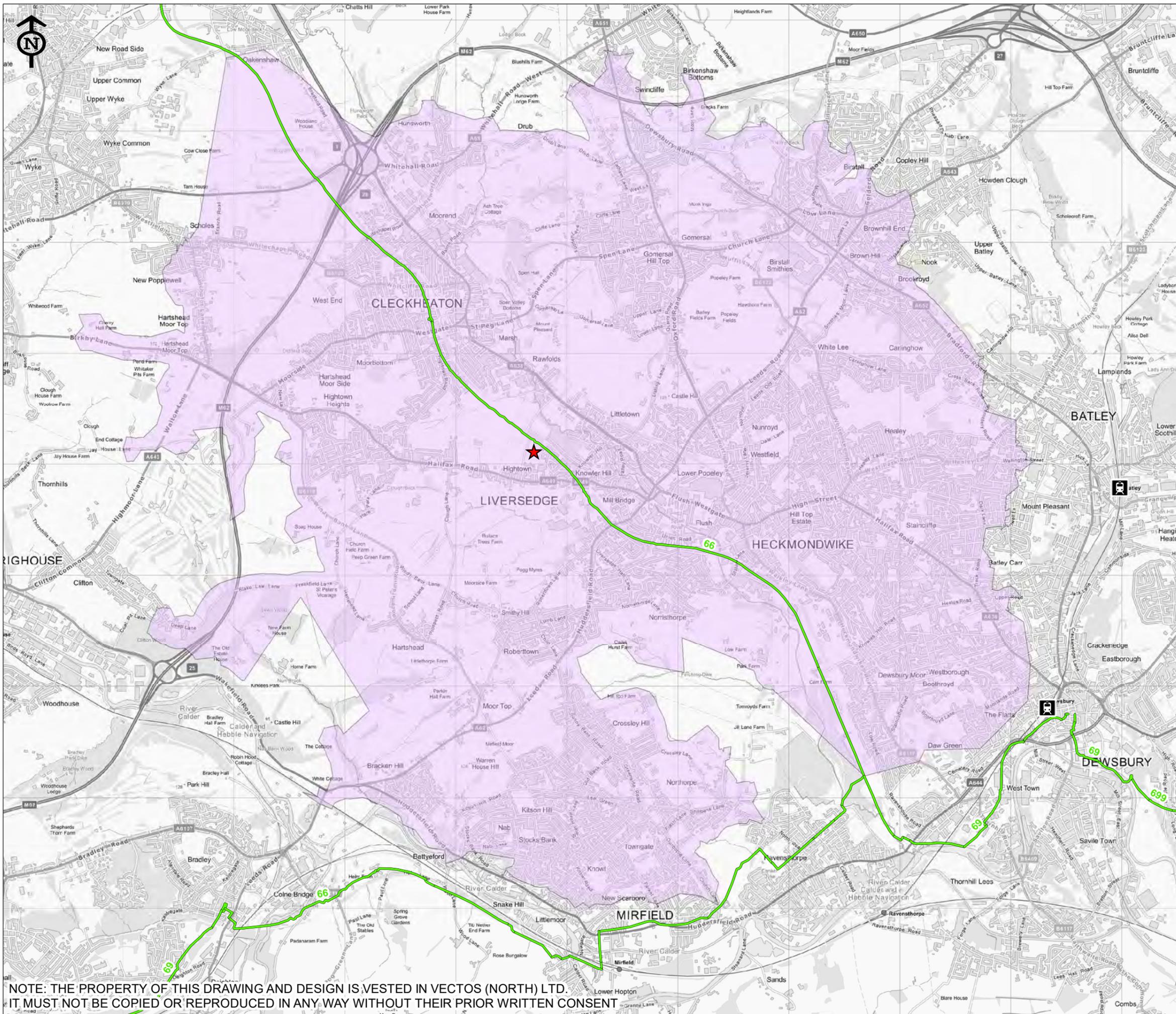
DRAWN: AT CHECKED: OM DATE: 22/03/2023



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 t:0161 228 1008 e:manchester@vectos.co.uk

DRAWING NO: VN222468-G102 REVISION: 1

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**Legend**

- ★ Site Location
- 🚉 Railway Station

**National Cycle Network (NCN) Route**

- NCN Route (66 and 69)

**Cycling Catchment**

- 0 - 5 km

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CLIENT:  
**Jones Homes (Yorkshire) Ltd**

PROJECT TITLE:  
**Primrose Lane, Liversedge Planning Application**

DRAWING TITLE:  
**Cycling Catchment**

SCALE: 0 0.7 1.4 km

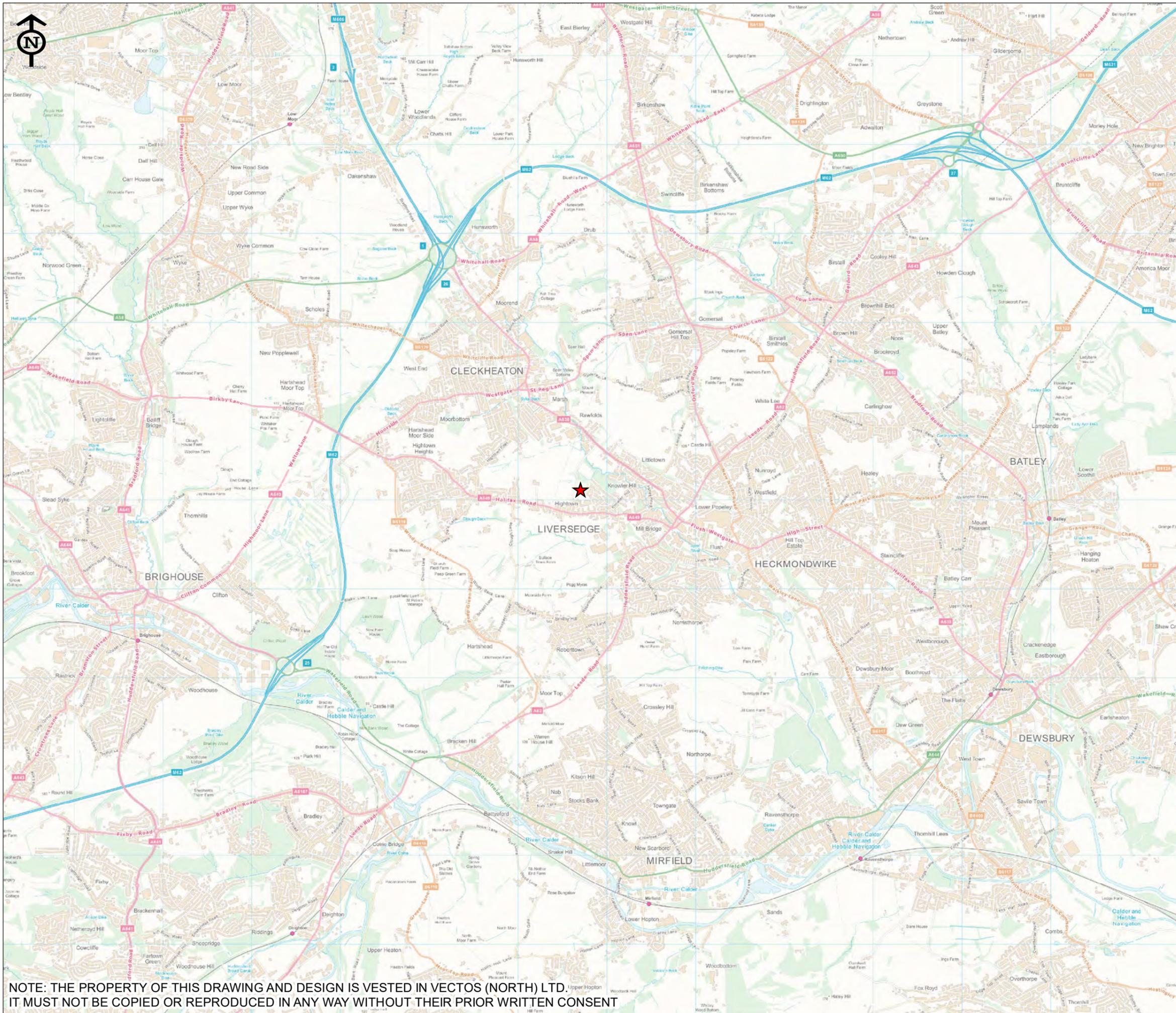
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**Legend**

★ Site Location

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CLIENT:

Jones Homes (Yorkshire) Ltd

PROJECT TITLE:

Primose Lane, Liversedge  
Planning Application

DRAWING TITLE:

Site Location  
(Wider Context)

SCALE: 0 1 2 km

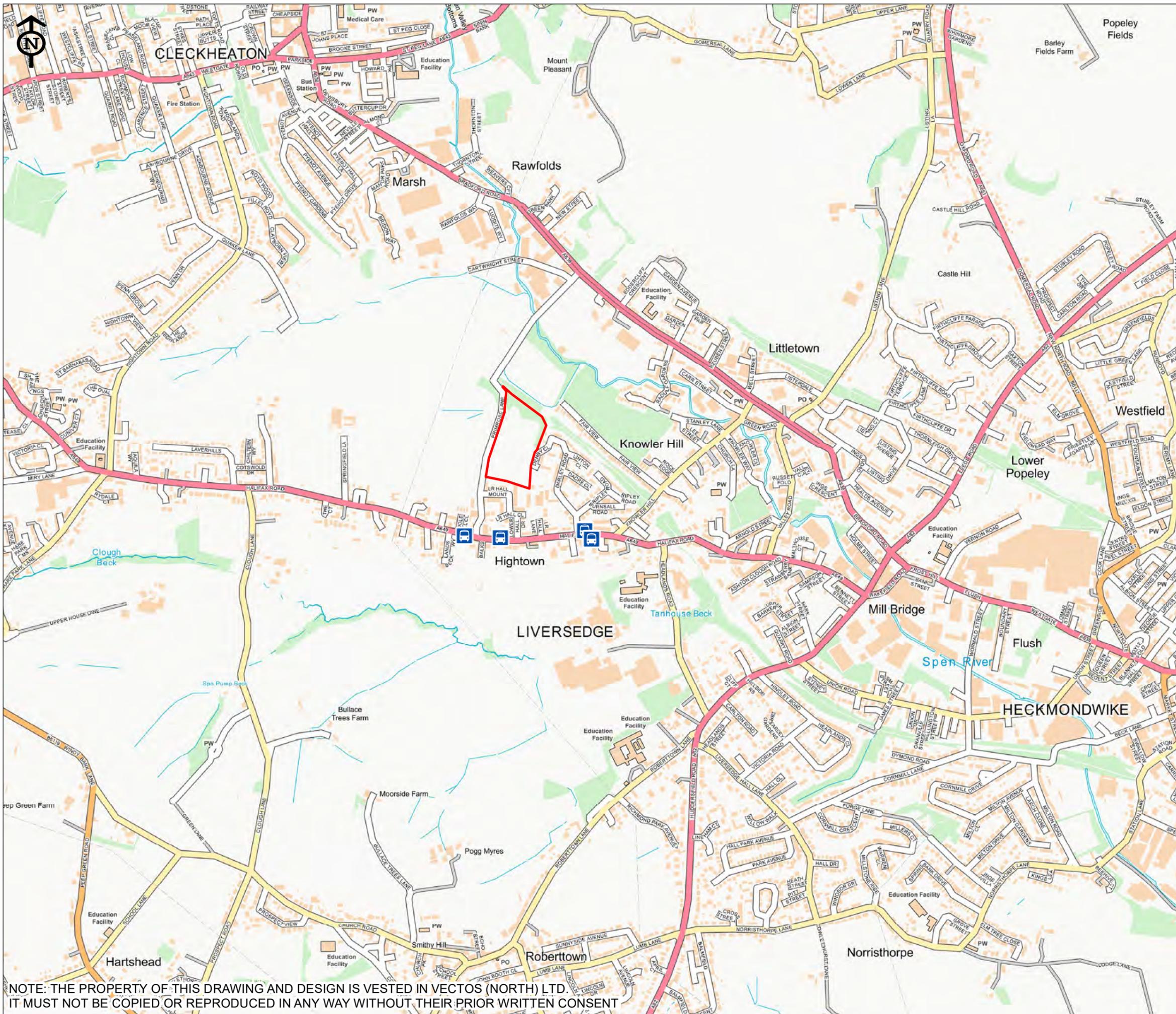
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AT	OM	02/12/2022



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VN222468-G100	1

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**Legend**

- Approximate Site Boundary
- Bus Stop

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CLIENT:  
**Jones Homes (Yorkshire) Ltd**

PROJECT TITLE:  
**Primose Lane, Liversedge Planning Application**

DRAWING TITLE:  
**Site Location (Local Context)**

SCALE: 0 200 400  
 Meters

DRAWN: AT	CHECKED: OM	DATE: 22/03/2023
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DRAWING NO: VN222468-G101	REVISION: 1
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# Drawings



**Notes:**  
 1. This is not a construction drawing and is intended for illustrative purposes only.  
 2. White lining is indicative only.

**Key**

	25m Forward Visibility Splays (Based on 20mph)
	17m Forward Visibility Splays (Based on 15mph)
	25m Junction Visibility Splays (Based on 20mph)

D	Site Layout Updated	WD	OM	21.03.23
C	Site Layout Updated	WD	OM	20.01.23
B	Updated Alignment	DJR	OM	14.12.22
A	Amendments to drawing following comments	DJR	OM	07.12.22
REV.	DETAILS	DRAWN	CHECKED	DATE

CLIENT:  
**Jones Homes (Yorkshire) Ltd**

PROJECT:  
**Primrose Lane, Liversedge**

DRAWING TITLE:  
**General Arrangement  
 & Forward Visibility Splays**

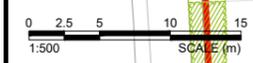
SCALES:  
**1:500 at A3**

DRAWN: WD    CHECKED: OM    DATE: 05.12.22

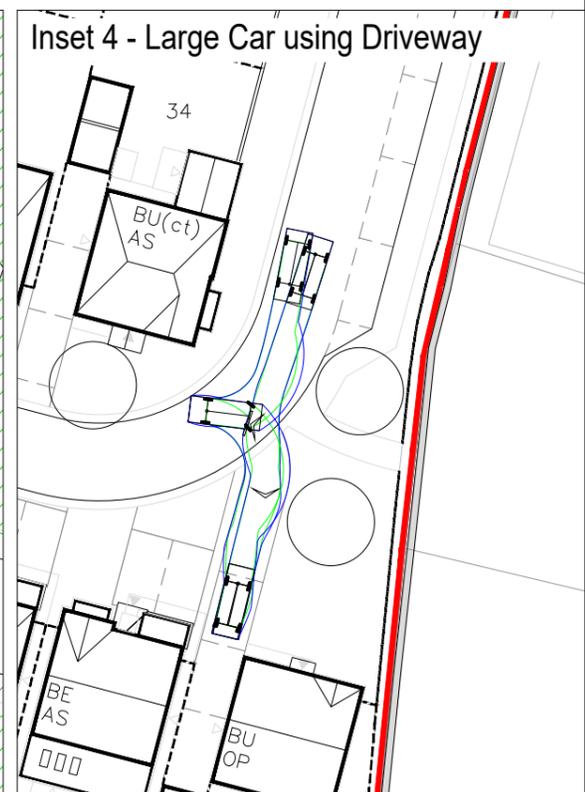
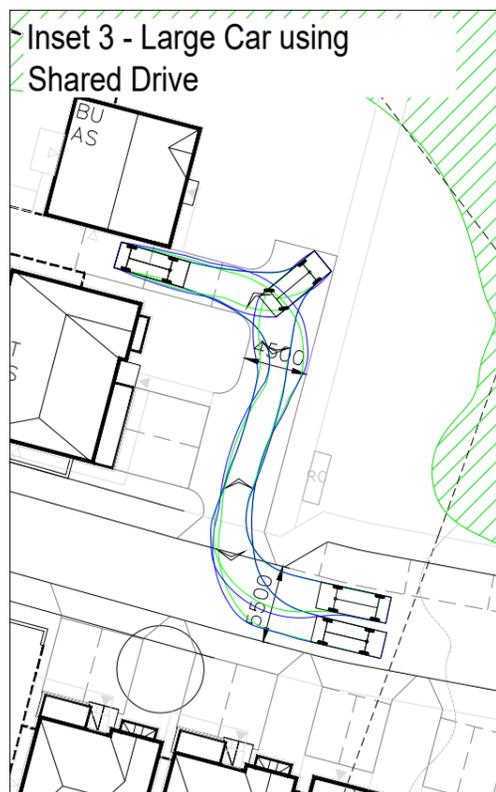
**vectos.**

4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ  
 0161 228 1008    e: manchester@vectos.co.uk

DRAWING NUMBER: **VN222468-D100**    REVISION: **D**



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REV.	DETAILS	DRAWN	CHECKED	DATE
A	Amendments to drawing following comments	DJR	OM	07.12.22
B	Updated Alignment	DJR	OM	14.12.22
C	Site Layout Updated	WD	OM	20.01.23
D	Site Layout Updated	WD	OM	21.03.23

Notes:

- This is not a construction drawing and is intended for illustrative purposes only.
- White lining is indicative only.

KEY

Vehicle	Overall Length	Overall Width	Overall Body Height	Overall Body Height	Min Body Ground Clearance	Max Track Width	Lock to lock time	Kerb to Kerb Turning Radius
3.5t Panel Van	5.339m	1.986m	1.986m	2.565m	0.338m	1.986m	4.00s	6.400m
Large Car (2006)	5.079m	1.872m	1.525m	1.831m	0.310m	1.831m	4.00s	5.900m
11.85m Large Refuse Vehicle (4 axle)	11.850m	2.500m	3.751m	6.00s	0.304m	2.500m	6.00s	11.035m

Primrose Lane, Liversedge

Jones Homes (Yorkshire) Ltd

Swept Path Analysis - 3.5t Panel Van, Large Car and Refuse Vehicle

**vectos.**

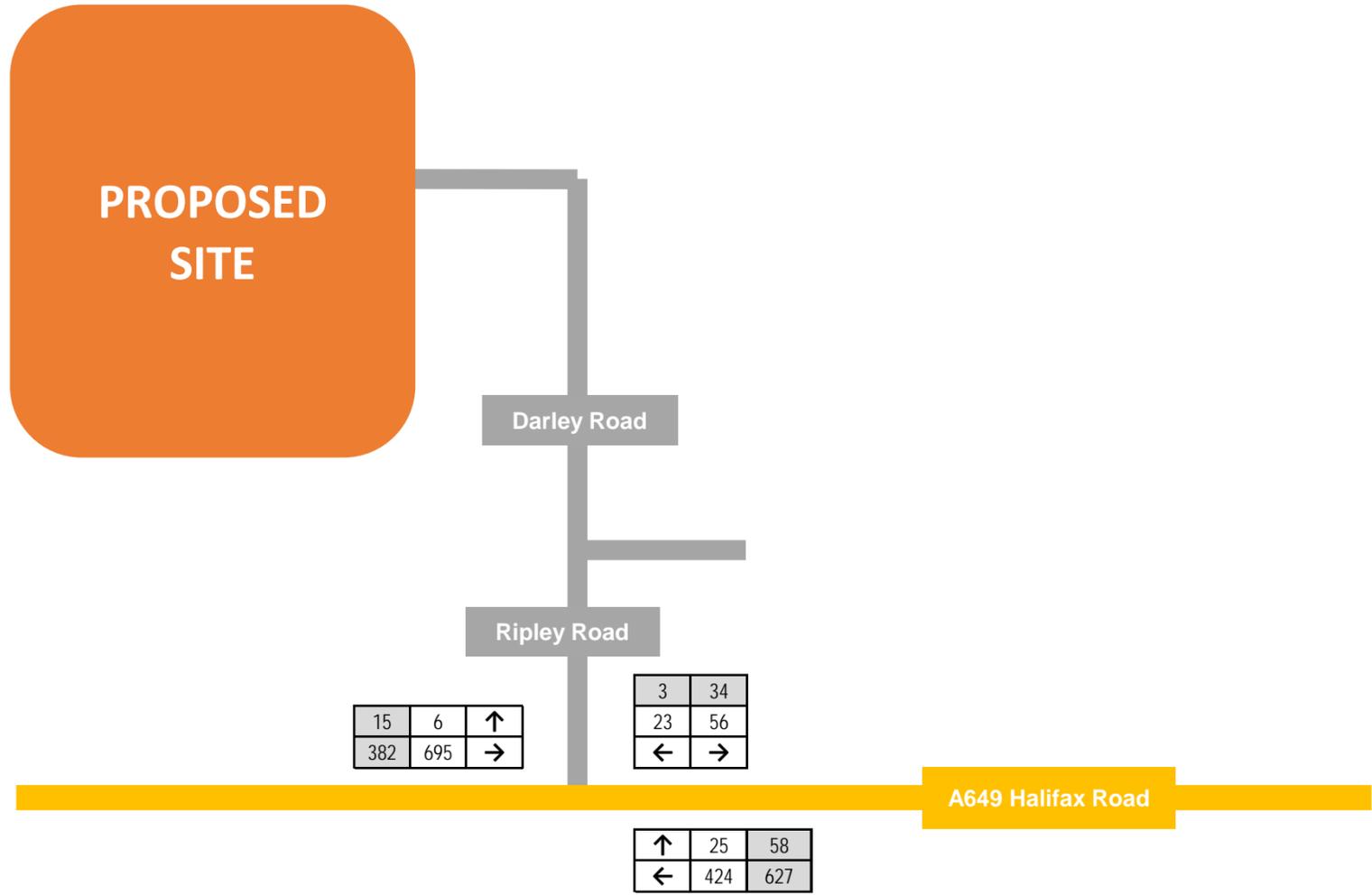
4th Floor Oxford Place, 61 Oxford Street, Manchester, M1 6EQ  
0161 228 1008 e: manchester@vectos.co.uk

DRAWN: WD	CHECKED: OM	DATE: 01.12.22	SCALES: 1:500 at A3 - Unless Shown
DRAWING NUMBER: VN222468-TR100			REVISION: D

# Figures

KEY:

- PCUs AM Peak
- PCUs PM Peak



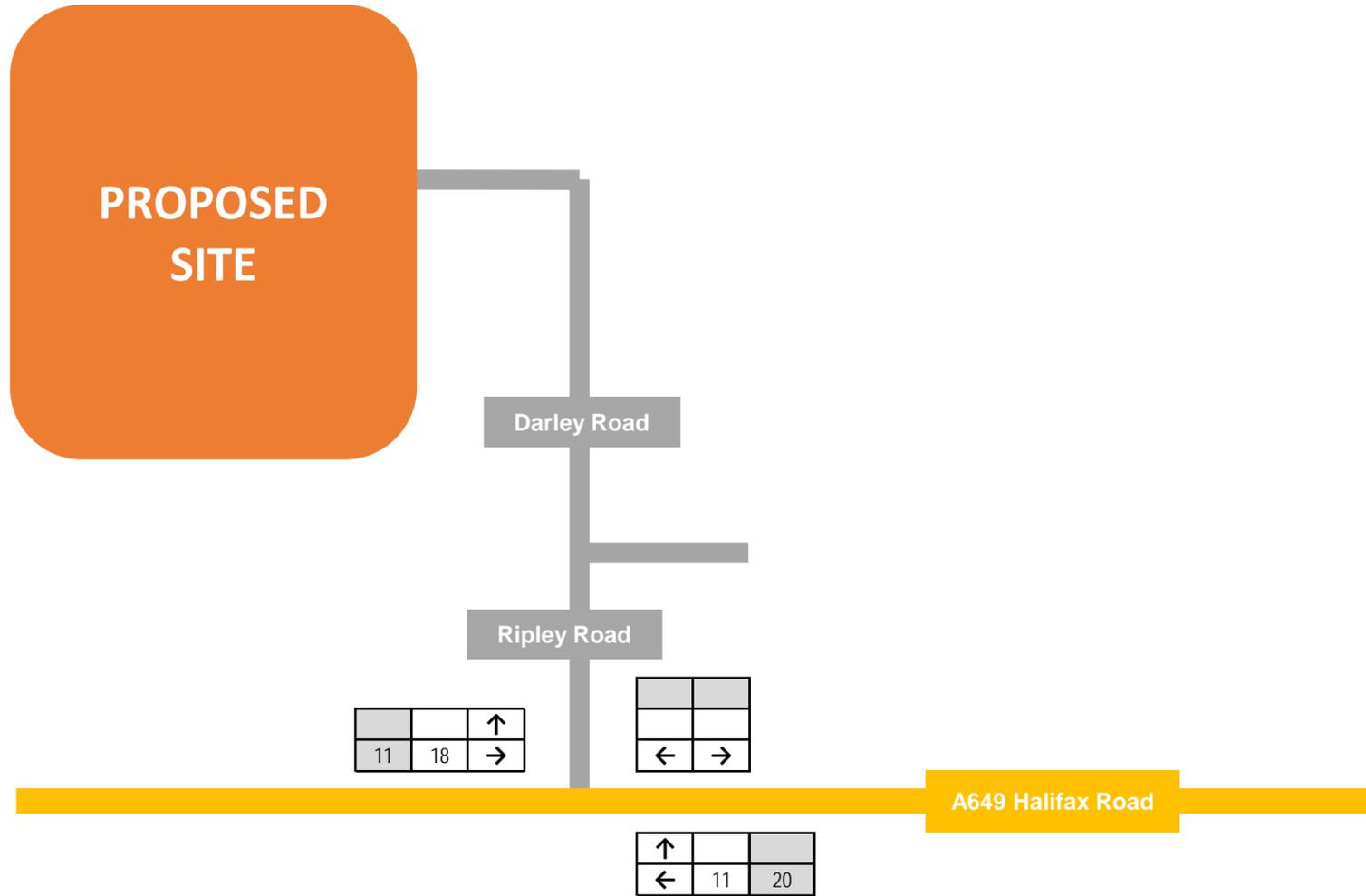
2022 Survey

Figure 1

vectos.

KEY:

- PCUs AM Peak
- PCUs PM Peak



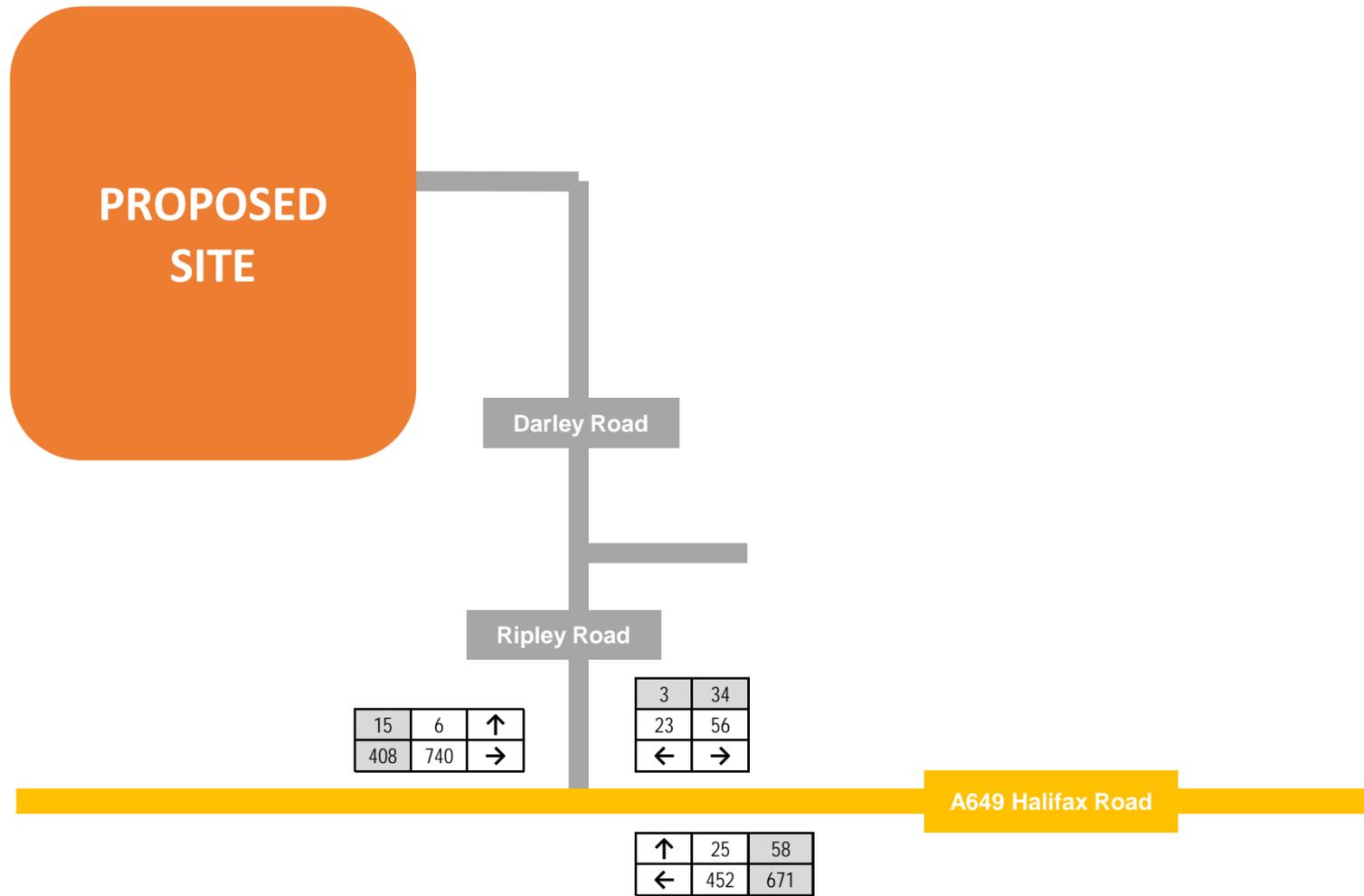
Committed Developments

Figure 2

vectos.

KEY:

- PCUs AM Peak
- PCUs PM Peak

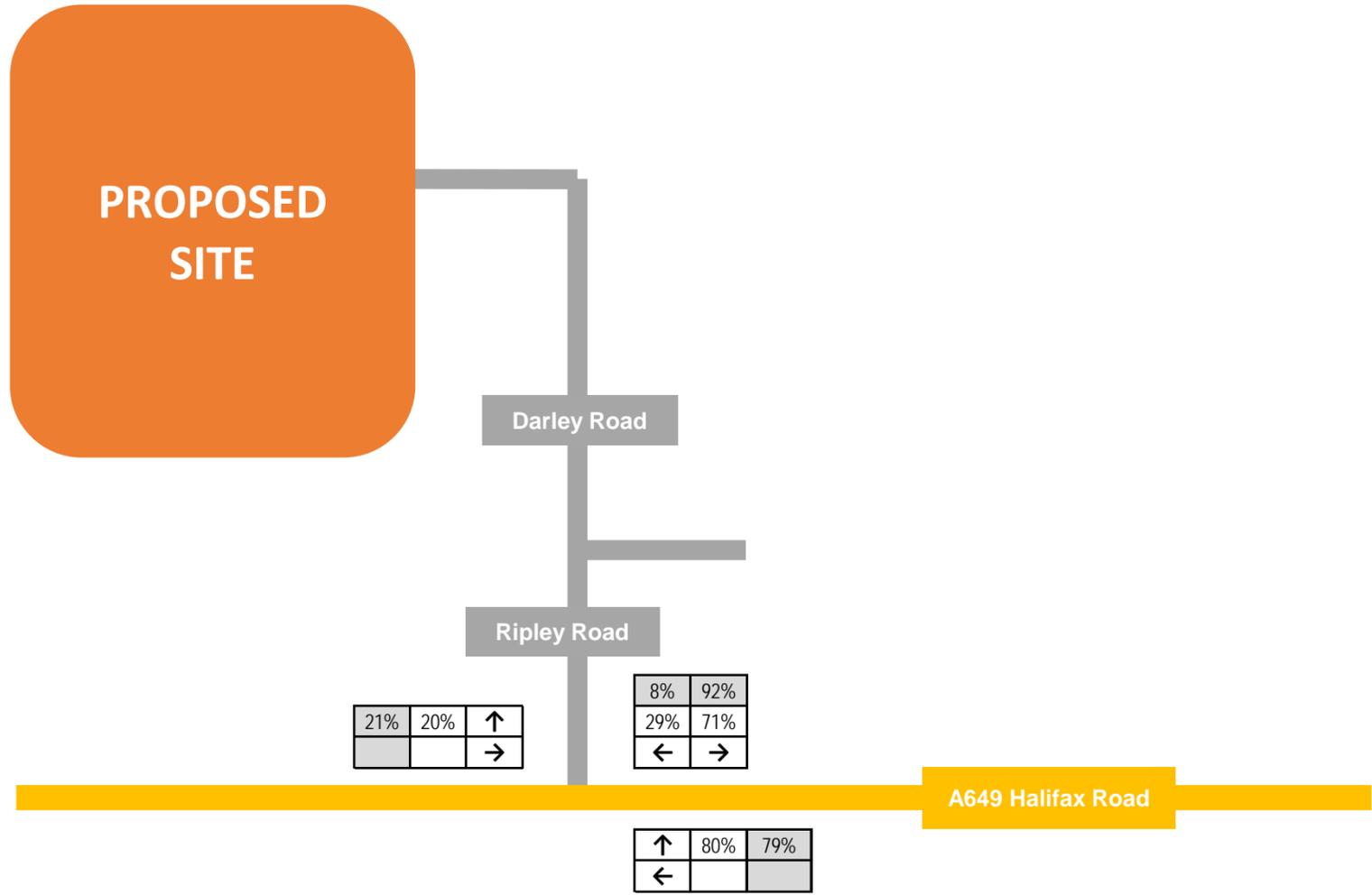


2027 Baseline 'Without Development'

Figure 3

vectos.

KEY:  
 □ PCUs AM Peak  
 ■ PCUs PM Peak



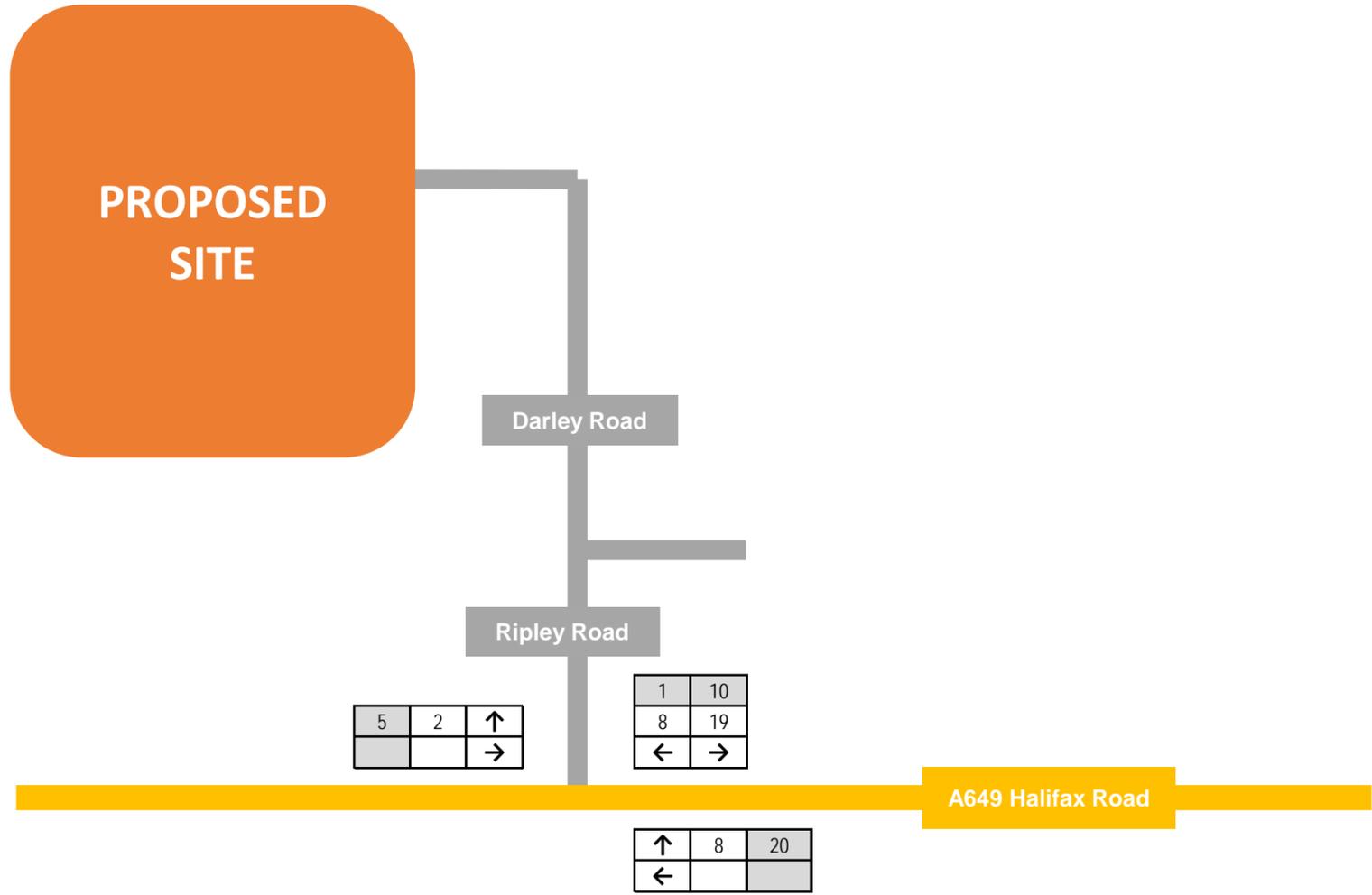
Development Trip Distribution

Figure 4

**vectos.**

KEY:

- PCUs AM Peak
- PCUs PM Peak



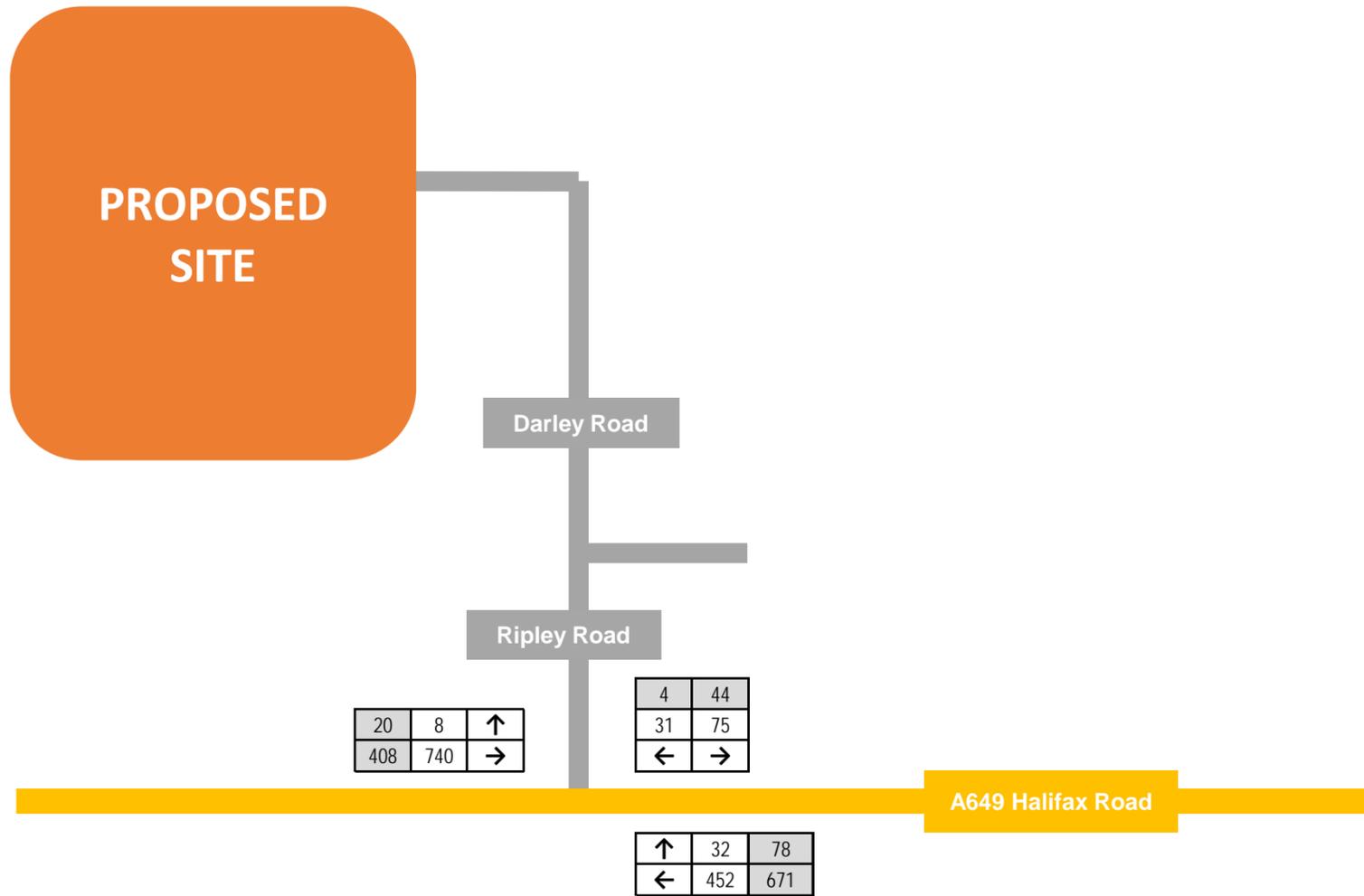
Development Trips

Figure 5

vectos.

KEY:

- PCUs AM Peak
- PCUs PM Peak



2027 Baseline 'With Development'

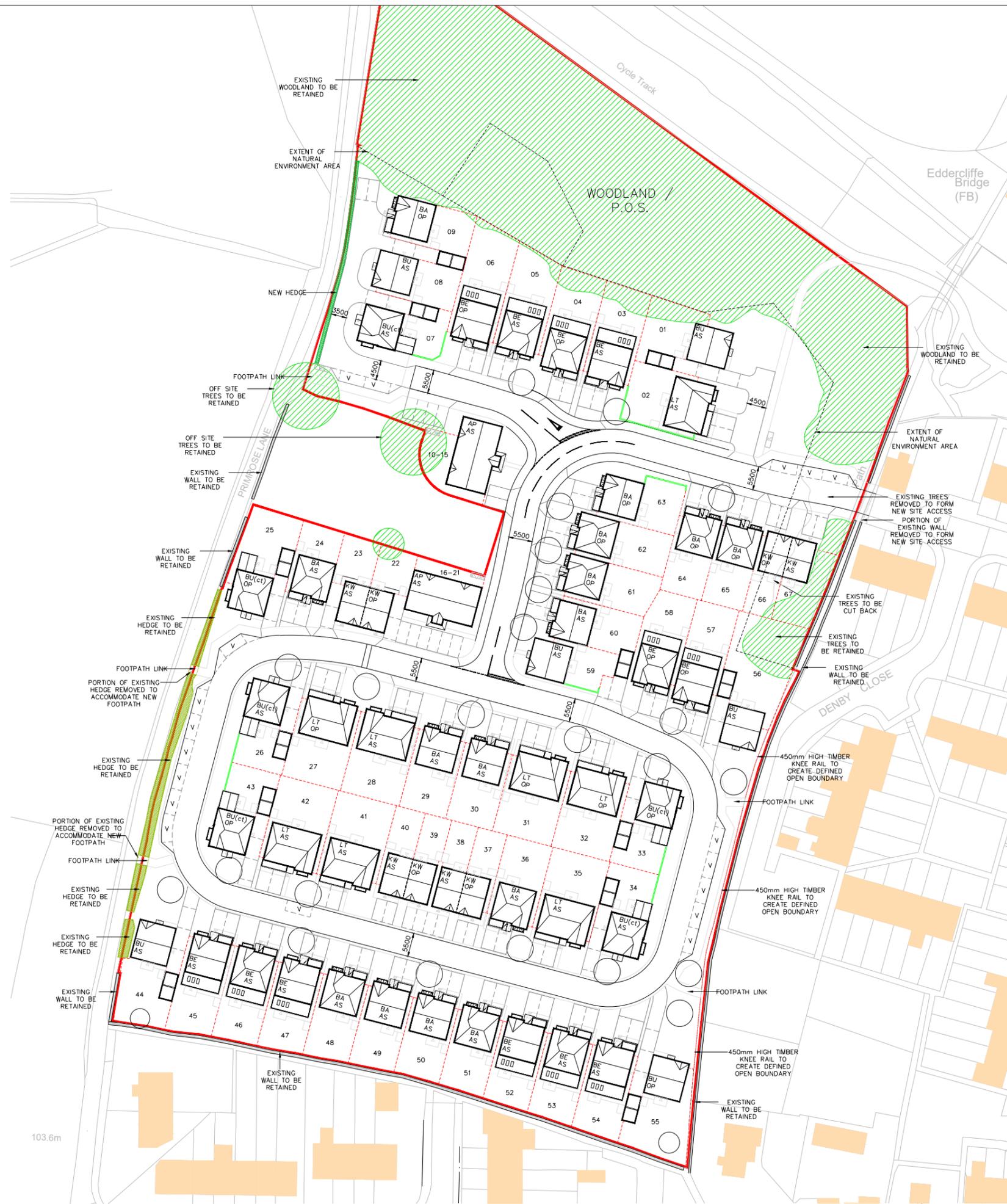
Figure 6

vectos.

# Appendices

# Appendix A

Proposed Site Layout



# Appendix B

Pre-Application Advice – Kirklees Council

**Consultation Response from KC, Highways Development Management**

**2021/20992 at Land at Lower Hall Close, Hightown, Liversedge, WF15 6NX**

**Pre application advice for erection of 75 dwellings**

**Date Responded: 04/11/21 | Responding Officer: A Darwin | Responding Ref: 9-5SE/3**

**Development Overview:**

The site is located in the western part of Liversedge and is allocated for residential development in the Local Plan. The site forms part of site HS117, which comprises of 3.12ha of land. However, the net site area is reduced to around 2.5ha in order to safeguard the area of woodland (Protected Open Space) in the northern part of the site.

Vehicular accesses are proposed to be taken from Darley Road (serving 49 dwellings) and Lower Hall Close (serving to 26 units), which will be extended into the site as they currently end on cul-de-sacs on the eastern and southern edges of the development plot. Based on the draft layout plan provided, it appears that the two access roads would be interlinked via a shared surface street.

Pre-application advice has previously been provided for alternative development proposals at the site, which were original proposed to be accessed via Primrose Lane. However, this was deemed unacceptable due to impact on the bridleway and this access option was discounted.

**Reference to Plans/Documents:**

- Pre-application letter by Savills dated 15 September 2021;
- Transport Assessment Pre-Application Scoping Note by Vectos dated September 2021;
- Schematic Site Layout by Niemen Architects reference 3416-0-001.

**Policy:**

Local Plan Policies – LP5, LP19, LP20, LP21, LP22, LP23, LP24; Kirklees Highway Design Guide SPD, Housebuilder Design SPD, NPPF

Reference should also be made to the Councils latest 'Waste Management Design Guide for New Developments' and S38 design guidance documents that provide detailed requirements relating to the highway and development layout.

**Site Access:**

Vehicular accesses are proposed to be taken from Darley Road (serving 49 dwellings) and Lower Hall Close (granting access to 26 units), which will be extended into the site as they currently end on cul-de-sacs on the eastern and southern edges of the development plot.

This access strategy is acceptable in principle. However, as identified during the previous pre-application enquiry, to gain access to the site both roads cross existing footpaths (SPE/116/20 along the southern site boundary and SPE/110/20 along the eastern boundary), which do not have public vehicular rights of access over them, and the land occupied by these PROW is not within the development site boundary and is unregistered. Therefore, the applicant will need investigate the legalities of ownership and rights to convert these sections to dedicated highway as is necessary.

The site will gain access to the wider highway network from two junctions on the A649 Halifax Road, via Ripley Road and Lower Hall Drive. The residential estate roads between the site and these junctions experience parking problems, which could restrict access to the site, particularly for refuse and emergency service vehicles. Therefore, the Transport Assessment should include parking surveys (min. 2 no. night time snap short surveys) along these roads and on Halifax Road within the vicinity of the junctions, to ascertain existing peak parking levels / locations. This information should then be used in conjunction with Swept Path Analysis to determine whether acceptable access for refuse/emergency vehicles will be available at all times, and if not to provide suitable mitigation measures, which may include additional visitor parking within the site.

The Councils Road Safety Team have been consulted regarding this pre-application enquiry and have confirmed that parking issues do occur at both junctions on to Halifax Road, which restrict junction visibility. Therefore, the Transport Assessment should consider measures to address these issues, which could involve localised waiting restrictions.

Visibility at the Lower Hall Drive / A649 Halifax Road junction also appears to be restricted due to the curved alignment of the main road. Therefore, this needs to be investigated as part of the Transport Assessment, including obtaining speed data on Halifax Road. Should this identify that visibility is sub-standard, mitigation works should be proposed.

#### **Site Layout/Servicing/Waste Collection:**

The site layout includes two new sections of traditional estate road that are then connected by what appears to be an adopted shared surface road.

There are a number of issues with the site layout as presented, which are summarised as follows:

- All internal roads shall be built to adoptable standards, as set out in the Kirklees Highway Design Guide SPD and Highways Guidance Note – Section 38 Agreements for Highway Adoptions March 2019 (version 1) and associated documents. In particular, reference should be taken to minimum requirements relating to centreline radius, junction/forward visibility, junction spacing, gradients and access for the Kirklees Design Refuse Vehicle. At present it is clear that the internal roads do not comply with minimum adoption requirements.
- Adequate visitor parking must be incorporated into the layout, with a minimum provision of 1 space per 4 units. Ideally this should be in the form of laybys that are parallel to the carriageway;
- There are a number of junctions proposed in lieu of bends. However, these junctions are affectively bends and will be treated as such by drivers, so should be designed accordingly. All bends should have a min. 20m centreline radius and provide 25m forward visibility. Visibility splays of 2.4x 25m are required at internal junctions. These splays/sightlines should be demonstrated on a plan for review, with all splays/sightlines contained within the adopted highway.
- All shared surface roads should be a minimum of 5.5m wide with 0.6m wide margins. Additional width will be required to ensure that all visibility requirements are contained within the adopted highway.
- Swept Path Analysis (SPA) is required to demonstrate that the Kirklees Design Refuse Vehicle can pass oncoming and/or parked vehicles, and turn within all turning heads unobstructed. SPA should be provided of the entire site layout, which must be in accordance with the vehicle parameters set out in Table 1 of the S38 design guide entitled 'Emergency Access, Waste Management, Servicing and Deliveries – April 2020 (version 1)'.

- Bin presentation points are required for all dwellings, which should conform to the Councils latest S38 design guide entitled 'Emergency Access, Waste Management, Servicing and Deliveries – April 2020 (version 1)' and should be clearly noted on the submission plans. For any roads (e.g. private drives) where dedicated refuse vehicle turning heads are not provided, suitably sized and located communal bin presentation points are required adjacent to the adopted highway. All bin presentation points should conform to the maximum carry distances and gradients set out in Council guidance and should ensure that bins can be presented on collection day without causing obstruction to the highway, pavements or driveways.
- Where private drives are proposed, turning space is still required for cars and light van deliveries, which should be demonstrated with Swept Path Analysis (SPA).
- Trees should be incorporated to ensure that streets are tree lined, in accordance with the NPPF, Kirklees Highway Design Guide SPD and Kirklees Housebuilder SPD.

**Parking:**

The level of parking proposed for the development is not confirmed in the submitted information. Therefore, guidance should be taken from the Councils Highway Design Guide SPD to the recommended level of provision. Reference should also be taken from the Councils Housebuilder SPD, which provides recommendations for the location of parking spaces to ensure high quality design. If integral garages are to be considered as contributing towards parking provision they must provide internal dimensions of 3m x 6m.

All dwellings must include at least 1 no. electric vehicle charging point (more are desirable). Secure cycle parking is required for all dwellings and should allow for electric cycle charging.

Visitor parking should be provided at a ratio of 1:4 dwellings, which should ideally be within laybys. No provision is currently shown on the site plan.

Full details of the parking provision should be confirmed in the Transport Assessment that will be required to support any future planning application, with robust justification provided should there be any shortfall in provision.

**PROW:**

As previously stated, the legal / landownership issues relating to gaining access to the site across the unregistered PROW land (SPE/116/20 along the southern site boundary and SPE/110/20 along the eastern boundary), must be considered further by the applicant. Assuming this can be addressed, the development must ensure that the interaction between these PROW and the access roads is safely accommodated into the design and the existing PROW are incorporated / enhanced by the development.

PROW Bridleway SPE/111/120 runs along the western boundary of the site and connects to the Spen Valley Greenway to the north. It is expected that the pedestrian/cycle links to the bridleway and Spen Valley Greenway will be provided as part of the development (as indicatively shown on the sketch plan). These links must connect to the adopted highway network and be designed in accordance with LTN 1/20 guidance. Measures to prevent vehicle access to the Bridleway and Spen Valley Greenway should be incorporated, with full detailed plans of these new links provided.

**Road Safety:**

As previously stated, there are existing parking issues along the residential roads that serve the site, as well as the junctions on to Halifax Road, which should be investigated as part of the Transport Assessment. There also appears to be restricted visibility at the Halifax Road / Leak Hall Drive junction that should be investigated and mitigation works proposed if necessary.

The Transport Assessment should include a review of accident data on the local highway network over the latest 5 year period, including all residential roads that link the site to Halifax Road, and the Halifax Road junctions and approaches. The study area should also be extended a minimum of 500m in either direction from the junctions along Halifax Road, and along any links or junctions where development traffic is estimated to increase by 30 two-way trips or above.

**Accessibility:**

A review of the sites accessibility by non-car modes should be provided in the Transport Assessment. Where necessary, this should include improvements to ensure that the development is accessible to all users, including safe links to nearby public transport facilities.

As the development includes over 50 dwellings, a Travel Plan is required for the development.

Kirklees Council will require a Travel Plan monitoring fee to be secured as part of the S106 agreement. For a development of this scale (classed as a 'small major' residential development) the fee is £10,000 (£2,000 per year for 5 years).

The provision of Residential Metro cards (or Sustainable Transport Fund) is expected for this development and should be taken into consideration. WYCA will be consulted at the planning application stage and will recommend a contributory sum accordingly. Bus stop improvements may also be required.

**Traffic Impact/Network Assessment:**

A Transport Assessment is required to support the proposals. Comments regarding the proposed scope of assessment are as follows:

Trip Rates

The vehicle trip rates contained in the scoping note of circa 0.48 per dwelling during weekday peak hour period are considered to be too low and are not acceptable. Based on other similar proposal, a trip rate in the region of between 0.55-0.60 would be expected.

No multi-modal trip rates have been provided. These should be included in the Transport Assessment.

Traffic Distribution

It is proposed to determine traffic distribution based on 2011 census method of travel to work data. This approach is considered acceptable. Full details of the methodology, including route choice should be provided in the Transport Assessment.

### Committed Development and Traffic Growth

The following committed development sites should be included in the assessment:

- HS113 – circa 27 dwellings.
- HS118- circa 42 dwellings.
- HS122 – circa 37 dwellings.

Background traffic growth will also need to be applied to the proposed assessment year, which should be 5 years post planning submission.

### Junction Assessments

Junction capacity assessments will be required at the following junctions as a minimum:

- Lower Hall Drive / Halifax Road;
- Ripley Road / Halifax Road.

If development traffic is estimated to exceed 30 two-way trips during weekday network peak hour periods at any other junctions, these should also be included in the capacity assessments.

### **Highway Adoption Issues:**

The internal road layout shall be built to adoptable standards, as set out in the Kirklees 'Highway Design Guide SPD' and 'Highways Guidance Note – Section 38 Agreements for Highway Adoptions' March 2019 (version 1) and associated documents.

Sufficient detail must be provided with the planning submission to check that the proposed highways are suitable for adoption, and should clearly show the extent of proposed adoption and any areas that are to remain private (e.g. landscaping areas and PoS). The following information is required as a minimum:

- Long sections, cross-sections and contours;
- Dimensioned plans, including visibility splays and forward visibility sight-lines;
- Kerbing details and surface treatments;
- Extent of proposed adoption and unadopted communal areas to be confirmed. Details regarding the maintenance of unadopted communal areas/facilities are also required.

Any retaining features affecting the highway will require formal technical approval by the Council as the Highway Authority. We would recommend providing details of all proposed retaining features and underground storage facilities (including pipes) to my colleague Farhad Khatibi (Team Leader) in the structures section at the earliest opportunity, who will be able to advise of the necessary requirements in more detail.

### **Planning Submission Information Requirements:**

The following information is required to support the planning submission:

- Transport Assessment;
- Travel Plan;
- S106 Heads of Terms;
- Proposed highway details;
- Stage 1 Road Safety Audit for both S278 & S38 works, and Designers Response;
- Swept Path Analysis (SPA).

-----  
Below are proposed conditions / informatives identified by the Highway Structures Team:

- 1) Before the development commences a scheme detailing the location and cross sectional information together with the proposed design and construction details for all new retaining walls/ building retaining walls adjacent to the existing/ proposed adoptable highways including any modifications to the existing retaining walls on Cumberworth Lane and Public Footpath (DEN/61/10) shall be submitted to and approved by the Highway Authority in writing. The approved scheme shall be implemented prior to the commencement of the proposed development and thereafter retained during the life of the development.
- 2) Before the development commences a scheme detailing the location and cross sectional information together with the proposed design and construction details for all new surface water attenuation pipes/manholes located within the proposed highway footprint shall be submitted to and approved by the Highway Authority in writing. The approved scheme shall be implemented prior to the commencement of the proposed development and thereafter retained during the life of the development. See <https://www.kirklees.gov.uk/beta/regeneration-and-development/highways-guidance-and-standards.aspx> for further details.

**Important Notes:**

All new storm water attenuation tanks/pipes/culverts with internal diameter/ spans exceeding 0.9m must be located off the adoptable highway. Any decision to locate these facilities within the adoptable highway footprint must be accompanied with a full risk evaluation report with particular reference to their proposed inspection, structural assessment and maintenance regime in compliance with the CDM Regulations 2015 requirements.

The adopting authority (i.e. Yorkshire Water) will also be required to produce and submit a legally binding agreement to the Highway Authority explicitly stating that they will be fulfilling their obligations in relation to the systematic and cyclical inspection and structural assessment of any attenuation structure located within the highway footprint, in full compliance with CS450- Inspection of Highway structures.

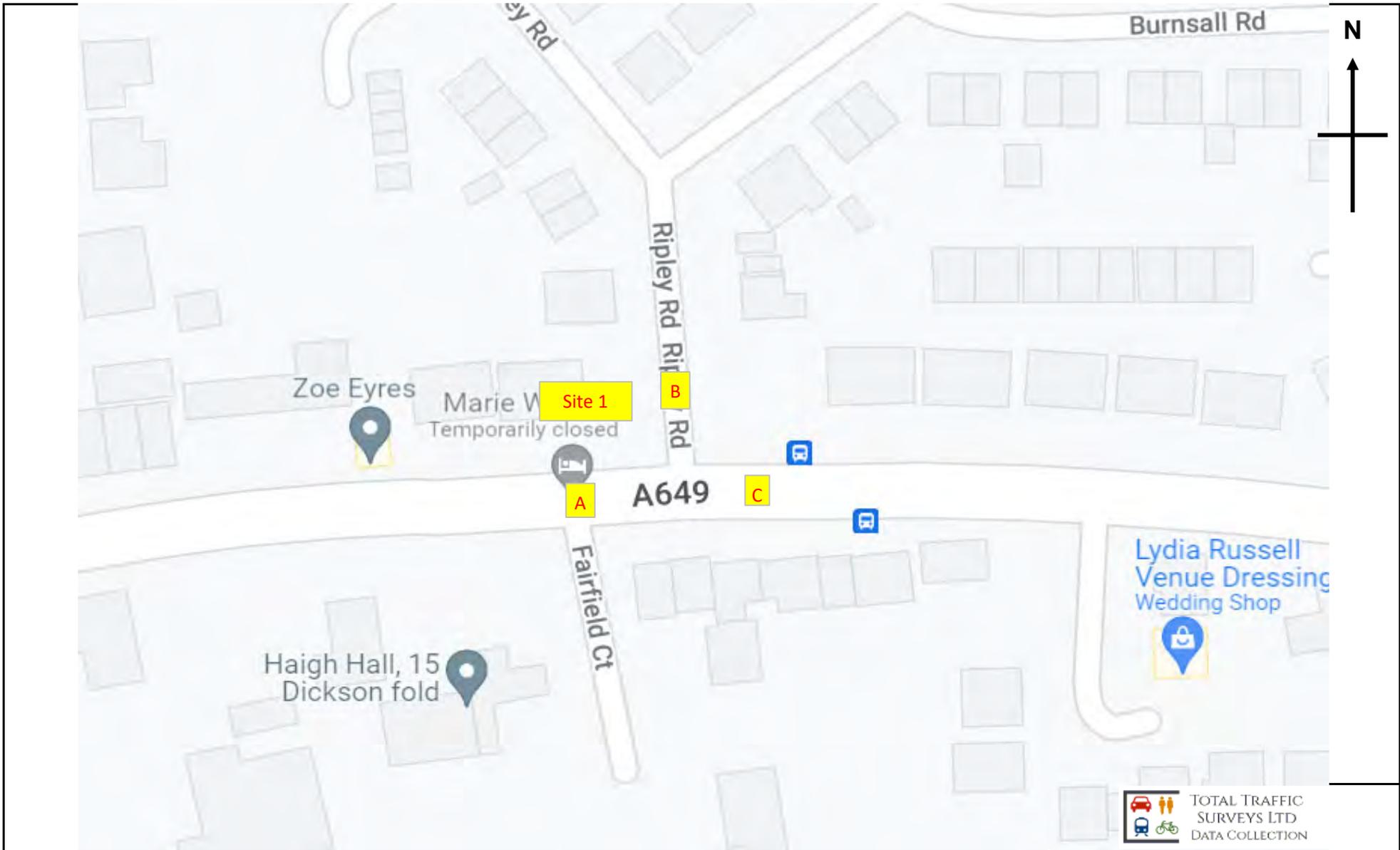
# Appendix C

Traffic & Parking Survey Data



TOTAL TRAFFIC  
SURVEYS LTD  
DATA COLLECTION

Job Title: Liversedge  
Job Number: TTS-1483-Nov  
Client: Vectos  
Survey Date: Tuesday 8th November 2022  
Survey Period: 0700-1000 & 1600-1900  
Survey Type: Manual Classified Turning Counts  
Comments: There were no incidents likely to affect the outcome of the surveys. Weather - Fine



<b>SITE / LOCATION:</b>	Liversedge	<b>JOB NO:</b>	TTS-1483-Nov	<b>DWG NO:</b>	1483-001	<b>DRAWN:</b>	SES
<b>SURVEY DATE:</b>	Tuesday 8th November 20202	<b>DWG TITLE:</b>		Location Plan and Observed Movements			
<b>SURVEY TIMES:</b>	0700-1000 & 1600-1900	<b>JOB TITLE:</b>		Liversedge			

Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	A - B							TOT	A - C							TOT
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07:30	0	0	0	0	0	0	0	0	0	0	155	33	2	0	0	190
07:45	0	0	2	0	0	0	0	2	0	1	149	34	2	0	1	187
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09:15	2	0	2	1	0	0	0	5	0	0	65	11	1	2	1	80
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09:45	0	0	2	0	0	0	0	2	1	0	83	14	0	0	1	99
<b>H/TOT</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>302</b>	<b>46</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>364</b>
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Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	B - C							TOT	B - A							TOT
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07:30	0	0	6	5	0	1	0	12	0	0	4	1	1	0	0	6
07:45	0	1	14	0	0	0	0	15	0	0	4	0	0	0	0	4
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>44</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>53</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>20</b>
08:00	0	0	13	0	0	0	1	14	0	0	6	1	0	0	0	7
08:15	0	0	12	1	0	0	0	13	0	0	5	0	0	0	0	5
08:30	0	0	15	0	0	0	0	15	0	0	5	0	0	0	0	5
08:45	0	0	5	0	0	0	0	5	0	0	1	1	0	0	0	2
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>
09:00	0	0	6	2	2	1	0	11	0	0	1	0	0	0	0	1
09:15	0	0	4	1	0	0	0	5	0	0	3	0	0	0	0	3
09:30	0	0	3	2	0	0	0	5	0	0	0	2	1	0	0	3
09:45	0	0	3	0	0	0	0	3	0	0	2	0	0	0	0	2
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>P/TOT</b>	<b>0</b>	<b>1</b>	<b>105</b>	<b>13</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>124</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>48</b>

TIME	B - C							TOT	B - A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:00	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0	3
16:15	0	0	3	1	1	0	0	5	0	0	4	0	0	0	0	4
16:30	0	0	10	0	0	0	0	10	0	0	2	0	0	0	0	2
16:45	0	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>
17:00	0	0	8	0	0	0	0	8	0	0	1	0	0	0	0	1
17:15	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
17:30	0	0	8	1	0	0	0	9	0	0	2	0	0	0	0	2
17:45	0	0	6	0	0	0	0	6	0	0	1	0	0	0	0	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
18:00	0	0	7	0	0	0	0	7	0	0	1	0	0	0	0	1
18:15	0	0	8	1	0	0	0	9	0	0	4	2	0	0	0	6
18:30	0	0	8	1	0	0	0	9	0	0	4	2	0	0	0	6
18:45	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>P/TOT</b>	<b>0</b>	<b>0</b>	<b>84</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>

Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	1	37	8	0	0	2	48	0	0	3	0	1	0	0	4
07:15	0	0	52	6	0	0	1	59	0	0	4	1	0	0	0	5
07:30	0	1	73	11	6	1	0	92	0	0	2	0	2	1	0	5
07:45	0	0	72	22	4	3	1	102	0	0	3	0	0	1	0	4
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>234</b>	<b>47</b>	<b>10</b>	<b>4</b>	<b>4</b>	<b>301</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>18</b>
08:00	0	1	78	17	1	2	2	101	0	0	5	0	0	0	1	6
08:15	0	0	90	18	0	0	0	108	0	0	4	0	0	0	0	4
08:30	0	0	70	8	2	0	2	82	0	0	3	1	0	0	0	4
08:45	0	0	88	12	1	1	1	103	0	0	6	1	1	0	0	8
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>326</b>	<b>55</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>394</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>22</b>
09:00	0	0	40	10	2	2	1	55	0	0	5	1	1	0	0	7
09:15	0	0	49	10	3	1	0	63	0	0	4	1	0	0	0	5
09:30	0	0	44	9	3	2	1	59	0	0	2	0	0	0	0	2
09:45	0	0	39	10	3	0	0	52	0	0	4	1	0	0	0	5
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>172</b>	<b>39</b>	<b>11</b>	<b>5</b>	<b>2</b>	<b>229</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>19</b>
<b>P/TOT</b>	<b>0</b>	<b>3</b>	<b>732</b>	<b>141</b>	<b>25</b>	<b>12</b>	<b>11</b>	<b>924</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>6</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>59</b>

TIME	C - A							TOT	C - B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:00	1	0	100	18	0	0	1	120	0	0	10	2	1	0	0	13
16:15	0	0	126	13	1	0	1	141	0	0	11	0	0	0	0	11
16:30	0	2	136	16	1	0	0	155	0	0	8	0	0	0	0	8
16:45	1	0	122	10	1	0	0	134	0	0	11	0	0	0	0	11
<b>H/TOT</b>	<b>2</b>	<b>2</b>	<b>484</b>	<b>57</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>550</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>43</b>
17:00	1	1	144	18	1	0	2	167	0	0	20	1	0	0	0	21
17:15	1	0	151	14	1	0	1	168	0	0	17	1	0	0	0	18
17:30	0	1	140	16	0	0	0	157	0	0	13	2	0	0	0	15
17:45	0	2	114	5	0	0	1	122	0	0	11	2	0	0	0	13
<b>H/TOT</b>	<b>2</b>	<b>4</b>	<b>549</b>	<b>53</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>614</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>67</b>
18:00	0	0	102	3	0	0	0	105	0	0	9	2	0	0	0	11
18:15	0	0	82	6	0	0	1	89	0	1	15	1	1	0	0	18
18:30	0	0	75	8	0	0	1	84	0	0	8	0	0	0	0	8
18:45	0	0	63	3	0	0	0	66	0	0	10	1	0	0	0	11
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>322</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>344</b>	<b>0</b>	<b>1</b>	<b>42</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>48</b>
<b>P/TOT</b>	<b>4</b>	<b>6</b>	<b>1355</b>	<b>130</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>1508</b>	<b>0</b>	<b>1</b>	<b>143</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>158</b>

Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	1	42	8	0	0	2	53	3	0	97	11	0	0	1	112
07:15	0	0	54	8	1	0	1	64	0	0	113	24	0	0	1	138
07:30	0	1	77	12	7	1	0	98	0	0	155	33	2	0	0	190
07:45	0	0	76	22	4	3	1	106	0	1	151	34	2	0	1	189
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>249</b>	<b>50</b>	<b>12</b>	<b>4</b>	<b>4</b>	<b>321</b>	<b>3</b>	<b>1</b>	<b>516</b>	<b>102</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>629</b>
08:00	0	1	84	18	1	2	2	108	0	1	131	14	2	1	2	151
08:15	0	0	95	18	0	0	0	113	1	0	127	18	3	3	2	154
08:30	0	0	75	8	2	0	2	87	0	0	124	22	2	0	1	149
08:45	0	0	89	13	1	1	1	105	0	1	130	19	4	0	2	156
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>343</b>	<b>57</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>413</b>	<b>1</b>	<b>2</b>	<b>512</b>	<b>73</b>	<b>11</b>	<b>4</b>	<b>7</b>	<b>610</b>
09:00	0	0	41	10	2	2	1	56	0	2	94	14	3	0	1	114
09:15	0	0	52	10	3	1	0	66	2	0	67	12	1	2	1	85
09:30	0	0	44	11	4	2	1	62	0	0	63	7	1	2	1	74
09:45	0	0	41	10	3	0	0	54	1	0	85	14	0	0	1	101
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>178</b>	<b>41</b>	<b>12</b>	<b>5</b>	<b>2</b>	<b>238</b>	<b>3</b>	<b>2</b>	<b>309</b>	<b>47</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>374</b>
<b>P/TOT</b>	<b>0</b>	<b>3</b>	<b>770</b>	<b>148</b>	<b>28</b>	<b>12</b>	<b>11</b>	<b>972</b>	<b>7</b>	<b>5</b>	<b>1337</b>	<b>222</b>	<b>20</b>	<b>8</b>	<b>14</b>	<b>1613</b>

TIME	TO ARM A							TOT	FROM ARM A							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:00	1	0	103	18	0	0	1	123	0	0	79	13	1	1	3	97
16:15	0	0	130	13	1	0	1	145	1	0	71	13	0	0	2	87
16:30	0	2	138	16	1	0	0	157	1	0	87	4	1	0	1	94
16:45	1	0	122	10	1	0	0	134	0	1	90	8	2	0	0	101
<b>H/TOT</b>	<b>2</b>	<b>2</b>	<b>493</b>	<b>57</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>559</b>	<b>2</b>	<b>1</b>	<b>327</b>	<b>38</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>379</b>
17:00	1	1	145	18	1	0	2	168	0	0	79	8	0	0	2	89
17:15	1	0	151	14	1	0	1	168	0	1	95	13	0	0	0	109
17:30	0	1	142	16	0	0	0	159	0	1	94	6	0	0	2	103
17:45	0	2	115	5	0	0	1	123	0	0	73	7	0	0	0	80
<b>H/TOT</b>	<b>2</b>	<b>4</b>	<b>553</b>	<b>53</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>618</b>	<b>0</b>	<b>2</b>	<b>341</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>381</b>
18:00	0	0	103	3	0	0	0	106	0	0	78	7	1	0	2	88
18:15	0	0	86	8	0	0	1	95	0	0	84	4	0	0	0	88
18:30	0	0	79	10	0	0	1	90	0	1	59	2	0	0	1	63
18:45	0	0	63	3	0	0	0	66	1	2	54	1	0	0	1	59
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>331</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>357</b>	<b>1</b>	<b>3</b>	<b>275</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>298</b>
<b>P/TOT</b>	<b>4</b>	<b>6</b>	<b>1377</b>	<b>134</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>1534</b>	<b>3</b>	<b>6</b>	<b>943</b>	<b>86</b>	<b>5</b>	<b>1</b>	<b>14</b>	<b>1058</b>

Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	0	0	3	0	1	0	0	4	0	0	13	2	0	0	0	15
07:15	0	0	4	2	0	0	0	6	0	0	18	2	1	0	0	21
07:30	0	0	2	0	2	1	0	5	0	0	10	6	1	1	0	18
07:45	0	0	5	0	0	1	0	6	0	1	18	0	0	0	0	19
<b>H/TOT</b>	0	0	14	2	3	2	0	21	0	1	59	10	2	1	0	73
08:00	0	0	7	0	0	0	1	8	0	0	19	1	0	0	1	21
08:15	0	0	6	0	0	0	0	6	0	0	17	1	0	0	0	18
08:30	0	0	6	3	0	0	0	9	0	0	20	0	0	0	0	20
08:45	0	0	7	1	1	0	0	9	0	0	6	1	0	0	0	7
<b>H/TOT</b>	0	0	26	4	1	0	1	32	0	0	62	3	0	0	1	66
09:00	0	0	7	1	1	0	0	9	0	0	7	2	2	1	0	12
09:15	2	0	6	2	0	0	0	10	0	0	7	1	0	0	0	8
09:30	0	0	3	0	0	0	0	3	0	0	3	4	1	0	0	8
09:45	0	0	6	1	0	0	0	7	0	0	5	0	0	0	0	5
<b>H/TOT</b>	2	0	22	4	1	0	0	29	0	0	22	7	3	1	0	33
<b>P/TOT</b>	2	0	62	10	5	2	1	82	0	1	143	20	5	2	1	172

TIME	TO ARM B							TOT	FROM ARM B							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:00	0	0	13	3	1	0	0	17	0	0	6	0	0	0	0	6
16:15	1	0	12	0	0	0	0	13	0	0	7	1	1	0	0	9
16:30	0	0	11	0	0	0	0	11	0	0	12	0	0	0	0	12
16:45	0	0	15	0	0	0	0	15	0	0	8	0	0	0	0	8
<b>H/TOT</b>	1	0	51	3	1	0	0	56	0	0	33	1	1	0	0	35
17:00	0	0	22	2	0	0	0	24	0	0	9	0	0	0	0	9
17:15	0	0	21	2	0	0	0	23	0	0	7	1	0	0	0	8
17:30	0	0	14	3	0	0	0	17	0	0	10	1	0	0	0	11
17:45	0	0	12	2	0	0	0	14	0	0	7	0	0	0	0	7
<b>H/TOT</b>	0	0	69	9	0	0	0	78	0	0	33	2	0	0	0	35
18:00	0	0	10	3	0	0	0	13	0	0	8	0	0	0	0	8
18:15	0	1	19	2	1	0	0	23	0	0	12	3	0	0	0	15
18:30	0	0	12	0	0	0	0	12	0	0	12	3	0	0	0	15
18:45	0	0	12	1	0	0	0	13	0	0	8	1	0	0	0	9
<b>H/TOT</b>	0	1	53	6	1	0	0	61	0	0	40	7	0	0	0	47
<b>P/TOT</b>	1	1	173	18	2	0	0	195	0	0	106	10	1	0	0	117

Site: 1

Location: A649 Halifax Road/Ripley Road - 3arm Priority Junction

TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
07:00	3	0	105	13	0	0	1	122	0	1	40	8	1	0	2	52
07:15	0	0	129	23	0	0	1	153	0	0	56	7	0	0	1	64
07:30	0	0	161	38	2	1	0	202	0	1	75	11	8	2	0	97
07:45	0	2	163	34	2	0	1	202	0	0	75	22	4	4	1	106
<b>H/TOT</b>	<b>3</b>	<b>2</b>	<b>558</b>	<b>108</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>679</b>	<b>0</b>	<b>2</b>	<b>246</b>	<b>48</b>	<b>13</b>	<b>6</b>	<b>4</b>	<b>319</b>
08:00	0	1	142	14	2	1	3	163	0	1	83	17	1	2	3	107
08:15	1	0	137	19	3	3	2	165	0	0	94	18	0	0	0	112
08:30	0	0	136	20	2	0	1	159	0	0	73	9	2	0	2	86
08:45	0	1	134	19	4	0	2	160	0	0	94	13	2	1	1	111
<b>H/TOT</b>	<b>1</b>	<b>2</b>	<b>549</b>	<b>72</b>	<b>11</b>	<b>4</b>	<b>8</b>	<b>647</b>	<b>0</b>	<b>1</b>	<b>344</b>	<b>57</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>416</b>
09:00	0	2	98	16	5	1	1	123	0	0	45	11	3	2	1	62
09:15	0	0	69	12	1	2	1	85	0	0	53	11	3	1	0	68
09:30	0	0	65	9	1	2	1	78	0	0	46	9	3	2	1	61
09:45	1	0	86	14	0	0	1	102	0	0	43	11	3	0	0	57
<b>H/TOT</b>	<b>1</b>	<b>2</b>	<b>318</b>	<b>51</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>388</b>	<b>0</b>	<b>0</b>	<b>187</b>	<b>42</b>	<b>12</b>	<b>5</b>	<b>2</b>	<b>248</b>
<b>P/TOT</b>	<b>5</b>	<b>6</b>	<b>1425</b>	<b>231</b>	<b>22</b>	<b>10</b>	<b>15</b>	<b>1714</b>	<b>0</b>	<b>3</b>	<b>777</b>	<b>147</b>	<b>30</b>	<b>14</b>	<b>12</b>	<b>983</b>

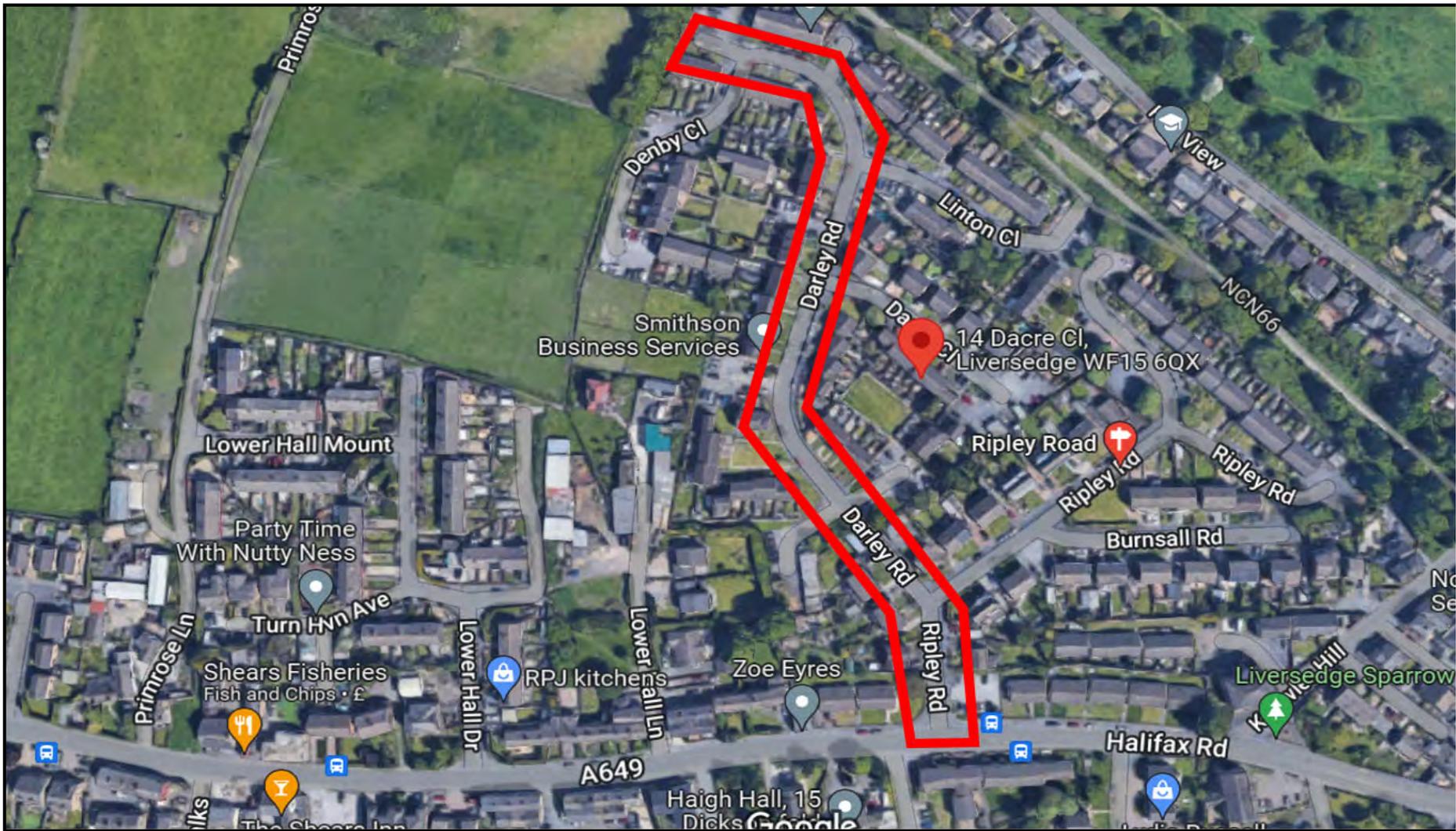
TIME	TO ARM C							TOT	FROM ARM C							TOT
	PC	MC	CAR	LGV	OGV1	OGV2	PSV		PC	MC	CAR	LGV	OGV1	OGV2	PSV	
16:00	0	0	79	12	1	1	3	96	1	0	110	20	1	0	1	133
16:15	0	0	73	14	1	0	2	90	0	0	137	13	1	0	1	152
16:30	1	0	94	4	1	0	1	101	0	2	144	16	1	0	0	163
16:45	0	1	94	8	2	0	0	105	1	0	133	10	1	0	0	145
<b>H/TOT</b>	<b>1</b>	<b>1</b>	<b>340</b>	<b>38</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>392</b>	<b>2</b>	<b>2</b>	<b>524</b>	<b>59</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>593</b>
17:00	0	0	85	7	0	0	2	94	1	1	164	19	1	0	2	188
17:15	0	1	98	13	0	0	0	112	1	0	168	15	1	0	1	186
17:30	0	1	101	6	0	0	2	110	0	1	153	18	0	0	0	172
17:45	0	0	78	7	0	0	0	85	0	2	125	7	0	0	1	135
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>362</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>401</b>	<b>2</b>	<b>4</b>	<b>610</b>	<b>59</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>681</b>
18:00	0	0	84	6	1	0	2	93	0	0	111	5	0	0	0	116
18:15	0	0	88	4	0	0	0	92	0	1	97	7	1	0	1	107
18:30	0	1	63	3	0	0	1	68	0	0	83	8	0	0	1	92
18:45	1	2	60	2	0	0	1	66	0	0	73	4	0	0	0	77
<b>H/TOT</b>	<b>1</b>	<b>3</b>	<b>295</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>319</b>	<b>0</b>	<b>1</b>	<b>364</b>	<b>24</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>392</b>
<b>P/TOT</b>	<b>2</b>	<b>6</b>	<b>997</b>	<b>86</b>	<b>6</b>	<b>1</b>	<b>14</b>	<b>1112</b>	<b>4</b>	<b>7</b>	<b>1498</b>	<b>142</b>	<b>7</b>	<b>0</b>	<b>8</b>	<b>1666</b>

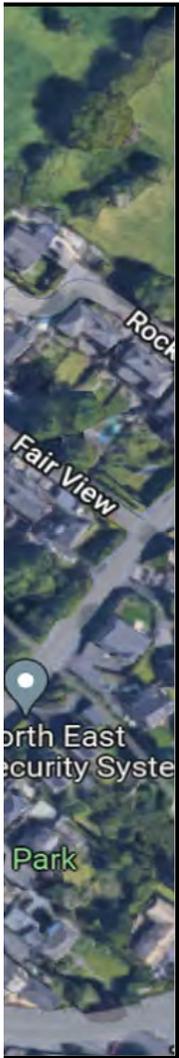




TOTAL TRAFFIC  
SURVEYS LTD  
DATA COLLECTION

Job Title: Ripley Rd/Darley Rd, Liversage  
Job Number: TTS-1484-Nov  
Client: Vectos  
Survey Date: Friday 4th & Weds 9th Nov 2022  
Survey Period: 00:30  
Survey Type: Parking Surveys  
Comments & Weather: Dry and fine





# Total Traffic Surveys Ltd



Client: Vectos  
 Project Number: TTS-1484-Nov  
 Date of Survey: Friday 4th & Weds 11th Nov 2022  
 Survey Type: Parking Surveys  
 Road Name: Ripley Rd\_Darley Rd

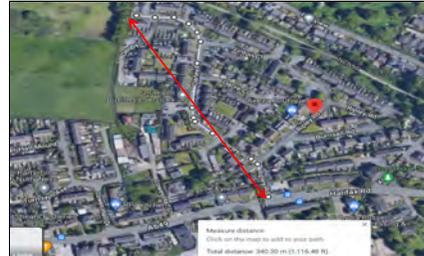
### Parking Restrictions:

Parking bays:	No
Pay and Display:	N/A
Shared Users:	N/A
Loading Bays:	N/A
Double Yellow:	No
Cycle / Bus Lane:	No
Bus Stops:	No

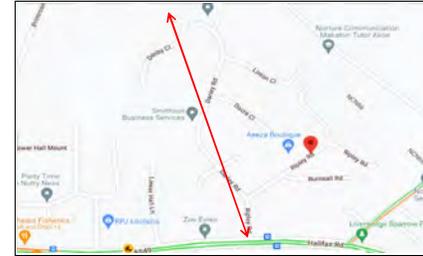
### Notes (reasons for any overstress and details of 'Other' parking types):

Mainly footway parking

### Aerial View:



### Street Views:



### Parking Inventory

Parking Type	Legal Parking Areas											Illegal Parking Areas								
	Un-restricted	Parking Bays	Permit Holder Bays	Pay and Display Bays	Shared User Bays	Disabled Bays	Loading Bays	M/C Bays	Doctor Bays	Car Club Bays	Single Yellow Line	Other (F'way)	Driveway / Drop Kerb	Single Yellow Line	Double Yellow Line	Single Red Line	Double Red Line	Keep Clear / Zig-zag	Cycle Lane / Bus Lane	Bus Stop
Number of Spaces	100	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	0	0	0	0
	Total Legal Spaces											Total Illegal Spaces								
	100											34								

### Restrictions

### Parking Inventory (M)

Parking Type	Legal Parking Areas											Illegal Parking Areas								
	Un-restricted	Parking Bays	Permit Holder Bays	Pay and Display Bays	Shared User Bays	Disabled Bays	Loading Bays	M/C Bays	Doctor Bays	Car Club Bays	Single Yellow Line	Other (F'way)	Driveway / Drop Kerb	Single Yellow Line	Double Yellow Line	Single Red Line	Double Red Line	Keep Clear / Zig-zag	Cycle Lane / Bus Lane	Bus Stop
Metres	512	0	0	0	0	0	0	0	0	0	0	0	170	0	0	0	0	0	0	0
	Total Legal Space											Total Illegal Space								
	512											170								

### Parking Beat Data

Time	Legal Parking Areas											Illegal Parking Areas							Legally Parked Vehicles	Legal Parking Stress	Total Parked Vehicles	Total Parking Stress		
	Un-restricted	Parking Bays	Permit Holder Bays	Pay and Display Bays	Shared User Bays	Disabled Bays	Loading Bays	M/C Bays	Doctor Bays	Car Club Bays	Single Yellow Line	Other (F'way)	Driveway / Drop Kerb	Single Yellow Line	Double Yellow Line	Single Red Line	Double Red Line	Keep Clear / Zig-zag					Cycle Lane / Bus Lane	Bus Stop
Friday 0030	5	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	34	34%	34	34%
Wednesday 0040	4	0	0	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0	32	32%	32	32%





# Appendix D

TRICS Outputs

Calculation Reference: AUDIT-715001-221104-1157

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : A - HOUSES PRIVATELY OWNED  
 MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	CT CENTRAL BEDFORDSHIRE	1 days
	ES EAST SUSSEX	2 days
	HC HAMPSHIRE	5 days
	KC KENT	1 days
	SC SURREY	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	SD SWINDON	1 days
04	EAST ANGLIA	
	NF NORFOLK	3 days
	SF SUFFOLK	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	2 days
08	NORTH WEST	
	AC CHESHIRE WEST & CHESTER	1 days
09	NORTH	
	DH DURHAM	1 days
11	SCOTLAND	
	HI HIGHLAND	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: 10 to 99 (units: )  
 Range Selected by User: 6 to 100 (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: 01/01/16 to 22/06/22

*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.*

Selected survey days:

Tuesday	6 days
Wednesday	9 days
Thursday	6 days

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

Selected survey types:

Manual count	21 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 undertaken using machines.*

Selected Locations:

Suburban Area (PPS6 Out of Centre)	9
Edge of Town	12

*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.*

Selected Location Sub Categories:

Residential Zone 21

*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.*

Secondary Filtering selection:

Use Class:

C3 21 days

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.*

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	7 days
10,001 to 15,000	3 days
15,001 to 20,000	7 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	3 days
50,001 to 75,000	5 days
75,001 to 100,000	4 days
100,001 to 125,000	1 days
125,001 to 250,000	6 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	17 days

*This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.*

Travel Plan:

Yes	13 days
No	8 days

*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.*

PTAL Rating:

No PTAL Present 21 days

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



LIST OF SITES relevant to selection parameters (Cont.)

8	HC-03-A-22	MIXED HOUSES		HAMPSHIRE
	BOW LAKE GARDENS NEAR EASTLEIGH BISHOPSTOKE Edge of Town Residential Zone Total No of Dwellings: 40 <i>Survey date: WEDNESDAY 31/10/18</i>			
	<i>Survey Type: MANUAL</i>			
9	HC-03-A-23	HOUSES & FLATS		HAMPSHIRE
	CANADA WAY LIPHOOK  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 62 <i>Survey date: TUESDAY 19/11/19</i>			
	<i>Survey Type: MANUAL</i>			
10	HC-03-A-27	MIXED HOUSES		HAMPSHIRE
	DAIRY ROAD ANDOVER  Edge of Town Residential Zone Total No of Dwellings: 73 <i>Survey date: TUESDAY 16/11/21</i>			
	<i>Survey Type: MANUAL</i>			
11	HI-03-A-14	SEMI-DETACHED & TERRACED		HIGHLAND
	KING BRUDE ROAD INVERNESS SCORGUIE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 40 <i>Survey date: WEDNESDAY 23/03/16</i>			
	<i>Survey Type: MANUAL</i>			
12	KC-03-A-03	MIXED HOUSES & FLATS		KENT
	HYTHE ROAD ASHFORD WILLESBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 <i>Survey date: THURSDAY 14/07/16</i>			
	<i>Survey Type: MANUAL</i>			
13	NF-03-A-04	MIXED HOUSES		NORFOLK
	NORTH WALSHAM ROAD NORTH WALSHAM  Edge of Town Residential Zone Total No of Dwellings: 70 <i>Survey date: WEDNESDAY 18/09/19</i>			
	<i>Survey Type: MANUAL</i>			
14	NF-03-A-05	MIXED HOUSES		NORFOLK
	HEATH DRIVE HOLT  Edge of Town Residential Zone Total No of Dwellings: 40 <i>Survey date: THURSDAY 19/09/19</i>			
	<i>Survey Type: MANUAL</i>			
15	NF-03-A-25	MIXED HOUSES & FLATS		NORFOLK
	WOODFARM LANE GORLESTON-ON-SEA  Edge of Town Residential Zone Total No of Dwellings: 55 <i>Survey date: TUESDAY 21/09/21</i>			
	<i>Survey Type: MANUAL</i>			

LIST OF SITES relevant to selection parameters (Cont.)

16	NY-03-A-13	TERRACED HOUSES	NORTH YORKSHIRE
	CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 10 <i>Survey date: WEDNESDAY 10/05/17</i>		
			<i>Survey Type: MANUAL</i>
17	NY-03-A-14	DETACHED & BUNGALOWS	NORTH YORKSHIRE
	PALACE ROAD RIPON  Edge of Town Residential Zone Total No of Dwellings: 45 <i>Survey date: WEDNESDAY 18/05/22</i>		
			<i>Survey Type: MANUAL</i>
18	SC-03-A-07	MIXED HOUSES	SURREY
	FOLLY HILL FARNHAM  Edge of Town Residential Zone Total No of Dwellings: 41 <i>Survey date: WEDNESDAY 11/05/22</i>		
			<i>Survey Type: MANUAL</i>
19	SD-03-A-01	SEMI DETACHED	SWINDON
	HEADLANDS GROVE SWINDON  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 27 <i>Survey date: THURSDAY 22/09/16</i>		
			<i>Survey Type: MANUAL</i>
20	SF-03-A-07	MIXED HOUSES	SUFFOLK
	FOXHALL ROAD IPSWICH  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 73 <i>Survey date: THURSDAY 09/05/19</i>		
			<i>Survey Type: MANUAL</i>
21	WS-03-A-10	MIXED HOUSES	WEST SUSSEX
	TODDINGTON LANE LITTLEHAMPTON WICK Edge of Town Residential Zone Total No of Dwellings: 79 <i>Survey date: WEDNESDAY 07/11/18</i>		
			<i>Survey Type: MANUAL</i>

*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
HF-03-A-04	Covid-19 restrictions
KC-03-A-09	Covid-19 restrictions

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.67

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.088	21	53	0.370	21	53	0.458
08:00 - 09:00	21	53	0.145	21	53	0.397	21	53	0.542
09:00 - 10:00	21	53	0.150	21	53	0.178	21	53	0.328
10:00 - 11:00	21	53	0.144	21	53	0.187	21	53	0.331
11:00 - 12:00	21	53	0.151	21	53	0.173	21	53	0.324
12:00 - 13:00	21	53	0.167	21	53	0.172	21	53	0.339
13:00 - 14:00	21	53	0.182	21	53	0.170	21	53	0.352
14:00 - 15:00	21	53	0.172	21	53	0.215	21	53	0.387
15:00 - 16:00	21	53	0.268	21	53	0.182	21	53	0.450
16:00 - 17:00	21	53	0.302	21	53	0.164	21	53	0.466
17:00 - 18:00	21	53	0.374	21	53	0.166	21	53	0.540
18:00 - 19:00	21	53	0.309	21	53	0.155	21	53	0.464
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>2.452</b>			<b>2.529</b>			<b>4.981</b>

*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: 10 - 99 (units: )  
 Survey date date range: 01/01/16 - 22/06/22  
 Number of weekdays (Monday-Friday): 21  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys automatically removed from selection: 1  
 Surveys manually removed from selection: 2

*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 TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.001	21	53	0.002	21	53	0.003
08:00 - 09:00	21	53	0.004	21	53	0.004	21	53	0.008
09:00 - 10:00	21	53	0.004	21	53	0.004	21	53	0.008
10:00 - 11:00	21	53	0.002	21	53	0.003	21	53	0.005
11:00 - 12:00	21	53	0.004	21	53	0.004	21	53	0.008
12:00 - 13:00	21	53	0.004	21	53	0.004	21	53	0.008
13:00 - 14:00	21	53	0.001	21	53	0.001	21	53	0.002
14:00 - 15:00	21	53	0.002	21	53	0.002	21	53	0.004
15:00 - 16:00	21	53	0.003	21	53	0.003	21	53	0.006
16:00 - 17:00	21	53	0.002	21	53	0.002	21	53	0.004
17:00 - 18:00	21	53	0.004	21	53	0.004	21	53	0.008
18:00 - 19:00	21	53	0.002	21	53	0.002	21	53	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.033			0.035			0.068

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.003	21	53	0.002	21	53	0.005
08:00 - 09:00	21	53	0.004	21	53	0.003	21	53	0.007
09:00 - 10:00	21	53	0.006	21	53	0.006	21	53	0.012
10:00 - 11:00	21	53	0.004	21	53	0.004	21	53	0.008
11:00 - 12:00	21	53	0.005	21	53	0.009	21	53	0.014
12:00 - 13:00	21	53	0.001	21	53	0.001	21	53	0.002
13:00 - 14:00	21	53	0.004	21	53	0.004	21	53	0.008
14:00 - 15:00	21	53	0.001	21	53	0.001	21	53	0.002
15:00 - 16:00	21	53	0.003	21	53	0.003	21	53	0.006
16:00 - 17:00	21	53	0.001	21	53	0.002	21	53	0.003
17:00 - 18:00	21	53	0.001	21	53	0.001	21	53	0.002
18:00 - 19:00	21	53	0.001	21	53	0.000	21	53	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.036			0.070

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.001	21	53	0.001	21	53	0.002
08:00 - 09:00	21	53	0.003	21	53	0.003	21	53	0.006
09:00 - 10:00	21	53	0.000	21	53	0.000	21	53	0.000
10:00 - 11:00	21	53	0.000	21	53	0.000	21	53	0.000
11:00 - 12:00	21	53	0.000	21	53	0.000	21	53	0.000
12:00 - 13:00	21	53	0.000	21	53	0.000	21	53	0.000
13:00 - 14:00	21	53	0.000	21	53	0.000	21	53	0.000
14:00 - 15:00	21	53	0.002	21	53	0.002	21	53	0.004
15:00 - 16:00	21	53	0.003	21	53	0.003	21	53	0.006
16:00 - 17:00	21	53	0.000	21	53	0.000	21	53	0.000
17:00 - 18:00	21	53	0.001	21	53	0.000	21	53	0.001
18:00 - 19:00	21	53	0.000	21	53	0.000	21	53	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.010			0.009			0.019

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.005	21	53	0.013	21	53	0.018
08:00 - 09:00	21	53	0.000	21	53	0.013	21	53	0.013
09:00 - 10:00	21	53	0.004	21	53	0.005	21	53	0.009
10:00 - 11:00	21	53	0.004	21	53	0.001	21	53	0.005
11:00 - 12:00	21	53	0.003	21	53	0.003	21	53	0.006
12:00 - 13:00	21	53	0.003	21	53	0.004	21	53	0.007
13:00 - 14:00	21	53	0.004	21	53	0.002	21	53	0.006
14:00 - 15:00	21	53	0.003	21	53	0.003	21	53	0.006
15:00 - 16:00	21	53	0.013	21	53	0.002	21	53	0.015
16:00 - 17:00	21	53	0.006	21	53	0.003	21	53	0.009
17:00 - 18:00	21	53	0.004	21	53	0.004	21	53	0.008
18:00 - 19:00	21	53	0.004	21	53	0.002	21	53	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.053			0.055			0.108

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.

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.107	21	53	0.499	21	53	0.606
08:00 - 09:00	21	53	0.164	21	53	0.595	21	53	0.759
09:00 - 10:00	21	53	0.176	21	53	0.232	21	53	0.408
10:00 - 11:00	21	53	0.173	21	53	0.241	21	53	0.414
11:00 - 12:00	21	53	0.187	21	53	0.215	21	53	0.402
12:00 - 13:00	21	53	0.201	21	53	0.217	21	53	0.418
13:00 - 14:00	21	53	0.237	21	53	0.209	21	53	0.446
14:00 - 15:00	21	53	0.212	21	53	0.259	21	53	0.471
15:00 - 16:00	21	53	0.423	21	53	0.239	21	53	0.662
16:00 - 17:00	21	53	0.442	21	53	0.238	21	53	0.680
17:00 - 18:00	21	53	0.515	21	53	0.229	21	53	0.744
18:00 - 19:00	21	53	0.419	21	53	0.206	21	53	0.625
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.256			3.379			6.635

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.021	21	53	0.050	21	53	0.071
08:00 - 09:00	21	53	0.042	21	53	0.161	21	53	0.203
09:00 - 10:00	21	53	0.058	21	53	0.042	21	53	0.100
10:00 - 11:00	21	53	0.030	21	53	0.056	21	53	0.086
11:00 - 12:00	21	53	0.048	21	53	0.042	21	53	0.090
12:00 - 13:00	21	53	0.040	21	53	0.046	21	53	0.086
13:00 - 14:00	21	53	0.043	21	53	0.038	21	53	0.081
14:00 - 15:00	21	53	0.044	21	53	0.033	21	53	0.077
15:00 - 16:00	21	53	0.117	21	53	0.047	21	53	0.164
16:00 - 17:00	21	53	0.062	21	53	0.037	21	53	0.099
17:00 - 18:00	21	53	0.039	21	53	0.047	21	53	0.086
18:00 - 19:00	21	53	0.059	21	53	0.038	21	53	0.097
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.603			0.637			1.240

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL BUS/TRAM PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.004	21	53	0.019	21	53	0.023
08:00 - 09:00	21	53	0.002	21	53	0.030	21	53	0.032
09:00 - 10:00	21	53	0.004	21	53	0.014	21	53	0.018
10:00 - 11:00	21	53	0.009	21	53	0.012	21	53	0.021
11:00 - 12:00	21	53	0.006	21	53	0.004	21	53	0.010
12:00 - 13:00	21	53	0.008	21	53	0.010	21	53	0.018
13:00 - 14:00	21	53	0.002	21	53	0.002	21	53	0.004
14:00 - 15:00	21	53	0.008	21	53	0.006	21	53	0.014
15:00 - 16:00	21	53	0.019	21	53	0.010	21	53	0.029
16:00 - 17:00	21	53	0.016	21	53	0.001	21	53	0.017
17:00 - 18:00	21	53	0.014	21	53	0.005	21	53	0.019
18:00 - 19:00	21	53	0.013	21	53	0.004	21	53	0.017
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.105			0.117			0.222

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL RAIL PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.000	21	53	0.021	21	53	0.021
08:00 - 09:00	21	53	0.000	21	53	0.019	21	53	0.019
09:00 - 10:00	21	53	0.000	21	53	0.004	21	53	0.004
10:00 - 11:00	21	53	0.000	21	53	0.001	21	53	0.001
11:00 - 12:00	21	53	0.000	21	53	0.000	21	53	0.000
12:00 - 13:00	21	53	0.002	21	53	0.000	21	53	0.002
13:00 - 14:00	21	53	0.001	21	53	0.000	21	53	0.001
14:00 - 15:00	21	53	0.000	21	53	0.001	21	53	0.001
15:00 - 16:00	21	53	0.002	21	53	0.000	21	53	0.002
16:00 - 17:00	21	53	0.008	21	53	0.000	21	53	0.008
17:00 - 18:00	21	53	0.018	21	53	0.000	21	53	0.018
18:00 - 19:00	21	53	0.020	21	53	0.003	21	53	0.023
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.051			0.049			0.100

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL COACH PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.000	21	53	0.002	21	53	0.002
08:00 - 09:00	21	53	0.000	21	53	0.003	21	53	0.003
09:00 - 10:00	21	53	0.000	21	53	0.000	21	53	0.000
10:00 - 11:00	21	53	0.000	21	53	0.000	21	53	0.000
11:00 - 12:00	21	53	0.000	21	53	0.000	21	53	0.000
12:00 - 13:00	21	53	0.000	21	53	0.000	21	53	0.000
13:00 - 14:00	21	53	0.000	21	53	0.000	21	53	0.000
14:00 - 15:00	21	53	0.002	21	53	0.000	21	53	0.002
15:00 - 16:00	21	53	0.003	21	53	0.000	21	53	0.003
16:00 - 17:00	21	53	0.000	21	53	0.000	21	53	0.000
17:00 - 18:00	21	53	0.000	21	53	0.000	21	53	0.000
18:00 - 19:00	21	53	0.000	21	53	0.000	21	53	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.005			0.010

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.

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

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.004	21	53	0.042	21	53	0.046
08:00 - 09:00	21	53	0.002	21	53	0.051	21	53	0.053
09:00 - 10:00	21	53	0.004	21	53	0.018	21	53	0.022
10:00 - 11:00	21	53	0.009	21	53	0.013	21	53	0.022
11:00 - 12:00	21	53	0.006	21	53	0.004	21	53	0.010
12:00 - 13:00	21	53	0.010	21	53	0.010	21	53	0.020
13:00 - 14:00	21	53	0.003	21	53	0.002	21	53	0.005
14:00 - 15:00	21	53	0.010	21	53	0.007	21	53	0.017
15:00 - 16:00	21	53	0.023	21	53	0.010	21	53	0.033
16:00 - 17:00	21	53	0.024	21	53	0.001	21	53	0.025
17:00 - 18:00	21	53	0.032	21	53	0.005	21	53	0.037
18:00 - 19:00	21	53	0.033	21	53	0.006	21	53	0.039
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.160			0.169			0.329

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.

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

Total People to Total Vehicles ratio (all time periods and directions): 1.67

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.137	21	53	0.603	21	53	0.740
08:00 - 09:00	21	53	0.208	21	53	0.820	21	53	1.028
09:00 - 10:00	21	53	0.242	21	53	0.297	21	53	0.539
10:00 - 11:00	21	53	0.217	21	53	0.310	21	53	0.527
11:00 - 12:00	21	53	0.244	21	53	0.264	21	53	0.508
12:00 - 13:00	21	53	0.253	21	53	0.276	21	53	0.529
13:00 - 14:00	21	53	0.286	21	53	0.251	21	53	0.537
14:00 - 15:00	21	53	0.269	21	53	0.302	21	53	0.571
15:00 - 16:00	21	53	0.577	21	53	0.297	21	53	0.874
16:00 - 17:00	21	53	0.534	21	53	0.278	21	53	0.812
17:00 - 18:00	21	53	0.590	21	53	0.286	21	53	0.876
18:00 - 19:00	21	53	0.515	21	53	0.252	21	53	0.767
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>4.072</b>			<b>4.236</b>			<b>8.308</b>

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.073	21	53	0.332	21	53	0.405
08:00 - 09:00	21	53	0.115	21	53	0.367	21	53	0.482
09:00 - 10:00	21	53	0.119	21	53	0.153	21	53	0.272
10:00 - 11:00	21	53	0.107	21	53	0.142	21	53	0.249
11:00 - 12:00	21	53	0.124	21	53	0.136	21	53	0.260
12:00 - 13:00	21	53	0.139	21	53	0.141	21	53	0.280
13:00 - 14:00	21	53	0.141	21	53	0.132	21	53	0.273
14:00 - 15:00	21	53	0.145	21	53	0.179	21	53	0.324
15:00 - 16:00	21	53	0.231	21	53	0.151	21	53	0.382
16:00 - 17:00	21	53	0.269	21	53	0.140	21	53	0.409
17:00 - 18:00	21	53	0.331	21	53	0.147	21	53	0.478
18:00 - 19:00	21	53	0.289	21	53	0.148	21	53	0.437
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			2.083			2.168			4.251

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL LGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.011	21	53	0.031	21	53	0.042
08:00 - 09:00	21	53	0.019	21	53	0.021	21	53	0.040
09:00 - 10:00	21	53	0.019	21	53	0.015	21	53	0.034
10:00 - 11:00	21	53	0.030	21	53	0.035	21	53	0.065
11:00 - 12:00	21	53	0.017	21	53	0.024	21	53	0.041
12:00 - 13:00	21	53	0.023	21	53	0.025	21	53	0.048
13:00 - 14:00	21	53	0.034	21	53	0.032	21	53	0.066
14:00 - 15:00	21	53	0.022	21	53	0.029	21	53	0.051
15:00 - 16:00	21	53	0.028	21	53	0.021	21	53	0.049
16:00 - 17:00	21	53	0.028	21	53	0.018	21	53	0.046
17:00 - 18:00	21	53	0.035	21	53	0.014	21	53	0.049
18:00 - 19:00	21	53	0.017	21	53	0.005	21	53	0.022
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.283			0.270			0.553

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL MOTOR CYCLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.000	21	53	0.002	21	53	0.002
08:00 - 09:00	21	53	0.001	21	53	0.000	21	53	0.001
09:00 - 10:00	21	53	0.002	21	53	0.000	21	53	0.002
10:00 - 11:00	21	53	0.002	21	53	0.004	21	53	0.006
11:00 - 12:00	21	53	0.001	21	53	0.000	21	53	0.001
12:00 - 13:00	21	53	0.000	21	53	0.001	21	53	0.001
13:00 - 14:00	21	53	0.001	21	53	0.001	21	53	0.002
14:00 - 15:00	21	53	0.000	21	53	0.003	21	53	0.003
15:00 - 16:00	21	53	0.001	21	53	0.001	21	53	0.002
16:00 - 17:00	21	53	0.003	21	53	0.003	21	53	0.006
17:00 - 18:00	21	53	0.003	21	53	0.000	21	53	0.003
18:00 - 19:00	21	53	0.000	21	53	0.000	21	53	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.014			0.015			0.029

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL Bus Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.003	21	53	0.001	21	53	0.004
08:00 - 09:00	21	53	0.000	21	53	0.002	21	53	0.002
09:00 - 10:00	21	53	0.000	21	53	0.002	21	53	0.002
10:00 - 11:00	21	53	0.000	21	53	0.000	21	53	0.000
11:00 - 12:00	21	53	0.001	21	53	0.000	21	53	0.001
12:00 - 13:00	21	53	0.001	21	53	0.000	21	53	0.001
13:00 - 14:00	21	53	0.000	21	53	0.000	21	53	0.000
14:00 - 15:00	21	53	0.001	21	53	0.001	21	53	0.002
15:00 - 16:00	21	53	0.001	21	53	0.002	21	53	0.003
16:00 - 17:00	21	53	0.000	21	53	0.000	21	53	0.000
17:00 - 18:00	21	53	0.001	21	53	0.003	21	53	0.004
18:00 - 19:00	21	53	0.004	21	53	0.000	21	53	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.011			0.023

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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL Scooters

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip 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	21	53	0.000	21	53	0.000	21	53	0.000
08:00 - 09:00	21	53	0.000	21	53	0.001	21	53	0.001
09:00 - 10:00	21	53	0.000	21	53	0.000	21	53	0.000
10:00 - 11:00	21	53	0.000	21	53	0.000	21	53	0.000
11:00 - 12:00	21	53	0.000	21	53	0.000	21	53	0.000
12:00 - 13:00	21	53	0.000	21	53	0.000	21	53	0.000
13:00 - 14:00	21	53	0.000	21	53	0.000	21	53	0.000
14:00 - 15:00	21	53	0.000	21	53	0.000	21	53	0.000
15:00 - 16:00	21	53	0.001	21	53	0.000	21	53	0.001
16:00 - 17:00	21	53	0.000	21	53	0.000	21	53	0.000
17:00 - 18:00	21	53	0.000	21	53	0.000	21	53	0.000
18:00 - 19:00	21	53	0.000	21	53	0.000	21	53	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.001			0.002

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.

# Appendix E

JUNCTIONS 10 Modelling Outputs

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.3.1598 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
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: A649-Ripley Road.j10  
 Path: N:\Vectos Job Data\2022\VN222468 Primrose Lane, Liversedge Planning Application\Picady  
 Report generation date: 07/12/2022 13:41:51

- »2022, AM
- »2022, PM
- »2027 Base, AM
- »2027 Base, PM
- »2027 Base + Dev, AM
- »2027 Base + Dev, PM

**Summary of junction performance**

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>2022</b>										
Stream B-AC	D1	0.3	12.28	0.23	B	D2	0.1	7.48	0.08	A
Stream C-AB		0.1	9.60	0.07	A		0.2	8.72	0.13	A
<b>2027 Base</b>										
Stream B-AC	D3	0.3	13.02	0.24	B	D4	0.1	7.63	0.08	A
Stream C-AB		0.1	9.90	0.07	A		0.2	8.85	0.14	A
<b>2027 Base + Dev</b>										
Stream B-AC	D5	0.5	14.73	0.32	B	D6	0.1	7.90	0.10	A
Stream C-AB		0.1	10.12	0.09	B		0.2	9.39	0.18	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

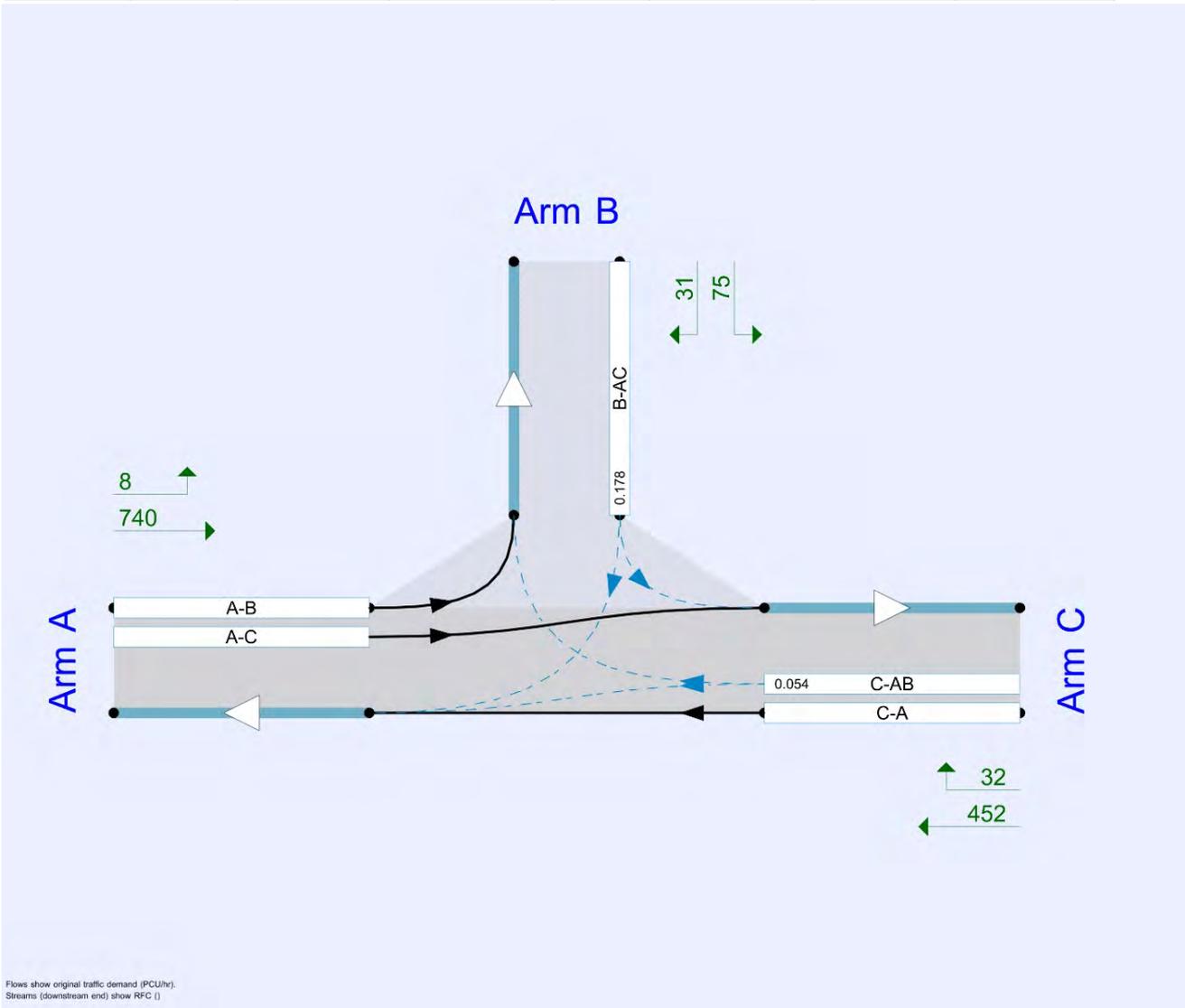
**File summary**

**File Description**

Title	
Location	
Site number	
Date	07/12/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOSNORTH\manchester.modelling
Description	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

**Demand Set Summary**

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15
D2	2022	PM	ONE HOUR	17:00	18:30	15
D3	2027 Base	AM	ONE HOUR	08:00	09:30	15
D4	2027 Base	PM	ONE HOUR	17:00	18:30	15
D5	2027 Base + Dev	AM	ONE HOUR	08:00	09:30	15
D6	2027 Base + Dev	PM	ONE HOUR	17:00	18:30	15

**Analysis Set Details**

ID	Network flow scaling factor (%)
A1	100.000



# 2022, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.99	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.99	A

## Arms

### Arms

Arm	Name	Description	Arm type
A	A649 Halifax Rd (W)		Major
B	Ripley Road		Minor
C	A649 Halifax Rd (E)		Major

### Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			0.0	✓	6.00

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	25	25

### Slope / Intercept / Capacity

#### Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	523	0.095	0.241	0.151	0.344
B-C	672	0.103	0.260	-	-
C-B	574	0.222	0.222	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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 Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	701	100.000
B		✓	79	100.000
C		✓	449	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	6	695
	B	23	0	56
	C	424	25	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	528	528
	B	59	59
	C	338	338
08:15-08:30	A	630	630
	B	71	71
	C	404	404
08:30-08:45	A	772	772
	B	87	87
	C	494	494
08:45-09:00	A	772	772
	B	87	87
	C	494	494
09:00-09:15	A	630	630
	B	71	71
	C	404	404
09:15-09:30	A	528	528
	B	59	59
	C	338	338

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.23	12.28	0.3	B
C-AB	0.07	9.60	0.1	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	459	0.129	59	0.1	8.977	A
C-AB	19	457	0.041	19	0.0	8.220	A
C-A	319			319			
A-B	5			5			
A-C	523			523			

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	71	427	0.166	71	0.2	10.112	B
C-AB	22	434	0.052	22	0.1	8.749	A
C-A	381			381			
A-B	5			5			
A-C	625			625			

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	380	0.229	87	0.3	12.253	B
C-AB	28	402	0.068	27	0.1	9.600	A
C-A	467			467			
A-B	7			7			
A-C	765			765			

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	380	0.229	87	0.3	12.285	B
C-AB	28	402	0.068	28	0.1	9.604	A
C-A	467			467			
A-B	7			7			
A-C	765			765			

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	71	427	0.166	71	0.2	10.144	B
C-AB	22	434	0.052	23	0.1	8.754	A
C-A	381			381			
A-B	5			5			
A-C	625			625			

**09:15 - 09:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	459	0.129	60	0.2	9.013	A
C-AB	19	457	0.041	19	0.0	8.224	A
C-A	319			319			
A-B	5			5			
A-C	523			523			

# 2022, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.70	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.70	A

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2022	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	397	100.000
B		✓	37	100.000
C		✓	685	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	15	382
	B	3	0	34
	C	627	58	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	299	299
	B	28	28
	C	516	516
17:15-17:30	A	357	357
	B	33	33
	C	616	616
17:30-17:45	A	437	437
	B	41	41
	C	754	754
17:45-18:00	A	437	437
	B	41	41
	C	754	754
18:00-18:15	A	357	357
	B	33	33
	C	616	616
18:15-18:30	A	299	299
	B	28	28
	C	516	516

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	7.48	0.1	A
C-AB	0.13	8.72	0.2	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	567	0.049	28	0.1	6.675	A
C-AB	44	507	0.086	43	0.1	7.749	A
C-A	472			472			
A-B	11			11			
A-C	288			288			

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	548	0.061	33	0.1	6.987	A
C-AB	52	495	0.105	52	0.1	8.132	A
C-A	564			564			
A-B	13			13			
A-C	343			343			

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	522	0.078	41	0.1	7.479	A
C-AB	64	477	0.134	64	0.2	8.713	A
C-A	690			690			
A-B	17			17			
A-C	421			421			

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	522	0.078	41	0.1	7.479	A
C-AB	64	477	0.134	64	0.2	8.718	A
C-A	690			690			
A-B	17			17			
A-C	421			421			

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	548	0.061	33	0.1	6.992	A
C-AB	52	495	0.105	52	0.1	8.142	A
C-A	564			564			
A-B	13			13			
A-C	343			343			

**18:15 - 18:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	567	0.049	28	0.1	6.682	A
C-AB	44	507	0.086	44	0.1	7.765	A
C-A	472			472			
A-B	11			11			
A-C	288			288			

# 2027 Base, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.98	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.98	A

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2027 Base	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	746	100.000
B		✓	79	100.000
C		✓	477	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	6	740
	B	23	0	56
	C	452	25	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	562	562
	B	59	59
	C	359	359
08:15-08:30	A	671	671
	B	71	71
	C	429	429
08:30-08:45	A	821	821
	B	87	87
	C	525	525
08:45-09:00	A	821	821
	B	87	87
	C	525	525
09:00-09:15	A	671	671
	B	71	71
	C	429	429
09:15-09:30	A	562	562
	B	59	59
	C	359	359

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	13.02	0.3	B
C-AB	0.07	9.90	0.1	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	449	0.133	59	0.2	9.220	A
C-AB	19	449	0.042	19	0.0	8.358	A
C-A	340			340			
A-B	5			5			
A-C	557			557			

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	71	414	0.172	71	0.2	10.493	B
C-AB	22	425	0.053	22	0.1	8.945	A
C-A	406			406			
A-B	5			5			
A-C	665			665			

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	363	0.239	87	0.3	12.981	B
C-AB	28	391	0.070	27	0.1	9.891	A
C-A	498			498			
A-B	7			7			
A-C	815			815			

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	87	363	0.239	87	0.3	13.020	B
C-AB	28	391	0.070	28	0.1	9.895	A
C-A	498			498			
A-B	7			7			
A-C	815			815			

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	71	414	0.172	71	0.2	10.531	B
C-AB	22	425	0.053	23	0.1	8.950	A
C-A	406			406			
A-B	5			5			
A-C	665			665			

**09:15 - 09:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	449	0.133	60	0.2	9.258	A
C-AB	19	449	0.042	19	0.0	8.370	A
C-A	340			340			
A-B	5			5			
A-C	557			557			

# 2027 Base, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.67	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.67	A

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2027 Base	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	423	100.000
B		✓	37	100.000
C		✓	729	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	15	408
	B	3	0	34
	C	671	58	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	318	318
	B	28	28
	C	549	549
17:15-17:30	A	380	380
	B	33	33
	C	655	655
17:30-17:45	A	466	466
	B	41	41
	C	803	803
17:45-18:00	A	466	466
	B	41	41
	C	803	803
18:00-18:15	A	380	380
	B	33	33
	C	655	655
18:15-18:30	A	318	318
	B	28	28
	C	549	549

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	7.63	0.1	A
C-AB	0.14	8.85	0.2	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	561	0.050	28	0.1	6.753	A
C-AB	44	503	0.087	43	0.1	7.822	A
C-A	505			505			
A-B	11			11			
A-C	307			307			

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	541	0.062	33	0.1	7.091	A
C-AB	52	489	0.107	52	0.1	8.229	A
C-A	603			603			
A-B	13			13			
A-C	367			367			

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	512	0.080	41	0.1	7.632	A
C-AB	64	470	0.136	64	0.2	8.849	A
C-A	739			739			
A-B	17			17			
A-C	449			449			

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	512	0.080	41	0.1	7.632	A
C-AB	64	470	0.136	64	0.2	8.854	A
C-A	739			739			
A-B	17			17			
A-C	449			449			

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	541	0.062	33	0.1	7.093	A
C-AB	52	489	0.107	52	0.1	8.239	A
C-A	603			603			
A-B	13			13			
A-C	367			367			

**18:15 - 18:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	561	0.050	28	0.1	6.759	A
C-AB	44	503	0.087	44	0.1	7.838	A
C-A	505			505			
A-B	11			11			
A-C	307			307			

# 2027 Base + Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.41	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.41	A

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2027 Base + Dev	AM	ONE HOUR	08:00	09:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	748	100.000
B		✓	106	100.000
C		✓	484	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	8	740
	B	31	0	75
	C	452	32	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	A	563	563
	B	80	80
	C	364	364
08:15-08:30	A	672	672
	B	95	95
	C	435	435
08:30-08:45	A	824	824
	B	117	117
	C	533	533
08:45-09:00	A	824	824
	B	117	117
	C	533	533
09:00-09:15	A	672	672
	B	95	95
	C	435	435
09:15-09:30	A	563	563
	B	80	80
	C	364	364

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.32	14.73	0.5	B
C-AB	0.09	10.12	0.1	B
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	447	0.178	79	0.2	9.750	A
C-AB	24	449	0.054	24	0.1	8.469	A
C-A	340			340			
A-B	6			6			
A-C	557			557			

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	412	0.231	95	0.3	11.347	B
C-AB	29	424	0.068	29	0.1	9.096	A
C-A	406			406			
A-B	7			7			
A-C	665			665			

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	117	361	0.323	116	0.5	14.649	B
C-AB	35	391	0.090	35	0.1	10.117	B
C-A	498			498			
A-B	9			9			
A-C	815			815			

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	117	361	0.323	117	0.5	14.728	B
C-AB	35	391	0.090	35	0.1	10.123	B
C-A	498			498			
A-B	9			9			
A-C	815			815			

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	412	0.231	96	0.3	11.421	B
C-AB	29	424	0.068	29	0.1	9.104	A
C-A	406			406			
A-B	7			7			
A-C	665			665			

**09:15 - 09:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	447	0.178	80	0.2	9.814	A
C-AB	24	449	0.054	24	0.1	8.480	A
C-A	340			340			
A-B	6			6			
A-C	557			557			

# 2027 Base + Dev , PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

## Junction Network

### Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.91	A

### Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.91	A

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2027 Base + Dev	PM	ONE HOUR	17:00	18:30	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	428	100.000
B		✓	48	100.000
C		✓	749	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	20	408
	B	4	0	44
	C	671	78	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	A	322	322
	B	36	36
	C	564	564
17:15-17:30	A	385	385
	B	43	43
	C	673	673
17:30-17:45	A	471	471
	B	53	53
	C	825	825
17:45-18:00	A	471	471
	B	53	53
	C	825	825
18:00-18:15	A	385	385
	B	43	43
	C	673	673
18:15-18:30	A	322	322
	B	36	36
	C	564	564

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.10	7.90	0.1	A
C-AB	0.18	9.39	0.2	A
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	558	0.065	36	0.1	6.886	A
C-AB	59	502	0.117	58	0.1	8.100	A
C-A	505			505			
A-B	15			15			
A-C	307			307			

#### 17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	538	0.080	43	0.1	7.273	A
C-AB	70	488	0.144	70	0.2	8.601	A
C-A	603			603			
A-B	18			18			
A-C	367			367			

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	509	0.104	53	0.1	7.897	A
C-AB	86	469	0.183	86	0.2	9.379	A
C-A	739			739			
A-B	22			22			
A-C	449			449			

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	508	0.104	53	0.1	7.900	A
C-AB	86	469	0.183	86	0.2	9.391	A
C-A	739			739			
A-B	22			22			
A-C	449			449			

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	538	0.080	43	0.1	7.277	A
C-AB	70	488	0.144	70	0.2	8.615	A
C-A	603			603			
A-B	18			18			
A-C	367			367			

**18:15 - 18:30**

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	558	0.065	36	0.1	6.894	A
C-AB	59	502	0.117	59	0.1	8.120	A
C-A	505			505			
A-B	15			15			
A-C	307			307			

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