



CBO
TRANSPORT

Project: Proposed Residential Development
Carr Lane, Prescot

Client: Torus 62 Ltd / Partner Construction Ltd

Document: Transport Assessment



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1 Introduction

General

- 1.1 CBO Transport Ltd [CBO] has been commissioned by Torus 62 Ltd / Partner Construction Ltd to undertake an assessment of the transport matters associated with a proposed residential development at land at Carr Lane, Prescot.
- 1.2 This Transport Assessment represents a culmination of this work and is submitted with the planning application for the scheme. A Travel Plan Framework has also been prepared and submitted with the application.
- 1.3 The site is located on the south side of Carr Lane and Prescot Park Way and is bound by Carr Lane and Prescot Park Way to the north / northeast, residential properties to the south / southeast and parkland to the west. The location of the land is shown in **Figure 1.1**.
- 1.4 The site is located in the Prescot area and Knowsley Council is both the local planning authority and highway authority for the local roads in the vicinity of the site.

Local Plan Policy

- 1.5 The proposed site was promoted through the Knowsley Local Plan process, with the site now being allocated as a Sustainable Urban Extension (Site Ref: KGBS 10) in the adopted Local Plan Core Strategy dated January 2016.
- 1.6 With regard to site specific requirements, these are set out at Appendix E: Sustainable Urban Extension Allocation Profiles of the Local Plan. For the proposed site, this sets a notional capacity of 74 residential dwellings.

Planning History

- 1.7 Following the allocation of the site, an access only application (planning application reference 22/00376/FUL) was submitted by United Utilities in June 2022. This application, which included a Transport Statement prepared by CBO, sought permission for the construction of a vehicular access to the site from Prescot Park Way which was of a suitable scale and arrangement to serve the up to the notional 74 dwellings allocated for the site.
- 1.8 This application was approved in April 2023.
- 1.9 A copy of the approved access drawing is included at **Appendix A** for reference.

Proposed Scheme

- 1.10 Following on from the allocation of the site and the approval of the access only application, the proposed scheme looks to increase the number of dwellings on the site from the notional 74 dwellings referred to in the Local Plan to 88 dwellings. Access to the scheme would be provided via the approved access arrangement from Prescot Park Way.

Discussions with Knowsley Council / Report Requirements

- 1.11 The applicant has received pre-application advice from Knowsley Council [KC], which has included advice from highway officers. This provides advice relating to the site layout and references the Ensuring a Choice of Travel Supplementary Planning Document in relation to parking requirements. In terms of this report, the advice refers to updating the Transport Statement submitted with the access only application.
- 1.12 As a result, this Transport Assessment provides details of the accessibility of the site by the sustainable modes and the traffic movement at the site arising from the scheme. In terms of traffic impact and based on the work previously undertaken as referred to above in relation to the access only application, this is limited to assessing the operation of the proposed site access from Prescot Park Way and the Prescot Park Way / Carr Lane / Cables Way roundabout to the northwest.

Scope of Report

- 1.13 In light of the above, the purpose of this report is to provide KC with the necessary information to support the proposals and consider their transport implications. In order to provide this information, this report has been produced in 8 sections including this introduction.
- 1.14 Section 2 reviews relevant national and local plan policy, as well as planning policy guidance.
- 1.15 Section 3 reviews existing conditions and provides details of the local area from a highway perspective, whilst Section 4 considers the accessibility of the site by the sustainable modes and linkage to the surrounding area.
- 1.16 Section 5 provides details of the development proposals, whilst Section 6 considers the traffic generations associated with the scheme.
- 1.17 Section 7 then sets out details of the traffic flows used to undertake operational assessments of the proposed site access and Prescott Park Way / Carr Lane / Cables Way roundabout, together with the findings of these assessments. It also provides high level commentary on wider traffic impact.
- 1.18 The conclusions and recommendations of the report are included in Section 8.

2 Planning Policy and Guidance

National Planning Policy Framework

- 2.1 National planning policy in relation to transport matters is set out in the revised National Planning Policy Framework [NPPF] July 2021.
- 2.2 With regard to transport, the policies are contained within paragraphs 104 to 113 at Section 9 and all relate to the promotion of sustainable transport. In considering development proposals, paragraph 108 states that:
- "In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*
- a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
 - b) safe and suitable access to the site can be achieved for all users; and*
 - c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree"*
- 2.3 Paragraph 111 then 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".*

Local Planning Policy

- 2.4 As set out in the introduction, the proposed site is allocated as a Sustainable Urban Extension in the adopted Local Plan Core Strategy dated January 2016.
- 2.5 In relation to transport, Policy SUE2: Sustainable Urban Extensions – Development Principles of the adopted Local Plan Core Strategy (January 2016) sets out the following development principles for Sustainable Urban Extensions in the authority:
- "a) deliver sustainable development;*
- b) demonstrate a comprehensive approach to the development of the relevant Sustainable Urban Extension and to infrastructure provision;*
- f) include appropriate provision for public open space (POS), walking and cycling routes as part of the Green Infrastructure network....."*
- g) provide good transport linkages within the relevant Sustainable Urban Extension and with surrounding areas"*
- 2.6 With regard to site specific requirements, these are set out at Appendix E: Sustainable Urban Extension Allocation Profiles of the Local Plan. For the proposed site, which has a notional capacity of 74 residential dwellings in the Local Plan, the key site constraints and opportunities are listed as:
- *"Flood Zones 2 and 3 are located along the northern boundary of the site (Environment Agency Flood Map, February 2014 Update)*
 - *Local Wildlife Site 11 (Carr Lane Lake, Prescot) is adjacent to the northern boundary of the site*
 - *This site is located within the South Prescot Principal Regeneration Area.*
- 2.7 With regard to the notional 74 dwelling capacity, the supporting text to Policy SUE1 acknowledges that the development capacity is estimated, noting that *"there are always uncertainties over the rate at which proposed development locations will be delivered and their ultimate development capacity."*
- 2.8 The supporting text then goes on to refer to *"including 'headroom' to allow a degree of flexibility, which will be subject to ongoing monitoring up to 2028'."*

- 2.9 In relation to transport and under the heading 'Design and Management of New Development', Policy CS7 (Transport Network) of the Local Plan states that new development will be required to be:
- "a) Located and designed to prioritise accessibility and sustainable modes of travel through a choice of walking, cycling, public transport, and incorporate access for private vehicles. Where deficiencies are identified, developer contributions will be required to improve the accessibility of the location;*
 - b) Located and designed to ensure that larger scale proposals (attracting a lot of visitors, customers and/or employees) are located in the most accessible locations;*
 - c) Where subject to a planning application, accompanied (except in the case of smaller scale proposals) by Transport Assessments and/or Travel Plans;*
 - d) In compliance with adopted cycle, car, disabled and service vehicle parking standards for different types and scales of new development;*
 - e) Inclusive of measures that will mitigate carbon emissions and improve air quality where appropriate; and*
 - f) Consistent with safeguarding arrangements that secure the operational integrity and safety of Liverpool John Lennon Airport.*
- 2.10 In relation to bullet a) above and accessibility by the sustainable modes, Knowsley Council has an "Ensuring a Choice of Travel" Supplementary Planning Document whilst, in relation to bullet d), parking standards are set out in the Knowsley Council's "New Residential Development" Supplementary Planning Document.
- 2.11 This report accords with this policy and where appropriate refers to the above Supplementary Planning Documents.

Planning Practice Guidance

- 2.12 Planning Practice Guidance was published on the 6th March 2014 in relation to "Travel plans, transport assessments and statements in decision-taking".
- 2.13 In considering the over-arching principles that should be taken into account in preparing a Transport Assessment, this guidance suggests they should be:
- "proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible;
 - established at the earliest practicable possible stage of a development proposal;
 - be tailored to particular local;
 - be brought forward through collaborative ongoing working between the Local Planning Authority/ Transport Authority, transport operators, Rail Network Operators, Highways Agency where there may be implications for the strategic road network and other relevant bodies."
- 2.14 This report accords with this guidance.

3 Existing Conditions and Study Area

Site Description

- 3.1 The site is located on the south side of Carr Lane and Prescot Park Way and is bound by Carr Lane and Prescot Park Way to the north / northeast, residential properties to the south / southeast and parkland to the west.
- 3.2 The site as existing is vacant, with no public access.
- 3.3 The location of the site is shown in **Figure 1.1**.
- 3.4 There is an existing access to the site from Prescot Park Way. This access is located at the eastern end of the northern site boundary and approximately 30 metres from the Prescot Park Way / Carr Lane / Cables Way roundabout. This access, which is gated and only used for maintenance access to the site, takes the form of a dropped crossing arrangement.
- 3.5 In addition to the above, Public Footpath PR/1/2 runs along the southeastern boundary of the site and within the site. This footpath commences at the southwestern corner of the site adjacent to the M57, runs northeast along the site boundary and then heads northwest along Prescot Parkway and on to Carr Lane.

Highway Study Area and Observed Traffic Flows

Traffic Flows

- 3.6 As set out in the introduction, it is considered that the appropriate study area in terms of considering traffic impact can be limited to the proposed site access from Prescot Park Way and the Prescot Park Way / Carr Lane / Cables Way roundabout to the northwest.
- 3.7 As also set out in the introduction, an access only application was submitted in June 2022 and approved in April 2023 for the site. This application included observed traffic flows derived from a survey undertaken on Tuesday 19th October 2021 that consisted of a fully classified turning count at the Prescot Park Way / Carr Lane / Cables Way roundabout between the hours 7:00 – 10:00 and 16:00 – 19:00. This survey showed that the weekday morning peak occurs during the hour 7:45 to 8:45, whilst the weekday evening peak occurs during the hour 16:45 to 17:45.
- 3.8 These surveys were carried out within the three year period typically considered acceptable for the use of traffic count data and are still considered to provide a representative base against which to consider the impact of the proposed development.
- 3.9 Based on the above, **Figure 3.1** shows the observed weekday morning and evening peak traffic flows at the Prescot Park Way / Carr Lane / Cables Way roundabout and along Prescot Park Way past the location of the proposed site access.

Highway Network

Prescot Park Way

- 3.10 Prescot Park Way passes the site frontage over a distance of approximately 30 metres. As it passes the site, the route is approximately 6.6 metres in width at the eastern boundary before widening to around 13 metres as it heads northwest. The route is lit and subject to a 30mph speed limit.
- 3.11 Heading north-westbound, Prescot Park Way approaches the eastern boundary of the site in a southeast – northwest direction. As it passes the site, the route curves gently to head north, where it joins Carr Lane and Cables Way via a 3 arm roundabout arrangement.
- 3.12 Prescot Park Way itself is effectively a local road serving a residential link road function between Manchester Road and Carr Lane / Cables Way. As a result, it includes a number of simple priority T junction arrangements serving areas of residential development.

Prescot Park Way / Carr Lane / Cables Way Roundabout

- 3.13 With regard to the Prescot Park Way /Carr Lane / Cables Way roundabout, this is located approximately 45 metres from the eastern boundary of the site and has an inscribed circle diameter of approximately 45 metres. All arms of the roundabout include a flared approach but retain a single lane width at the give way line.
- 3.14 From the roundabout, Carr Lane heads in a westerly direction and joins Huyton Lane. Cables Way heads in a northeast direction from the roundabout, before heading east to Cables Retail Park and on to Manchester Road.

Personal Injury Accident Record

- 3.15 As part of the access only application, accident data was obtained from KC in January 2022 for the latest five year period. The area of search for this data is shown in the Figure at **Appendix B**.
- 3.16 As part of this application, KC has again been approached to obtain data for the latest five year period for this same area of search.
- 3.17 Through this process, KC has indicated that there have been no personal injury accidents recorded in the identified search area or up to the adjacent roundabouts in the last 5 years.
- 3.18 Based on the above it is evident that there is no highway safety issue in the immediate vicinity of the site. As a result, it is considered that there are no existing highway safety issues in the immediate vicinity of the site upon which the proposed development would impact.

4 Accessibility by the Sustainable Modes

Pedestrian & Cycle Infrastructure

- 4.1 As shown in the local linkages plan at **Figure 4.1**, the site has good accessibility for pedestrians and cyclists.

Existing pedestrian and cycle infrastructure

- 4.2 KC has recently implemented a combined footway / cycleway scheme on the southeast side of Prescott Park Way. This scheme runs along Prescott Park Way from the Carr Lane / Cables Way roundabout, past the site and southeast to Emelia Drive.
- 4.3 At the Prescott Park Way / Carr Lane / Cables Way roundabout, this scheme links to the footway / cycleway provisions on the south and east sides of the roundabout, which then link to a combined footway / cycleway running east – west on the north side of Carr Lane and Cables Way.
- 4.4 There are also footways provided on the north side of Prescott Park Way and the south side of Cables Way.

Proposed pedestrian / cycle infrastructure

- 4.5 As part of the access arrangement approved under the access only application, the recently implemented combined footway / cycleway scheme on the southeast side of Prescott Park Way would be retained. It would however be relocated into the island within the site access and along the realigned kerbline between the access and the Prescott Park Way / Carr Lane / Cables Way roundabout.
- 4.6 As set out later in Section 5, two metre wide footways would then be provided on both sides of the access from Prescott Park Way into the site, whilst the streets within the scheme would be conducive to cycle use.
- 4.7 In addition and as also set out in Section 5, it is proposed to divert the Public Footpath running through the site as part of the development. Under this diversion, the footpath would run from the southwest corner of the site (where it could join Prescott Park to the south) and head north / northeast around the northwestern perimeter of the site before linking to the existing footway on the south side of Carr Lane at the northern points of the site. A link would also be provided along the western site boundary through to Carr Lane woodland.
- 4.8 With these provisions in place, residents of the development travelling on foot and by bicycle could access the pedestrian and cycle routes surrounding the site and shown in **Figure 4.1**.

Summary

- 4.9 Based on the above and with the proposed linkages in place, the pedestrian and cycle infrastructure in the vicinity of the site is considered to be of a good quality, providing a suitable and safe pedestrian and cyclist environment. This pedestrian and cycle infrastructure also provides access to the services, facilities and public transport network discussed in this section of the report that are within walking and cycling distance of the site.

Knowsley Council 'Accessibility Assessment'

- 4.10 The 'Accessibility Assessment' included in the KC 'Ensuring a Choice of Travel' Supplementary Planning Guidance [SPG] has been completed.
- 4.11 Given the number of dwellings proposed, the site falls within the "Major" sized development category set out in the SPD. An assessment has therefore been completed on this basis and is included at **Appendix C** of this report for reference. Based on this completed assessment, Table 4.1 below summarises the initial scores for the site and compares them to the minimum scores quoted in the Ensuring Choice of Travel SPD.

Table 4.1: Initial Scores from the Accessibility Assessment

Site / SPD Score	Min Score for Access on Foot	Min Score for Access by Cycle	Min Score for Access by Public Transport	Min Score for Vehicle Access
SPD Minimum Standard	4	5	5	1
Proposed Site	2	5	5	1

- 4.12 As can be seen from the above table, the site meets the minimum standard set out in the Ensuring Choice of Travel SPD in relation to access by cycle, access by public transport and vehicle access. However, in relation to access on foot, and based on initial scores, the site falls short of the suggested standard. This element is therefore discussed below.

Accessibility by Walking

- 4.13 Table 4.1 shows that the site scores 2 in relation to access by walking. As can be seen from the completed assessment in Appendix C, this score is attributed to the site falling outside 800m of a district or local centre.
- 4.14 With regard to the site falling outside 800 metres of a district or local centre, there is a large Tesco store and a Home Bargains store located within 800 metres of the site frontage. These stores therefore fall within the required 800 metres. In addition, Cables Retail Park and Prescott Town Centre are within 0.9 to 1.45km of the centre of the site (0.75 to 1.3km of the site frontage). These are distances that are around what is considered in guidance to be acceptable for a variety of journey purposes and can be walked in around 11 to 18 minutes. As a result, it is suggested that walking to Cables Retail Park and Prescott Town Centre would be possible from the site.
- 4.15 In light of the above, it is considered that the site should score 2 points for being within an appropriate distance of the local shops and centre and that it should therefore score the required 5 in relation to access by walking.

Updated Minimum Accessibility Standard Assessment

- 4.16 Given the above, Table 4.2 below summarises the updated scores for the site and compares them to the minimum scores quoted in the Ensuring Choice of Travel SPD.

Table 4.2: Updated Scores from the Accessibility Assessment

Site / SPD Score	Min Score for Access on Foot	Min Score for Access by Cycle	Min Score for Access by Public Transport	Min Score for Vehicle Access
SPD Minimum Standard	4	5	5	1
Proposed Site	4	5	5	1

- 4.17 As can be seen from the above table, if a more appropriate account is taken of the proximity of the site to the local shops and centre it is concluded that the site meets the minimum standard set out in the Ensuring Choice of Travel SPD in relation to accessibility.

Accessibility Based on Recognised Guidance

Accessibility for Pedestrians

- 4.18 It is commonly accepted that walking has the greatest potential to replace short car trips, particularly those under two kilometres, whilst the Institution of Highways and Transportation "Guidelines for Providing for Journeys on Foot" states that "Walking accounts for over a quarter of all journeys and four fifths of journeys less than one mile".
- 4.19 The "Guidelines for Providing for Journeys on Foot" also includes a table which suggests that 800 metres is an acceptable maximum walking distance in a town centre and that 1.2km is an acceptable maximum walking distance elsewhere. It also suggests a distance of 2km is an acceptable maximum for commuter and education journeys, although statutory guidance indicates that just over 3km is an acceptable walk distance for primary school pupils, with secondary school pupils being expected to walk up to 5km.

- 4.20 In the context of the above, **Figure 4.2** shows the 800m, 1.2km and 2km walking catchments for the site. The areas, services and facilities within these catchments, which are based on walking route distances from the site frontage and not distances as the crow flies, are discussed below.

Local Schools

- 4.21 As shown in **Figures 4.1 and 4.2**, St Marys & St Pauls C of E primary schools are located approximately 1.35km to the east of the site. These school are therefore around the 1.2km walking catchment for the site.
- 4.22 In addition, **Figure 4.2** shows there are four other primary schools to the east of the site that are within the 2.0km catchment, including Our Lady's Catholic Primary School (1.65km), Prescot Primary School (1.85km), St Luke's RC Primary School (1.85km) and Evelyn Community Primary School (2km).
- 4.23 All six of the primary schools referred to above are therefore within the 2km distance deemed acceptable by the IHT guidelines and well within the 3km statutory walk distance.
- 4.24 With regard to high schools and as shown in **Figure 4.2**, The Prescot School is located approximately 1.85km to the north of the site and is therefore within the 2km distance deemed acceptable by the IHT guidelines and well within the 5km statutory walk distance. In addition and at 2.65km to the east of the site, St Edmund Arrowsmith Catholic Academy is over the 2km catchment but well within the 5km statutory walk distance.
- 4.25 In the context of the above, it is suggested that the site is well placed to allow future pupils to walk to and from school.

Local Shops

- 4.26 As shown in **Figures 4.1 and 4.2**, the 800 metre catchment for the site takes in a Home Bargains store off Prescot Park Way, whilst a 900 metre walk would take in the Tesco store at the western end of Cables Retail Park which is open 6:00am to 12:00am during the week and on a Saturday.
- 4.27 These stores therefore provide access to shopping facilities within an acceptable walk distance of the site.

Cables Retail Park and Prescot Town Centre

- 4.28 As shown in **Figure 4.2**, the 1.2km catchment takes in the majority of Cables Retail Park, whilst all of the retail park is within a 1.25km walk. In addition, the southwestern edge of Prescot Town Centre falls within the 1.2km catchment, with all of the town centre being within 1.45km.
- 4.29 Cables Retail Park and Prescot Town Centre, which also includes Prescot shopping centre, are therefore considered to be within easy walking distance of the site and provide access to numerous retail, leisure and employment destinations.

Post Office

- 4.30 There is a Post Office located in Prescot Shopping Centre.

Doctors / Health Facilities

- 4.31 As shown in **Figures 4.1 and 4.2**, Park House Medical Centre is located within the 800 metre catchment to the east of the site off Sewell Street. There is also a pharmacy located just to the south of the medical centre off Manchester Road.
- 4.32 There is therefore considered to be access to health facilities within walking distance of the site.

Whiston Hospital

- 4.33 As shown in **Figure 4.2**, Whiston Hospital is situated to the east of the site and just outside the 2km catchment. There is therefore considered to be access to employment opportunities at the Hospital within walking distance of the site.

The Carr Lane Woods & WGV Memorial Playing Fields (Brown's Fields)

- 4.34 As shown in **Figures 4.1 and 4.2**, The Carr Lane Woods & WGV Memorial Playing Fields (Brown's Fields) are situated just to the west of the site and fall entirely within the 800 metre catchment. These amenities would offer future residents access to recreational facilities within easy walking distance.

Bus Stops and Railway Station

- 4.35 As shown in **Figures 4.1 and 4.2**, the closest bus stops are situated around 300 metres to the southeast of the site on Prescott Park Way. There are also bus stop located around 450 to 650 metres to the east on Cables Way.
- 4.36 In addition to these bus stops and as shown in **Figure 4.2**, Prescott railway station is situated approximately 1.25km from the site.
- 4.37 As set out later in this section, these bus stops and the railway station are considered accessible from the site on foot.

Summary

- 4.38 The above demonstrates that the site is well placed in terms of pedestrian connectivity and that walking represents a very realistic alternative to the car for future residents undertaking educational and shopping trips, some recreational trips and potentially employment trips. Furthermore, the site is well placed for future residents to connect to the local bus and rail networks.

Accessibility for Cyclists

- 4.39 Considering the accessibility of the site by bicycle, it is commonly accepted that cycling also has the potential to substitute for short car trips, particularly those under five kilometres, and to form part of a longer journey by public transport. In this context, **Figure 4.3** shows the 5km cycling catchment for the site.
- 4.40 As can be seen from **Figure 4.3**, all of Prescott and Huyton are within the 5km distance, as are Whiston and Rainhill. A 7 to 8km ride would also take in St Helens and, although outside the 5km catchment, these distances would be accessible to some future residents, particularly given the growing popularity of e-bikes.
- 4.41 In addition, Prescott, Whiston and Huyton railway stations are within a 1.25km, 2.85km and 3.3km cycle ride respectively from the site.
- 4.42 The site is therefore well placed for future residents to travel by bicycle for educational, employment, retail and leisure trips. It also offers the opportunity for future residents to cycle to join the local rail network.

Accessibility by Public Transport

Bus

- 4.43 As set out above and shown in **Figures 4.1 and 4.2**, the closest bus stops are situated around 300 metres to the southeast of the site on Prescott Park Way. There are also bus stops located around 450 to 650 metres to the east on Cables Way. The Prescott Park Way stops are therefore within the 400 metre distance referred to in guidance. With regard to the Cables Way stops and although marginally outside the 400 metre distance, at around a five and a half to eight minute walk via good quality footways it is considered that this additional circa 50 to 250 metre walk distance would not deter future residents from using these stops.
- 4.44 Based on the above, Table 4.1 below shows the buses serving the site.

Table 4.1: Local Bus Services (Monday to Saturday and Sunday)

No.	Route	AM Peak	Off Peak	PM Peak	Saturday	Sunday
Prescot Park Way						
99	Whiston station – Whiston hospital – Prescott – Whiston hospital – Whiston station	Hourly	Hourly	Hourly	Hourly	No service
Cables Way						
89	St Helens – Eccleston – Whiston Hospital – Prescott – Huyton – Belle Vale – Gateacre – Woolton – Hunts Cross – Speke (airport)	Every 20mins	Every 20mins	Every 20mins	Every 30mins	Every 30mins

-
- 4.45 As can be seen from the above, the 89 bus provides a regular service between the site and a number of local destinations. This service therefore offers the opportunity for future residents to travel by bus for employment, retail and leisure purposes.
- 4.46 The 99 service also offer the opportunity to travel by bus to Whiston railway station as part of an onward journey by rail.

Rail

- 4.47 In addition to the bus access, Prescot railway station is situated approximately 1.25km from the site. Although outside the 800 metre distance referred to in guidance, at around a 15 minute walk from the site it is considered that the station would be accessible to some future residents on foot. It would also be within easy cycling distance.
- 4.48 This station is on the Liverpool Lime Street to Wigan North Western line, with trains calling at stations in between including Edge Hill, Wavertree Technology Park and St Helens Central. Monday to Saturday, these trains run at 30 minute frequencies, with hourly services on a Sunday.
- 4.49 In addition to the above, Whiston and Huyton stations are within around a 2.85km and 3.3km cycle ride respectively of the site and therefore considered accessible. These stations provide hourly services to St Helens Junction, Earlestown, Manchester and Manchester airport.
- 4.50 Via these stations, the site is considered to be connected to the local rail network, which offers the opportunity for travel by rail for employment, retail and leisure purposes.

5 Development Proposals

Development Proposals

- 5.1 The proposals would see the site developed for a residential use. This development would provide a total of 88 residential units, made up of a mix of dwelling types and bedroom numbers as follows:
- 35 No. 2 bed houses;
 - 49 No. 3 bed houses; and
 - 4 No. 4 bed houses.
- 5.2 The proposed site layout for the scheme is reproduced at **Appendix D**.

Site Access

- 5.3 As set out in the introduction, an access arrangement was approved for this site in April 2023 as part of an access only application. A copy of the approved drawing for this access is included at Appendix A. This shows the provision of a priority junction site access arrangement with a central island on the access itself and on Prescott Park Way in order to prevent the right turn movement out of the access. All other movements would be permitted.
- 5.4 In relation to the detail of this access, the proposed arrangement includes:
- A 3.6 to 5.8 metre wide left turn only egress lane from the site. This egress lane joins Prescott Park Way via a 10 metre radius and is separated from the entry lane by a circa 8.5 metre wide central island. To prevent the right turn movement out of the access, the drawing then shows the splitter island on the Prescott Park Way arm of the Prescott Park Way / Carr Lane / Cables Way roundabout being extended to a point circa 4 metres past this island on the access;
 - To accommodate this extended island, the Prescott Park Way kerbline is shown to be re-aligned along the site frontage before tying into the roundabout entry to the northwest and the existing Prescott Park Way to the east;
 - Entering the site, the access includes the provision of a 6 metre wide entry lane, which joins Prescott Park Way via a 4 metre radius.
- 5.5 The proposed site layout at Appendix D utilises this approved access arrangement and replicates it in its approved form. As a result and given that that the access was designed to serve a residential use as is being proposed now, it must be the case that the proposed access is acceptable in terms location, geometry and visibility provision.

Internal Site Layout

General

- 5.6 Within the site and as shown on the proposed site layout at **Appendix D**, once past the approved site access the main site access road would turn through circa 45 degrees before being joined on its western side by a circa 65 metre long cul-de-sac access road. From this junction, the main site access road would head south for a distance of approximately 45 metres, where it would then turn again through circa 40 degrees before being joined on its northwestern side by a circa 45 metre long cul-de-sac access road. From here, the main access road would continue west for a distance of circa 70 metres where it would terminate at a cul-de-sac arrangement.
- 5.7 All of the above access roads would be 5.5 metres in width and include 2 metre wide footways to both sides.
- 5.8 At various locations within the site, the access roads would be joined by private drives serving up to 4 dwellings. The accesses to these private drives would take the form of dropped crossing arrangements.

Swept path analysis

- 5.9 The scheme has been tracked using an 11.2m long refuse vehicle, the parameters for which are the same as those agreed with KC for the access only application. **Figure 5.1** shows this vehicle can negotiate the street within the scheme, whilst **Figures 5.2 and 5.3** show it can manoeuvre within the turning head areas.

Pedestrian and Cycle Provision

Pedestrian provision

- 5.10 As set out above, the site access would include 2 metre wide footways to both sides and link the site to the surrounding pedestrian network off Prescott Park Way. These footways would continue throughout the site on both sides of the highway network referred to above.
- 5.11 As set out in Section 3, Public Footpath PR/1/2 runs along the southeastern boundary of the site and within the site. This footpath commences at the southwestern corner of the site adjacent to the M57, runs northeast along the site boundary and then heads northwest along Prescott Parkway and on to Carr Lane.
- 5.12 As part of the scheme and as shown on the site layout at Appendix D, it is proposed to divert this Public Footpath. Under this diversion, the footpath would run from the southwest corner of the site (where it could join Prescott Park to the south) and head north / northeast around the northwestern perimeter of the site before linking to the existing footway on the south side of Carr Lane at the northern points of the site. A link would also be provided along the western site boundary through to Carr Lane woodland.
- 5.13 With these provisions in place, residents of the development travelling on foot could access the local pedestrian network.

Cycle provision

- 5.14 With regard to cycle provision, the internal site layout is considered to be conducive to cycle use.

Parking Provision

Car parking

- 5.15 KC's parking standards are set out in their New Residential Development Supplementary Planning Document (dated September 2018). This document states that:
- "The amount of parking to be provided will depend on the size and location of the dwellings. The table below shows the Council's maximum parking standards for new residential developments....."*
- 5.16 It then goes on to state that:
- "In circumstances where reduced parking levels are proposed, appropriate justification will be required".*
- 5.17 With regard to the table referred to above and in relation to the proposed site, the maximum standards are:
- 2 and 3 bedroom dwelling – 2 spaces;
 - 4+ bedroom dwelling – 3 spaces
- 5.18 For the 2 and 3 bedroom dwellings, the proposed scheme includes the referred to 2 spaces per dwelling whilst, for the 4 bedroom dwellings, the proposed scheme includes the referred to 3 spaces per dwelling.
- 5.19 Based on the above, the proposed level of car parking provision accords with KC's requirements and provides what is considered an appropriate level of provision for the proposed dwelling types.

Cycle parking

- 5.20 KC's cycle parking standards are set out in their Ensuring a Choice of Travel Supplementary Planning Document (dated September 2010). This document states that one cycle parking space is required per dwelling but that *"Cycle parking need not be provided if garages are available"*.
- 5.21 None of the dwellings will include a garage. However, all dwellings would include sheds in the rear gardens where future residents could secure park a cycle.

6 Traffic Generation and Assignment

General

- 6.1 As set out previously, the proposals would see the site developed for a residential use made up of a mix of houses.
- 6.2 As part of the now approved access only application, work was submitted to KC highways relating to the traffic generation and traffic assignment associated with an up to 74 dwelling development on the proposed site. The below therefore refers to this work and updates it to refer to the now proposed 88 dwelling scheme.

Traffic Generation

- 6.3 In order to determine a trip generation for the allocation site and as part of the access only application, the TRICS database was interrogated for the sub land use of 'Houses Privately Owned'. The trip rates derived from this interrogation are reproduced in Table 6.1 below.

Table 6.1: Access Only Application Trip Rates

	Weekday Morning Peak			Weekday Evening Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Trip Rate (per dwelling)	0.140	0.408	0.548	0.357	0.154	0.511

- 6.4 Following on from the above and based on the proposed development mix, the TRICS database has again been interrogated for the sub land use of 'Houses Privately Owned'. To achieve a broad dataset, sites have been chosen based on a 50 to 135 dwelling range, whilst sites from London and Ireland have been removed. Sites with particularly low trip rates, which include a large number of bungalows or flats or have a large proportion of 4 bedroom plus dwellings have also been removed. Multi modal sites have also been utilised.
- 6.5 Based on the above methodology, alternative trip rates for the proposed site are shown in Table 6.2 below. The TRICS outputs are included at **Appendix E**.
- 6.6 Note that, for both peak hours, the below numbers (and those in Table 6.1) relate to the typical 8:00 to 9:00 and 17:00 – 18:00 peak hours and not the observed 7:45 to 8:45 and 16:45 to 17:45 peak hours. The application of these generations to observed peak hour flows will therefore result in a robust assessment.

Table 6.2: Alternative Trip Rates

	Weekday Morning Peak			Weekday Evening Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Trip Rate (per dwelling)	0.187	0.370	0.557	0.367	0.162	0.529

- 6.7 As can be seen from the above, the alternative two way trip rates are marginally higher during both peaks. These alternative trip rates have therefore been used.
- 6.8 Based on these alternative trip rates above and the now proposed 88 dwellings, Table 6.3 below shows the resultant traffic generation for the proposed development.

Table 6.3: Traffic Generation (88 Dwellings)

	Weekday Morning Peak			Weekday Evening Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Traffic Generation	16	33	49	32	14	46

Trip Distribution

- 6.9 The trip distribution used as part of the access only application was based on the 2011 census journey to work (JTW) information using journeys to work made by car drivers.

- 6.10 MSOA Knowsley 007 was used in the analysis, which was considered to provide the best approximation of the JTW pattern from the site. Based on this MSOA, work destinations were used to calculate the work based trip distributions and assignment for residential traffic leaving the site to travel to work.
- 6.11 Having determined the destination of car driver based journeys, these journeys were then manually assigned to the study network based on the following routes / destinations:
- Route 1: Southeast along Prescot Park Way;
 - Route 2: West along Carr Lane;
 - Route 3: East along Cables Way.
- 6.12 The destination and origin areas associated with the above routes are shown in the information included at **Appendix F**, which provides the raw ward data used to derive the distribution.
- 6.13 Based on the methodology detailed above, Table 6.4 below shows the percentage of development related traffic assigned to each of the three routes.

Table 6.4: Trip Distribution and Assignment

Route	Origin / Destination	Percentage
1	Southeast along Prescot Park Way	20%
2	West along Carr Lane	58%
3	East along Cables Way	22%
Total		100%

- 6.14 The methodology described above, together with the resultant distribution and assignment, is still considered appropriate to assign traffic associated with the proposed development.

Proposed development Traffic Flows

- 6.15 Based on the above, **Figure 6.1** shows the proposed development traffic assignment at the proposed site access and the Prescot Park Way / Carr Lane / Cables Way roundabout, whilst **Figure 6.2** shows the proposed development traffic flows during the weekday morning and weekday evening peak hours.

7 Operational Assessments

General

- 7.1 As set out previously and given the traffic generations associated with the development as identified in Section 6, it is considered that the analysis of traffic impact can be limited to assessing the operation of the proposed site access of Prescott Park Way and the Prescott Park Way / Carr Lane / Cables Way roundabout to the northwest.
- 7.2 Details of the traffic flows used to undertake these assessments, together with the resultant model findings, are therefore set out in this section. With regard to the models used to carry out these operational assessments, these are based on the same Junctions 9 models used as part of the submission for the approved access only application.

Committed Development

- 7.3 As part of the access only application, KC indicated that a number of committed developments, together with the then planning application on land north of Cables Way, needed to be taken account of in assessment of the access. Following a review of these applications, they were considered as follows:
- Planning Application 12/00400/HYB: The Transport Assessment that supported the application assigned no traffic to Prescott Park Way or the Prescott Park Way / Carr Lane / Cables Way roundabout. As a result and given that background growth will be applied, and in a consistent approach to that taken for the planning application on land north of Cables Way, there was considered to be no requirement to specifically allow for this application in the assessment;
 - Planning Application 15/00022/OUT: other than one parcel of land, which accounts for around 11% of the scheme, the residential element of this application is now built and will therefore be included in the October 2021 traffic surveys. As a result and making a robust assumption that 15% of the residential element of the development and all the commercial use was still to be built, and using a combination of the Transport Assessment and Technical Note that supported the application, the traffic flows for the remainder of this application were derived to be as shown in **Figure 7.1**;
 - Planning Application 18/00062/HYB: The Transport Assessment that supported the application assigned no traffic to Prescott Park Way or the Prescott Park Way / Carr Lane / Cables Way roundabout. As a result and given that background growth will be applied, and in a consistent approach to that taken for the planning application on land north of Cables Way, there was considered to be no requirement to specifically allow for this application in the assessment;
 - Planning Application 19/00684/FUL: This site is located somewhat away from the proposed site, whilst the Transport Assessment Addendum that supported the application assigned no traffic to Manchester Road. It was therefore considered that this development traffic will not pass the proposed site and did not, therefore, need to be accounted for in the assessment;
 - Planning Application 20/00204/FUL: No weekday trip generation and assignment information was provided with this application. However, a Saturday TRICS output provided as part of a parking accumulation assessment was used to determine worst case weekday trip rates. Using these rates and assigning 35% along Cables Way, the traffic associated with this application was allowed for based on the traffic flows shown in **Figure 7.2**. This is considered robust;
 - Planning Application 20/00207/FUL: using indicative weekday traffic generations included within a note submitted for this application in response to KC comments, and assuming 50% of traffic travels to and from the west on Cables Way, the traffic generation associated with this application was assumed to be as shown in **Figure 7.3**;
 - Planning Application 20/00576/HYB: the weekday morning and evening peak traffic flows for this development were taken from the Transport Assessment that supported the application. These traffic flows are reproduced in **Figure 7.4**.
- 7.4 Following on from the above and through discussions regarding this application, KC has confirmed that there are no further committed developments to be taken into account.
- 7.5 Based on the above, **Figure 7.5** shows the total committed development traffic.

Traffic Growth

- 7.6 In addition to the above and to allow a further level of robustness, the observed traffic flows were growthed in the access only application to allow for some additional background traffic growth. These figures were growthed using TEMPRO 7.2, the geographical area of 'Knowsley 007', the 'all' parameter and a future year of 2032.
- 7.7 Adopting this approach again but using a future year of 2033 (10 years after application), Table 7.1 below details the growth factors to be applied to the 2021 observed traffic flows set out in Section 3 to derive a set of 2033 background traffic flows.

Table 7.1: TEMPRO Adjusted Growth Factors for 'Knowsley 007'

	Weekday Morning Peak	Weekday Evening Peak
2021 – 2033	1.1171	1.1106

- 7.8 Applying the above factors to the 2021 observed traffic flows, **Figure 7.6** shows the growthed background traffic flows.

Assessment Traffic Flows

- 7.9 Adding the committed development traffic flows shown in **Figure 7.5** to the 2033 growthed background traffic flows referred to above, **Figure 7.7** shows the 2033 'base' traffic flows.
- 7.10 Following on from the above and adding the proposed development traffic flows to the 2033 base traffic flows, **Figure 7.8** shows the 2033 base plus proposed development traffic flows.

Operational Assessments: Proposed Site Access

- 7.11 Based on the 2033 base plus proposed development traffic flows identified above and the model used in the access only application, Junctions 9 assessments have been carried out for the proposed site access. Table 7.2 below shows the results of these operational assessments, whilst the full Junction 9 outputs are included at **Appendix G** for information.

Table 7.2: Proposed Site Access: Junctions 9 Results

	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	RFC	Q	RFC	Q
Prescot Park Way (right turn)	0.028	0	0.056	0
Site Access (left turn)	0.052	0	0.021	0

RFC: Ratio of Flow to Capacity Q: Queue length in vehicles

- 7.12 As can be seen from the above table the Junctions 9 modelling indicates that the maximum RFC value at the proposed site access would be 0.052 during the weekday morning peak and 0.056 during the weekday evening peak. These levels of RFC are significantly below the traditional 0.850 design capacity. There would also be no queuing during either peak.
- 7.13 Based on these results it is suggested that there would be no operational issues associated with the proposals and that, although providing 14 more dwellings than the notional 74 dwellings referred to in the Local Plan allocation, the approved access arrangements would continue to be more than sufficient to safely serve the proposed development.

Operational Assessments: Prescot Park Way / Carr Lane / Cables Way

- 7.14 Based on the 2021 observed, 2033 base and 2033 base plus proposed development traffic flows identified above and the model used in the access only application, Junctions 9 assessments have been carried out for the Prescot Park Way / Carr Lane / Cables Way roundabout. Table 7.3 below shows the results of these operational assessments, whilst the full Junction 9 outputs are included at **Appendix H** for information.

Table 7.3: Prescott Park Way / Carr Lane / Cables Way: Junctions 9 Results

	2021 Observed		2033 Base		2033 Base Plus Proposed Dev	
	RFC	Q	RFC	Q	RFC	Q
Weekday Morning Peak						
Prescot Park Way	0.114	0	0.159	0	0.183	0
Carr Lane	0.253	0	0.316	1	0.325	1
Cables Way	0.141	0	0.185	0	0.189	0
Weekday Evening Peak						
Prescot Park Way	0.071	0	0.097	0	0.108	0
Carr Lane	0.39	1	0.404	1	0.420	1
Cables Way	0.269	0	0.344	1	0.353	1

RFC: Ratio of Flow to Capacity

Q: Queue length in vehicles

- 7.15 The results show that, even allowing for background traffic growth, committed development and the proposed development, the Prescott Park Way / Carr Lane / Cables Way roundabout would be operating well within capacity, with a maximum RFC value of 0.325 during the weekday morning peak and 0.420 during the weekday evening peak.
- 7.16 Based on these results it is suggested that there would be no operational issues arising from the proposals and that the existing Prescott Park Way / Carr Lane / Cables Way roundabout arrangement is more than sufficient to accommodate the proposed development.

Wider Traffic Impact

- 7.17 Away from the proposed site access and Prescott Park Way / Carr Lane / Cables Way roundabout, **Figure 6.2** shows that the proposed development would increase traffic flows along Prescott Park Way by a total of 10 vehicles during the morning peak and 9 vehicles during the evening peak and along Cables Way by a total of 11 vehicles during the weekday morning peak and a total of 10 vehicles during the weekday evening peak. These increases, which are below the 30 vehicle threshold at which traffic assessments are typically required, equate to around one additional vehicle every six minutes. These levels of increases would be barely noticeable.
- 7.18 To the west, **Figure 6.2** shows that the proposed development would increase traffic flows along Carr Lane by a total of 28 vehicles during the weekday morning peak and by 27 vehicles during the weekday evening peak. These increases, which are below the 30 vehicle threshold at which traffic assessments are typically required, equate to around one additional vehicle every two minutes. These levels of increases would have minimal impact and could be readily accommodated in the highway network to the west.
- 7.19 In light of the above, it is considered that the proposed development would have no notable impact on the wider highway network and that no operational assessments are required at additional off-site locations.

Summary

- 7.20 Based on the findings presented in this section of the report, it is concluded that there would be no operational issues associated with the proposals and that, although providing 14 more dwellings than the notional 74 dwellings referred to in the Local Plan allocation, the already approved access arrangement for the site, together with the existing Prescott Park Way / Carr Lane / Cables Way roundabout arrangement, would be more than sufficient to safely serve the proposed development.
- 7.21 With regard to the wider highway network, it is concluded that increases in traffic as a result of the proposals would have no notable impact on the wider highway network and that no operational assessments are required at additional off-site locations.
- 7.22 In light of the above, no highway mitigation is required in association with the proposed development.

8 Summary, Conclusions and Recommendations

Summary and Conclusions

8.1 Based on the findings of this report it is concluded that:

Planning history

- The proposed site was promoted through the Knowsley Local Plan process, with the site now being allocated as a Sustainable Urban Extension (Site Ref: KGBS10) in the adopted Local Plan Core Strategy dated January 2016 with a notional capacity of 74 dwellings;
- Following the allocation of the site, an access only application (planning application reference 22/00376/FUL) was submitted by United Utilities in June 2022 and was approved in April 2023. This application sought permission for the construction of a vehicular access from Prescot Park Way which was of a suitable scale and arrangement to serve the up to 74 notional dwellings allocated for the site;
- Following on from the allocation of the site and the approval of the access only application, the proposed scheme looks to increase the number of dwellings on the site from the notional 74 dwellings referred to in the Local Plan to 88 dwellings. Access to the scheme would be provided via the approved access arrangement from Prescot Park Way.

Accessibility by the Sustainable Modes

- Pedestrian and cycle infrastructure in the vicinity of the site is considered to be of a good quality, providing a suitable and safe pedestrian and cyclist environment. This pedestrian and cycle infrastructure also provides access to services, facilities and the public transport network that are within walking and cycling distance of the site;
- Taking an appropriate account of the proximity of the site to the local shops and Prescot town centre, it is concluded that the site meets the minimum standard set out in the Ensuring Choice of Travel SPD in relation to accessibility;
- The site is well placed in terms of pedestrian connectivity, with walking representing a very realistic alternative to the car for future residents undertaking educational and shopping trips, some recreational trips and potentially employment trips. Furthermore, the site is well placed for future residents to connect to the local bus and rail networks;
- The site is well placed for future residents to travel by bicycle for educational, employment, retail and leisure trips. All of Prescot and Huyton are within the 5km distance, as are Whiston and Rainhill. A 7 to 8km ride would also take in St Helens and, although outside the 5km catchment, these distances would be accessible to some future residents, particularly given the growing popularity of e-bikes. Future residents would also be able to cycle to Prescot, Whiston and Huyton railway stations to join the local rail network;
- With regard to accessibility by public transport, the site is well placed for future residents to travel by bus and rail for educational, employment, retail and leisure purposes.

Site Access and on site Pedestrian, Cycle & Parking Provision

- The proposed site layout utilises this approved access arrangement and replicates it in its approved form. As a result and given that the access was designed to serve a residential use as is being proposed now, it must be the case that the proposed access is acceptable in terms location, geometry and visibility provision. Furthermore, assessments show that, although the proposals are for 14 dwelling more than the notional 74 dwellings referred to in the Local Plan allocation for the site, there would be no operational issues associated with the proposed site layout and that the access arrangements proposed would continue to be more than sufficient to safely serve the proposed development;
- The internal highway arrangement is appropriate to suitably serve the proposed development, includes suitable footway provision and is considered conducive to cycle use;

- Public Footpath PR/1/2 runs along the southeastern boundary of the site and within the site. This footpath commences at the southwestern corner of the site adjacent to the M57, runs northeast along the site boundary and then heads northwest along Prescott Parkway and on to Carr Lane. Under the proposals, it is proposed to divert this Public Footpath to run from the southwest corner of the site (where it could join Prescott Park to the south) and north / northeast around the northwestern perimeter of the site before linking to the existing footway on the south side of Carr Lane at the northern points of the site. A link would also be provided along the western site boundary through to Carr Lane woodland;
- The proposed car parking provision within the site accords with KC's standards and provides what is considered an appropriate level of provision for the proposed development;
- In terms of cycle parking, none of the dwellings will include a garage. However, all dwellings would include sheds in the rear gardens where future residents could secure park a cycle;

Traffic Impact

- There is no notable highway safety issue in the immediate vicinity of the site. As a result, it is considered that there are no existing highway safety issues in the immediate vicinity of the site upon which the proposed development would impact;
- Operational assessments show that, despite the proposals being 14 dwellings more than the notional 74 dwellings referred to in the Local Plan allocation for the site, the existing Prescott Park Way / Carr Lane / Cables Way roundabout arrangement is more than sufficient to accommodate the proposed development;
- With regard to the wider highway network, it is concluded that increases in traffic as a result of the proposals would have no notable impact on the wider highway network and that no operational assessments are required at additional off-site locations;
- In light of the above, no highway mitigation is required in association with the proposed development.

Recommendations

- 8.2 In light of the above it is the recommendation of CBO Transport that there are no traffic or transportation grounds on which to refuse the application for the proposed residential development.



Figures

Figure 1.1: Site Location

Figure 3.1: 2021 Observed Traffic Flows

Figure 4.1: Local Linkages

Figure 4.2: Walking Catchment and Site Accessibility

Figure 4.3: 5km Cycle Catchment

Figure 5.1: Swept Path Analysis: Large Refuse Vehicle Travelling Through the Site

Figure 5.2: Swept Path Analysis: Large Refuse Vehicle Turning in Western Turning Head

Figure 5.3: Swept Path Analysis: Large Refuse Vehicle Turning in Northern Turning Head

Figure 6.1: Proposed Development Traffic Assignment

Figure 6.2: Proposed Development Traffic Flows

Figure 7.1: Committed Development Traffic Flows: Hall Lane, Prescott (15/00022/OUT)

Figure 7.2: Committed Development Traffic Flows: Manchester Road, Prescott (20/00204/FUL)

Figure 7.3: Committed Development Traffic Flows: Sinclair Way, Prescott (20/00207/FUL)

Figure 7.4: Allowed for Development Traffic Flows: Land North of Cables Way (20/00576/HYB)

Figure 7.5: Total Committed Development Traffic Flows

Figure 7.6: 2033 Growthed Background Traffic Flows

Figure 7.7: 2033 Base Traffic Flows

Figure 7.8: 2033 Base Plus Proposed Development Traffic Flows

Figure 1.1 Site Location

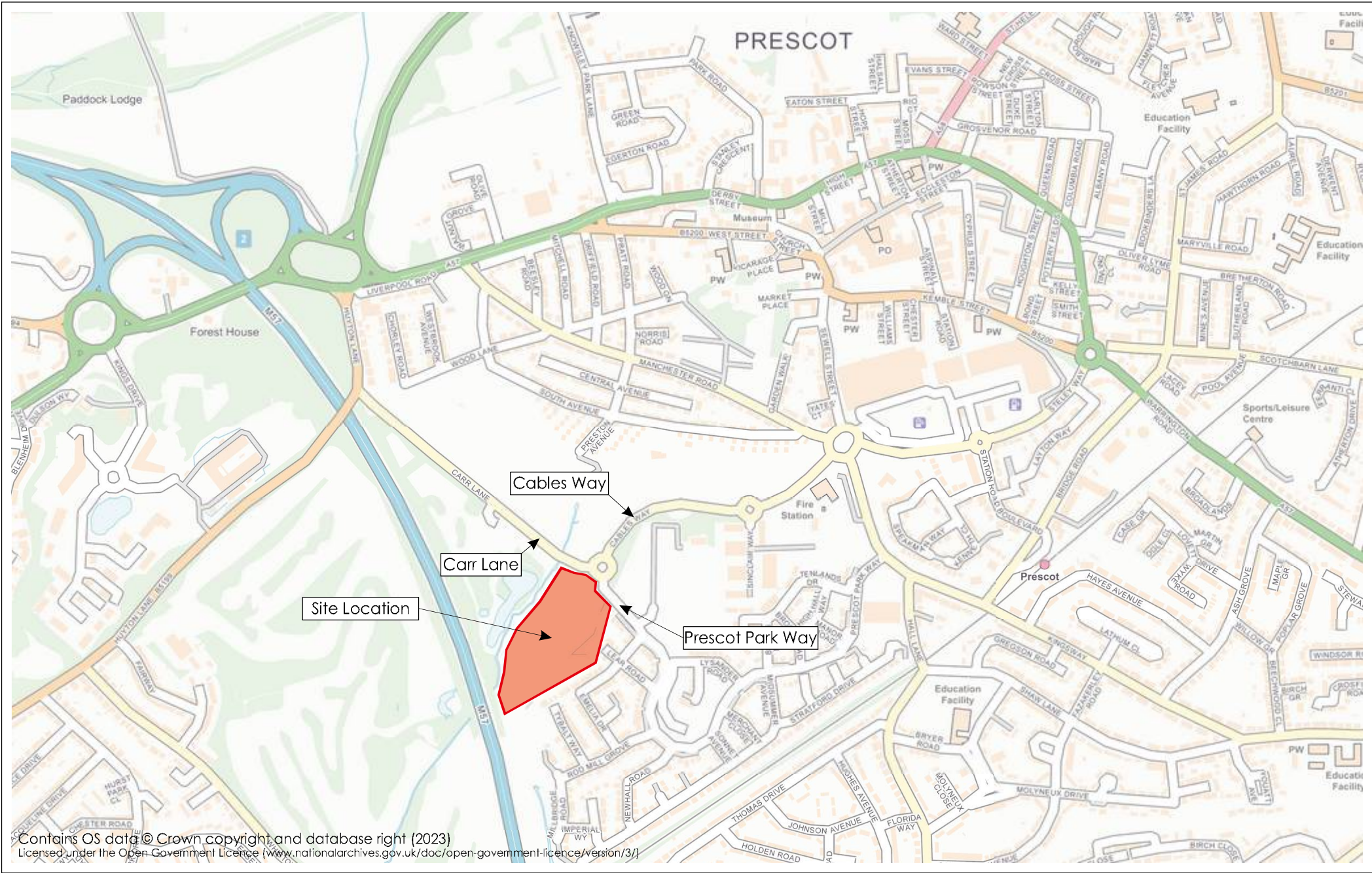


Figure 3.1 2021 Observed Traffic Flows

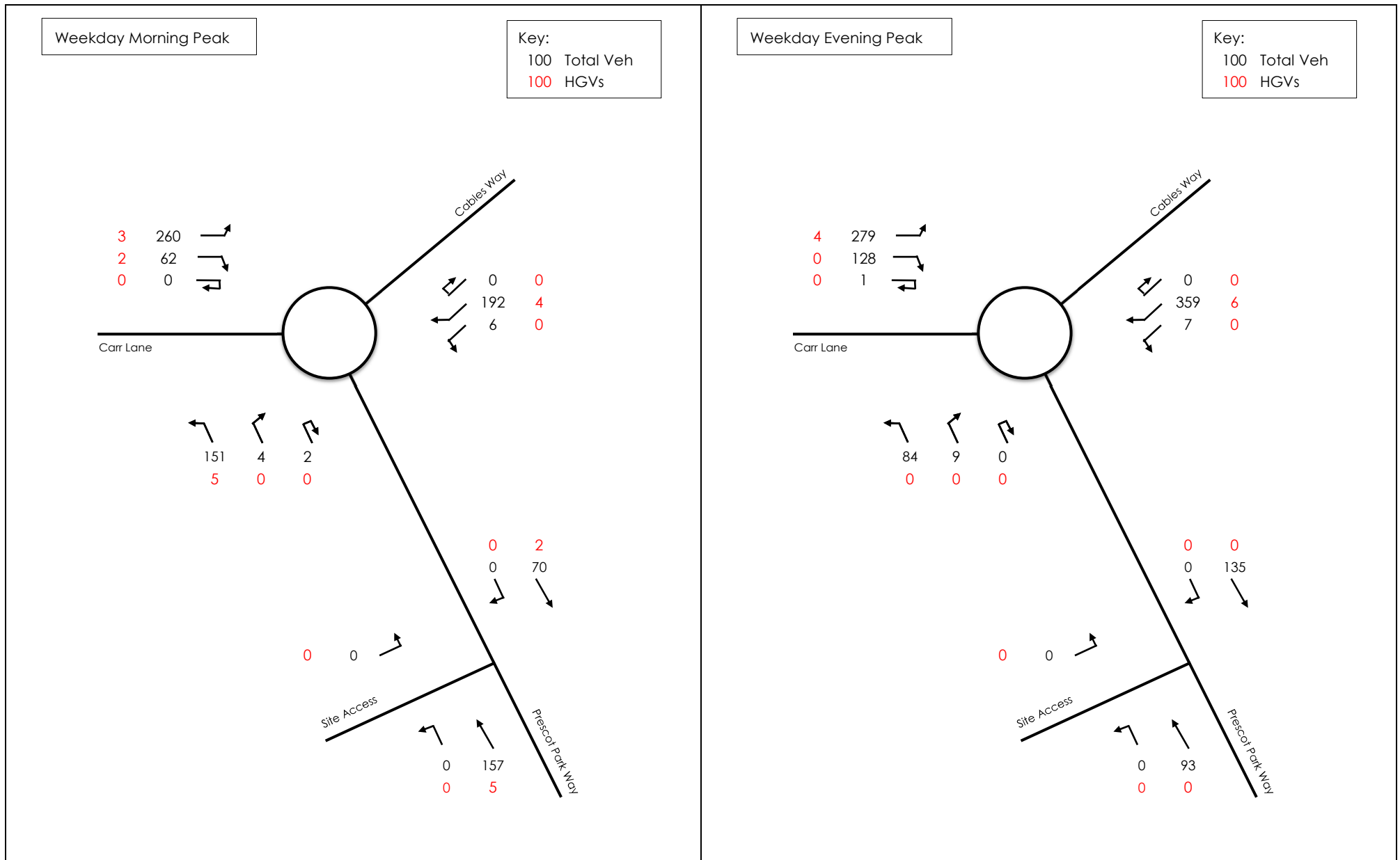


Figure 4.1 Local Linkages

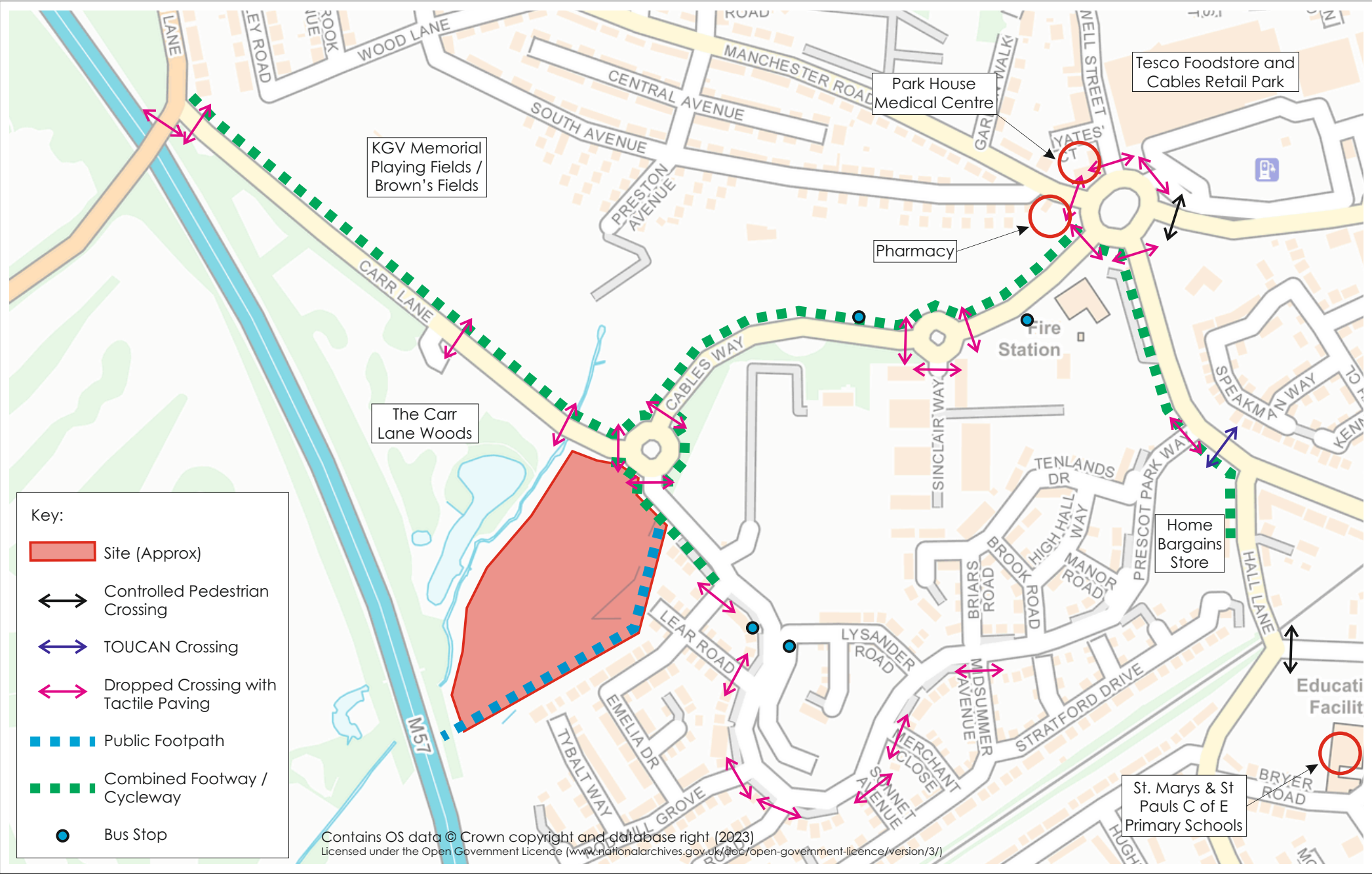


Figure 4.2 Walking Catchment & Site Accessibility

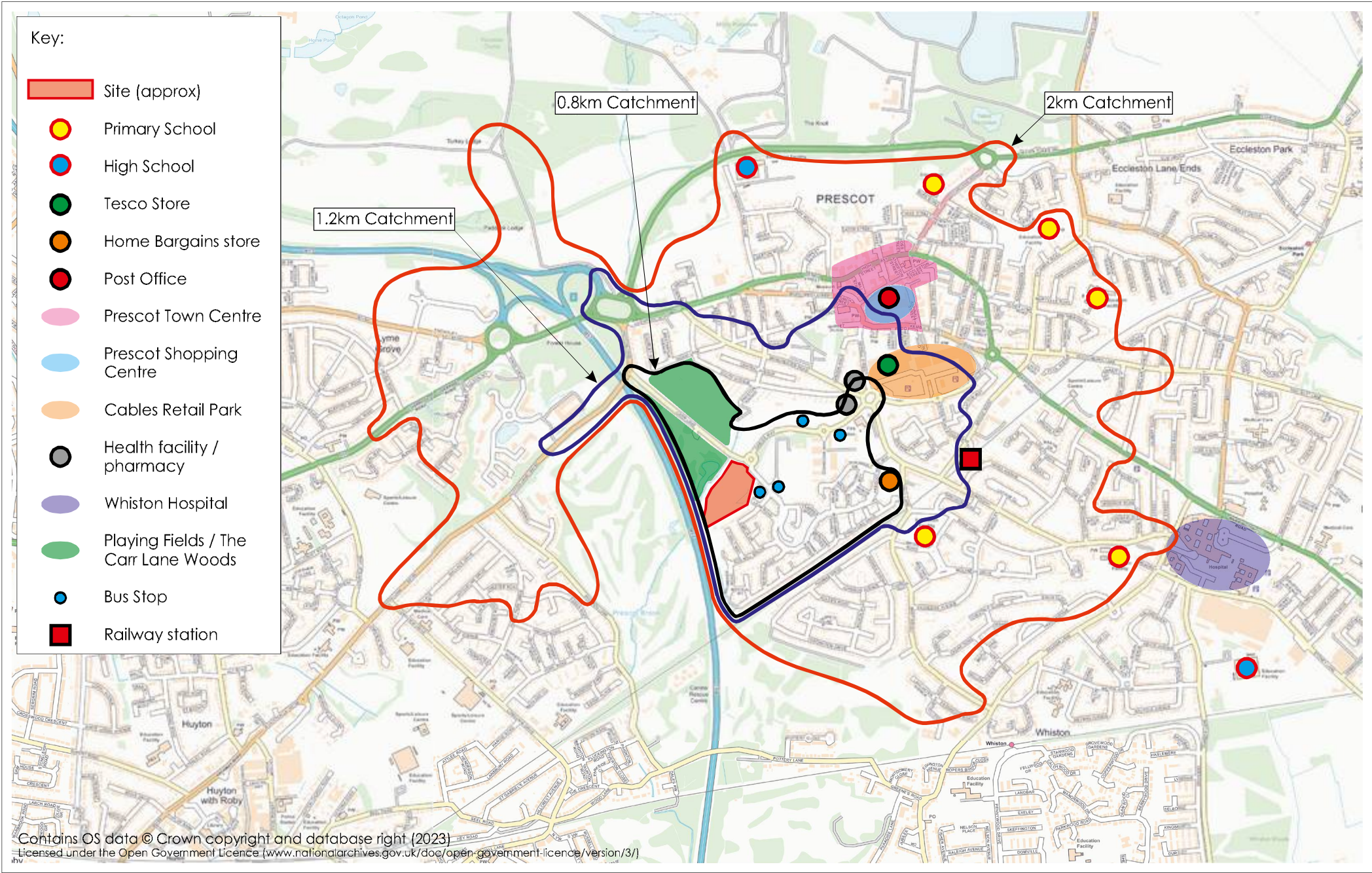


Figure 4.3 5km Cycle Catchment

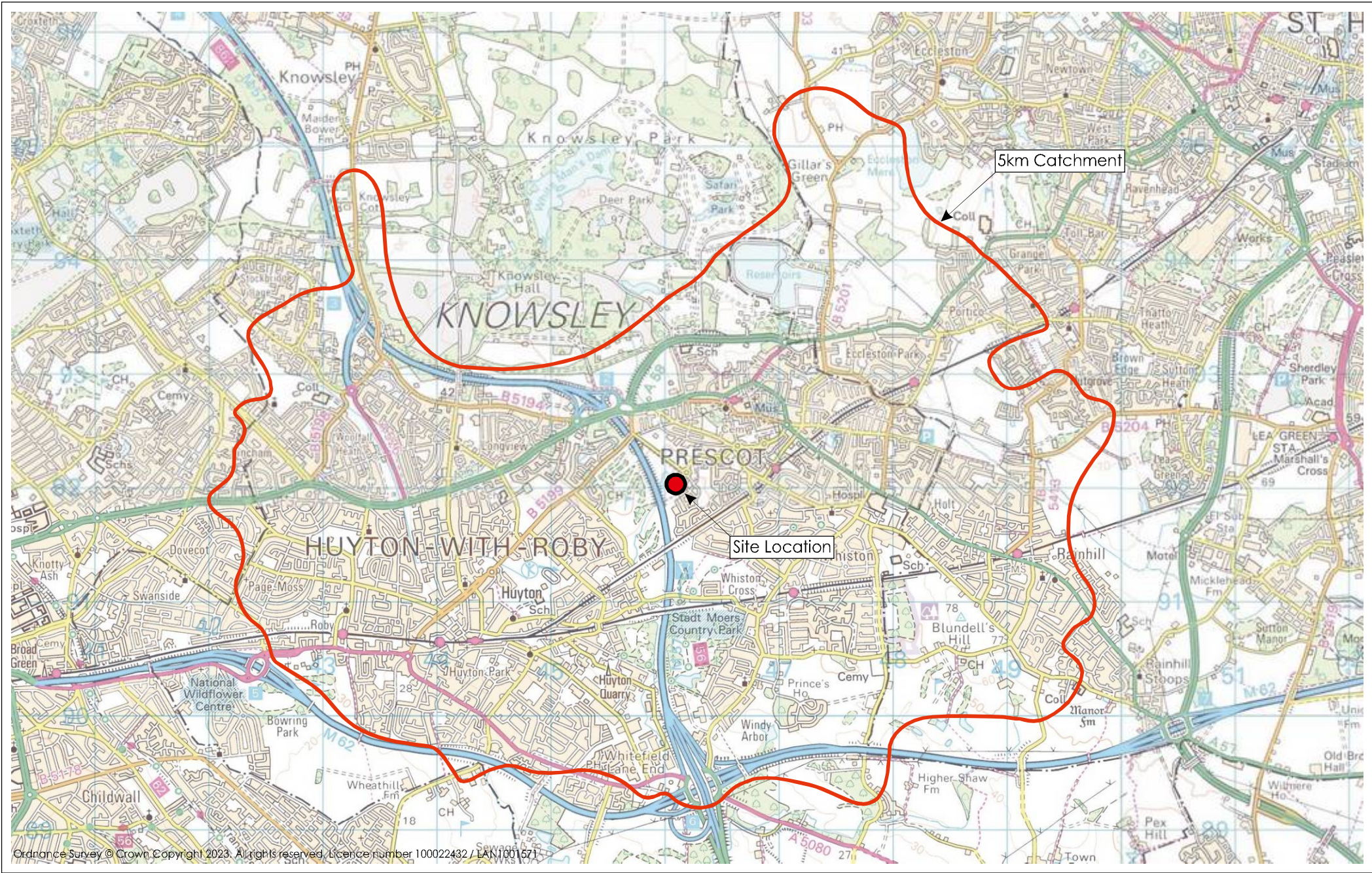


Figure 5.1 Swept Path Analysis: Large Refuse Vehicle Travelling Through Site
(1:500 @ A3)



Figure 5.2 Swept Path Analysis: Large Refuse Vehicle Turning in Western Turning Head (1:250 @ A3)



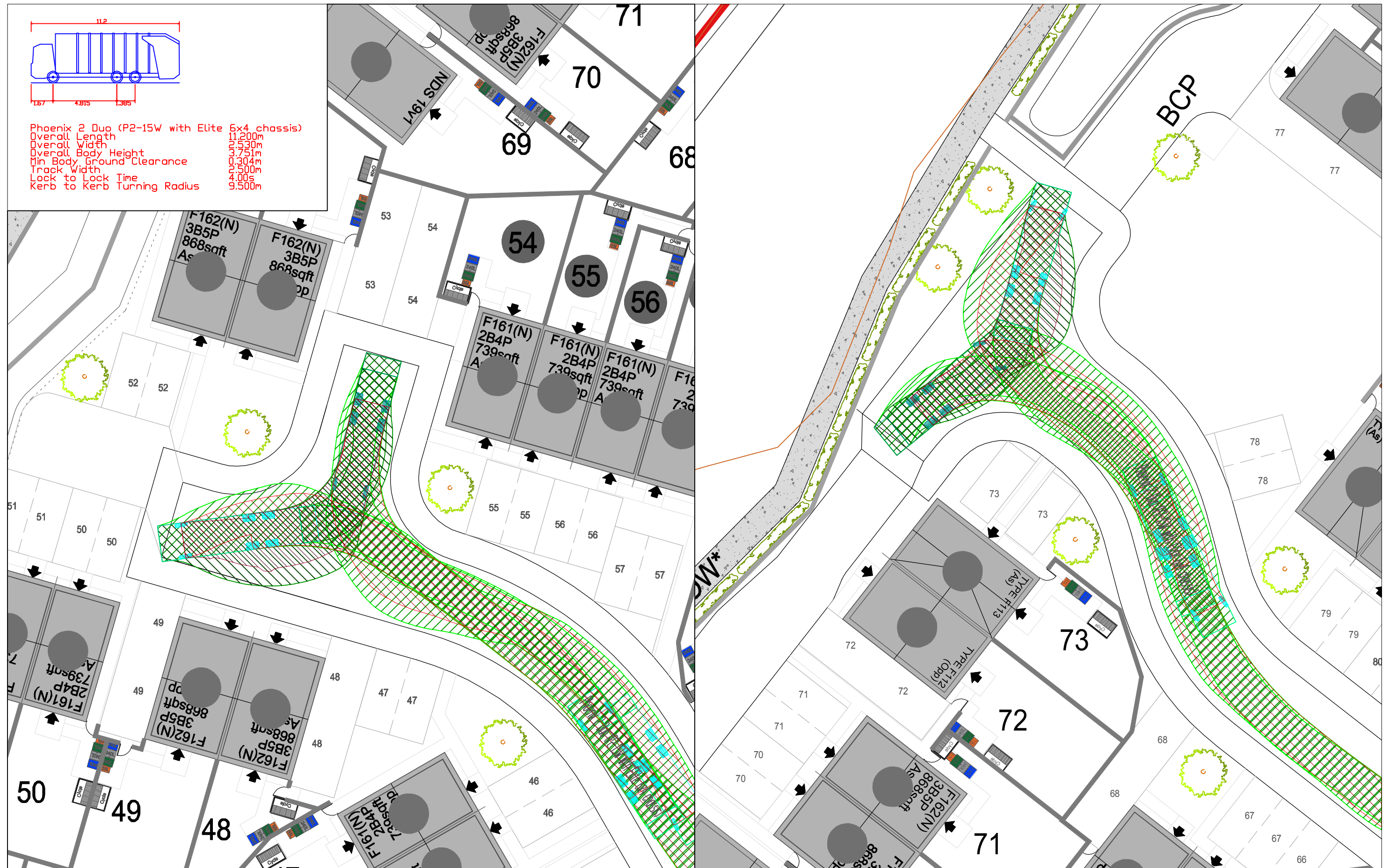


Figure 6.1 Proposed Development Traffic Assignment

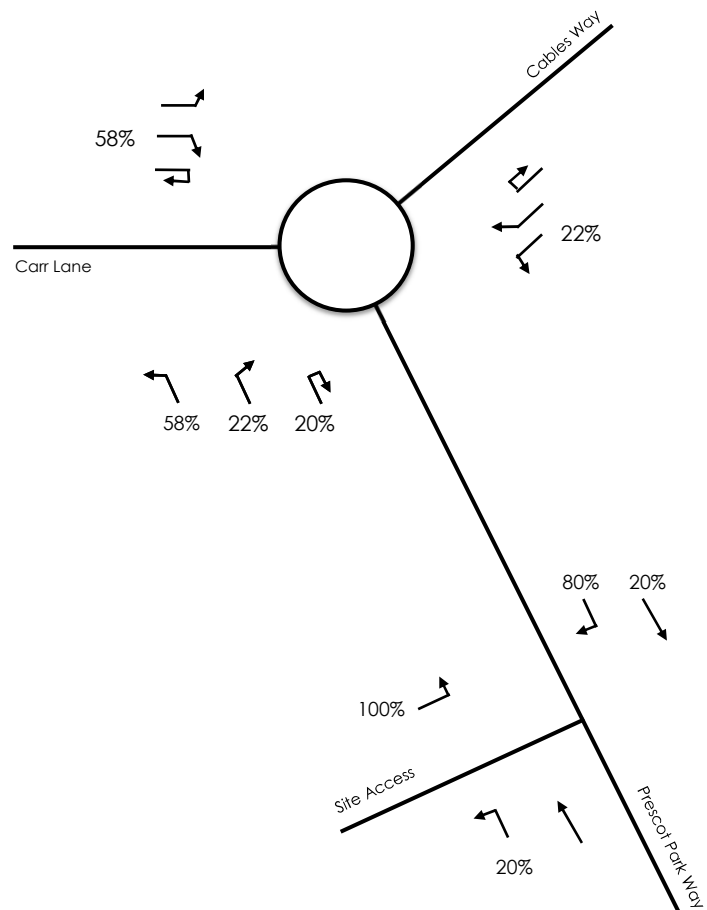


Figure 6.2 Proposed Development Traffic Flows

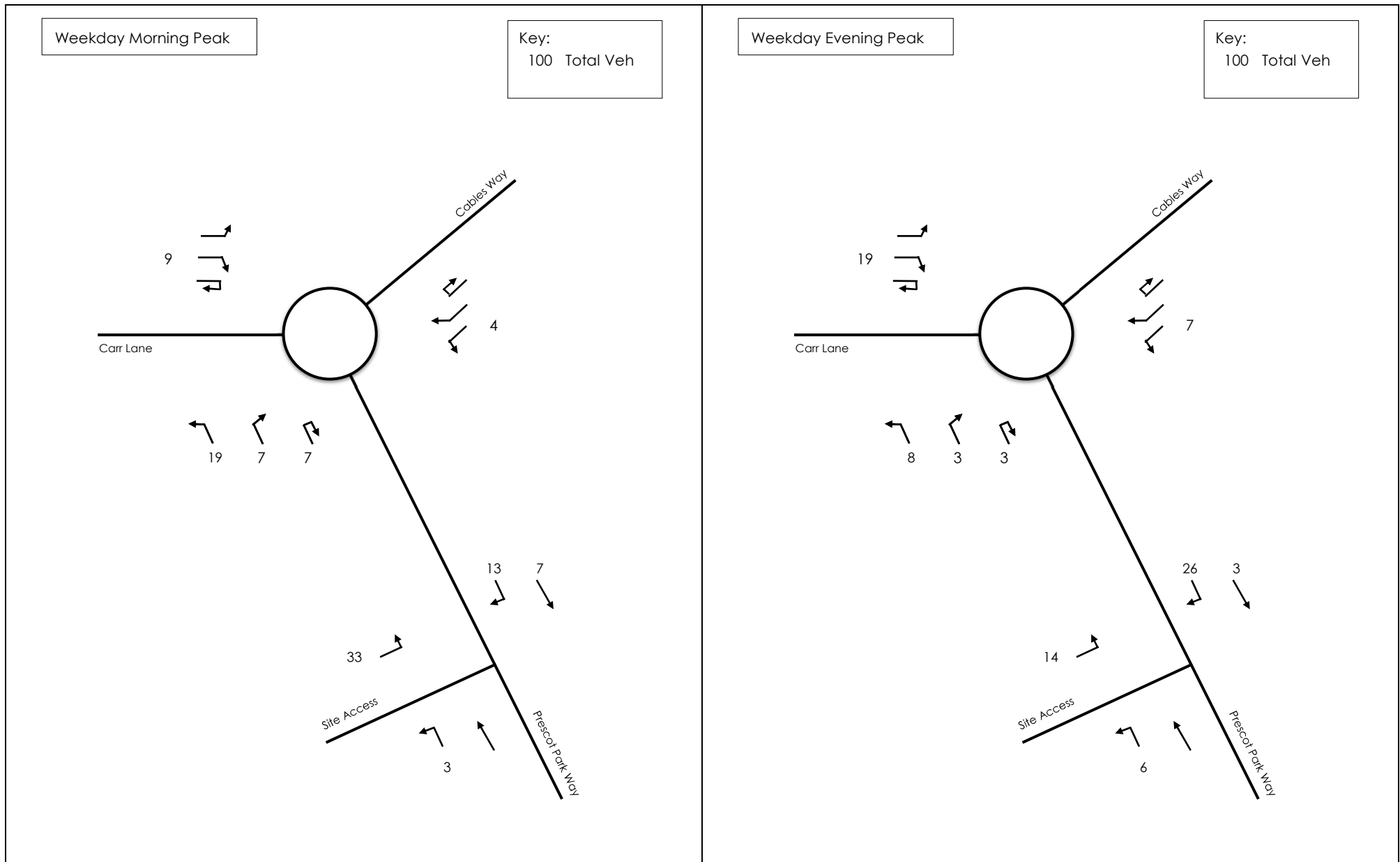


Figure 7.1 Committed Development Traffic Flows: Hall Lane, Prescott (15/00022/OUT)

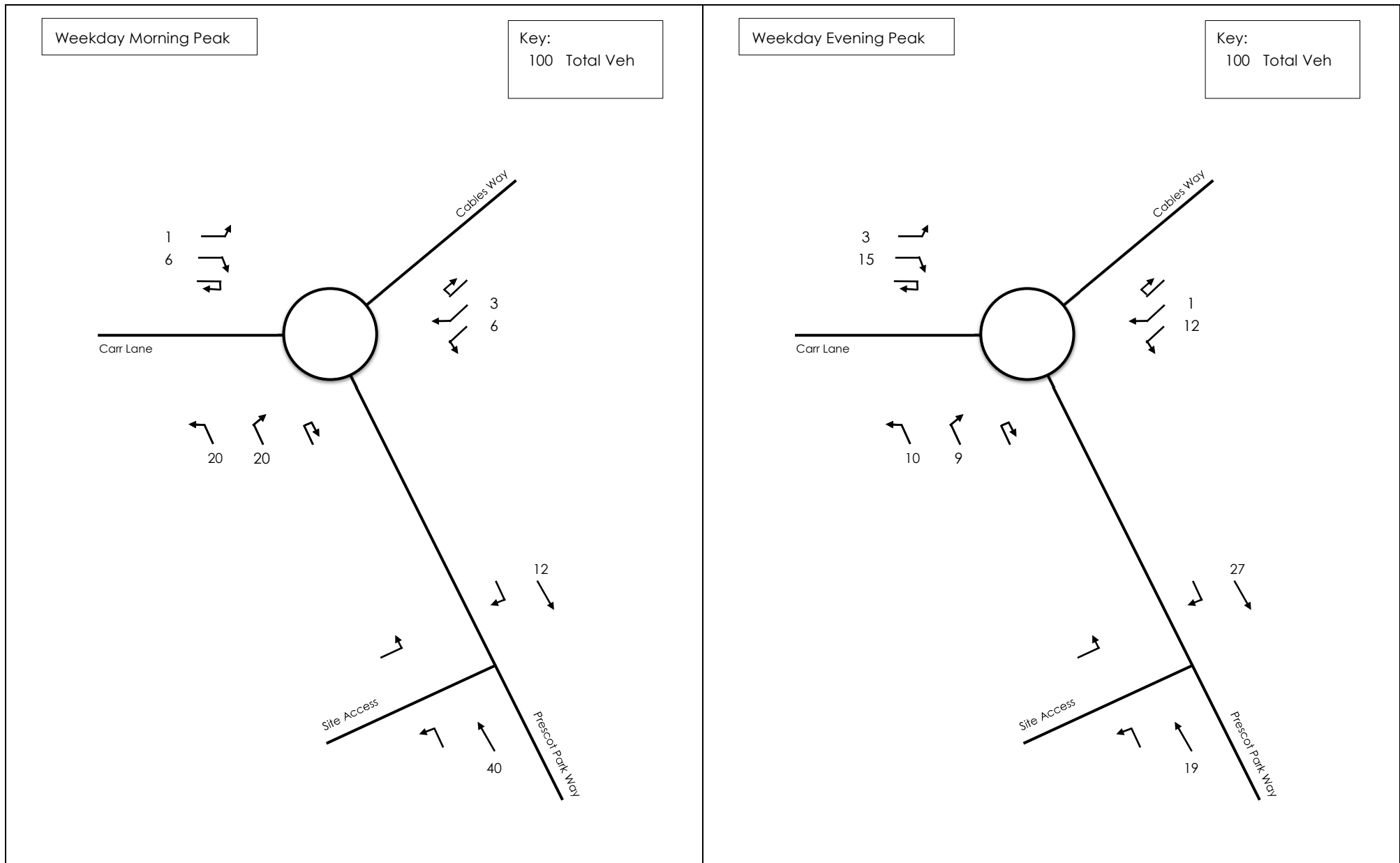


Figure 7.2 Committed Development Traffic Flows: Manchester Road, Prescott (20/00204/FUL)

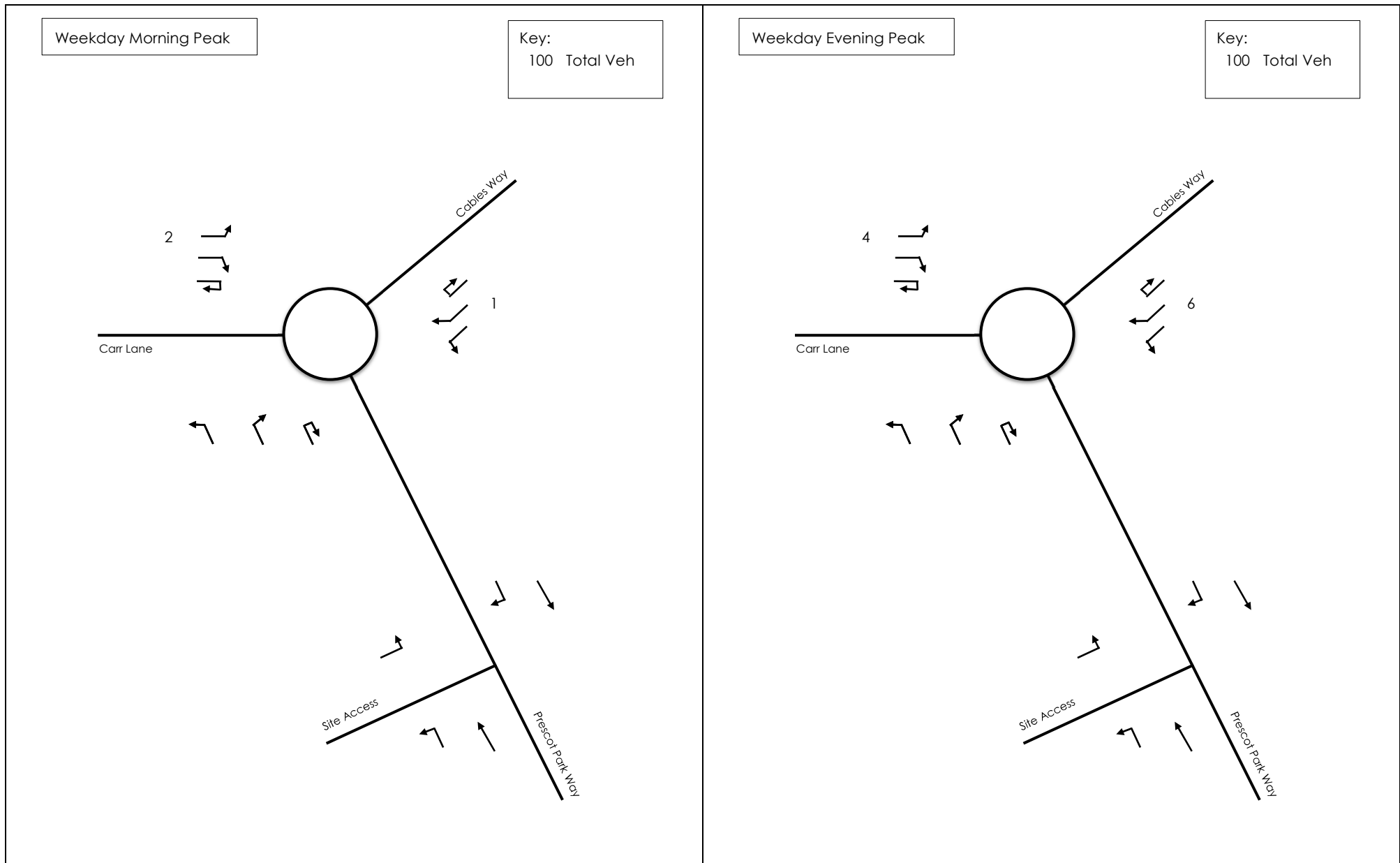


Figure 7.3 Committed Development Traffic Flows: Sinclair Way, Prescott (20/00207/FUL)

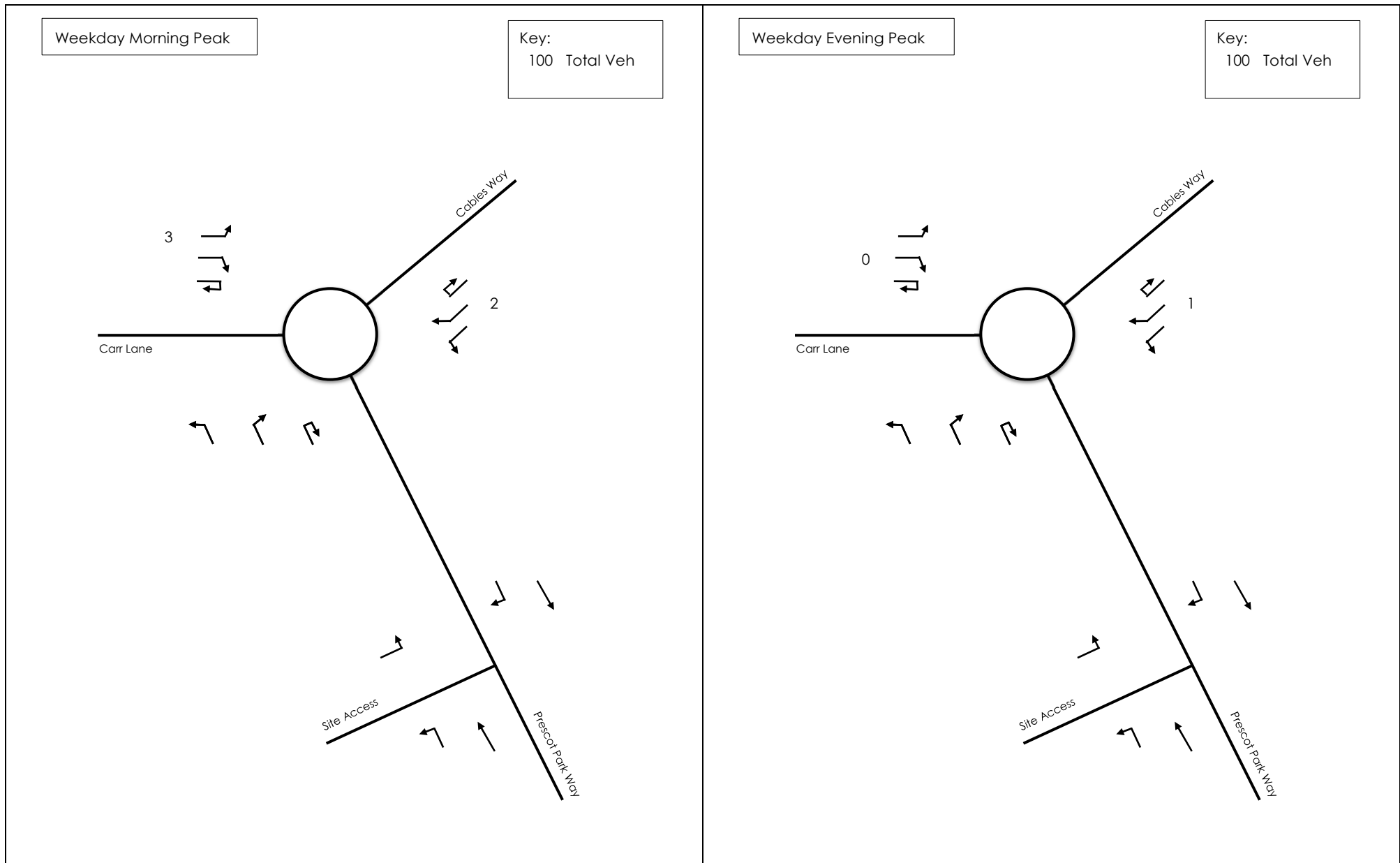


Figure 7.4 Allowed for Development Traffic Flows: Land North of Cables Way (20/00576/HYB)

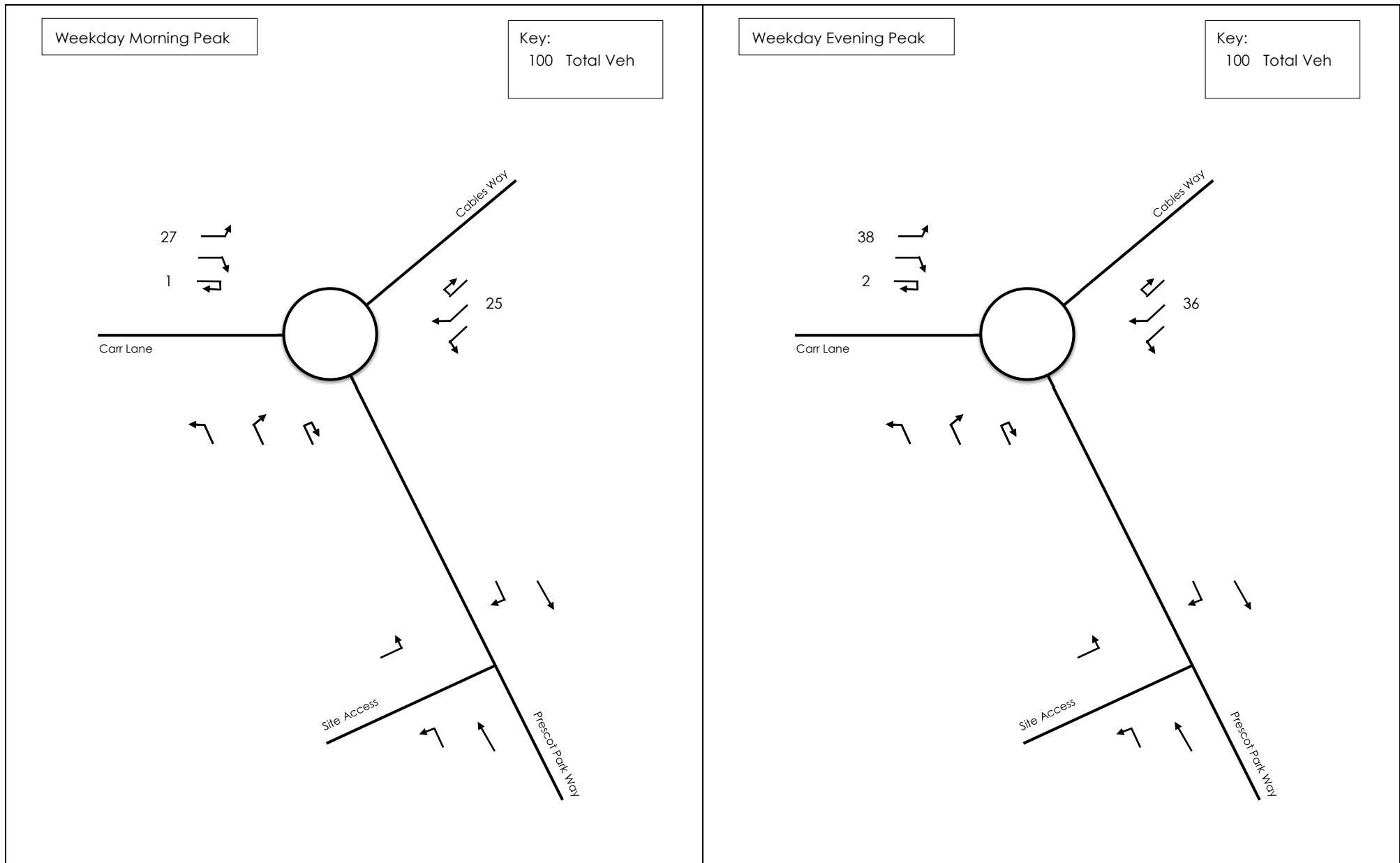


Figure 7.5 Total Committed Development Traffic Flows

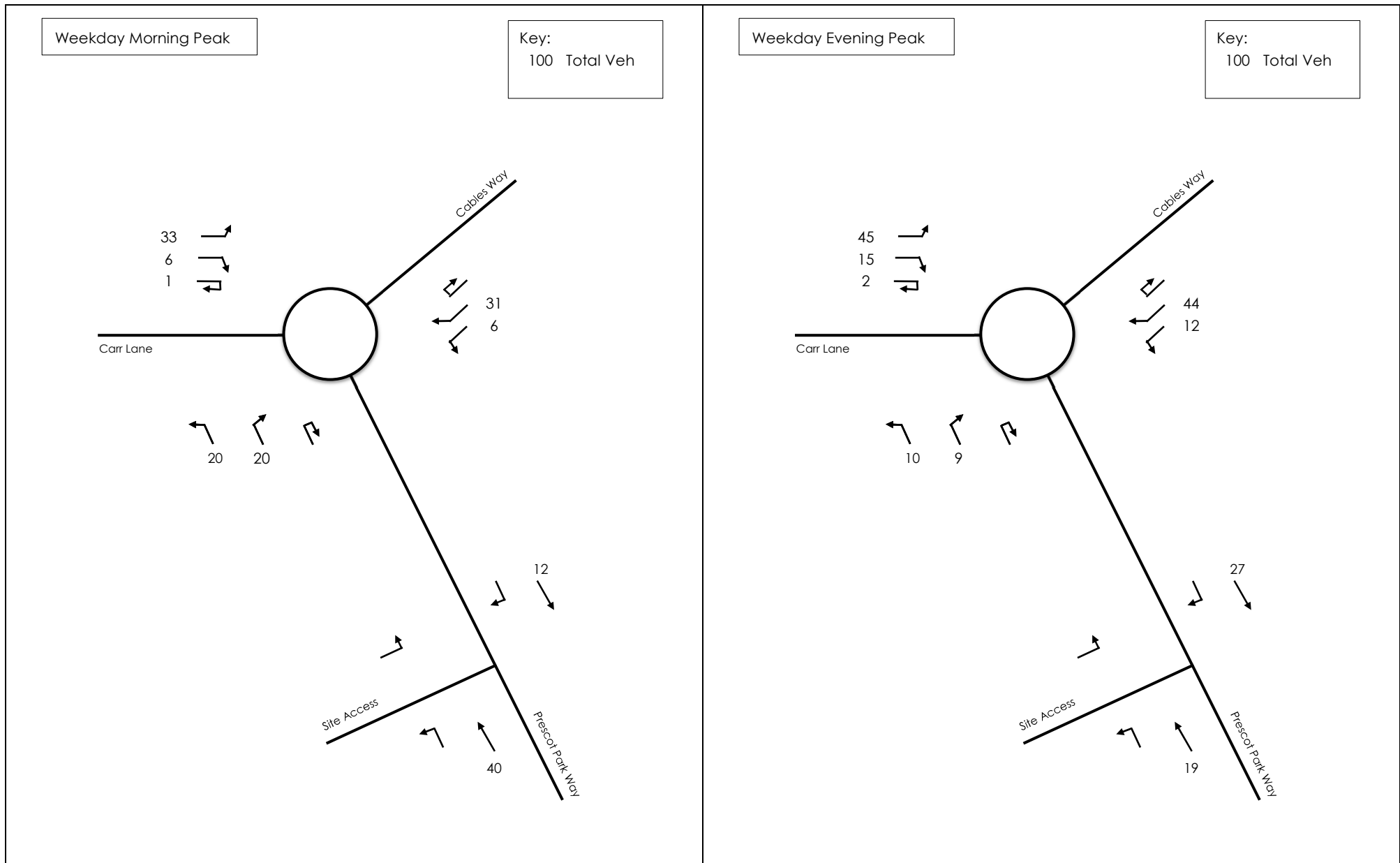


Figure 7.6 2033 Growth Background Traffic Flows

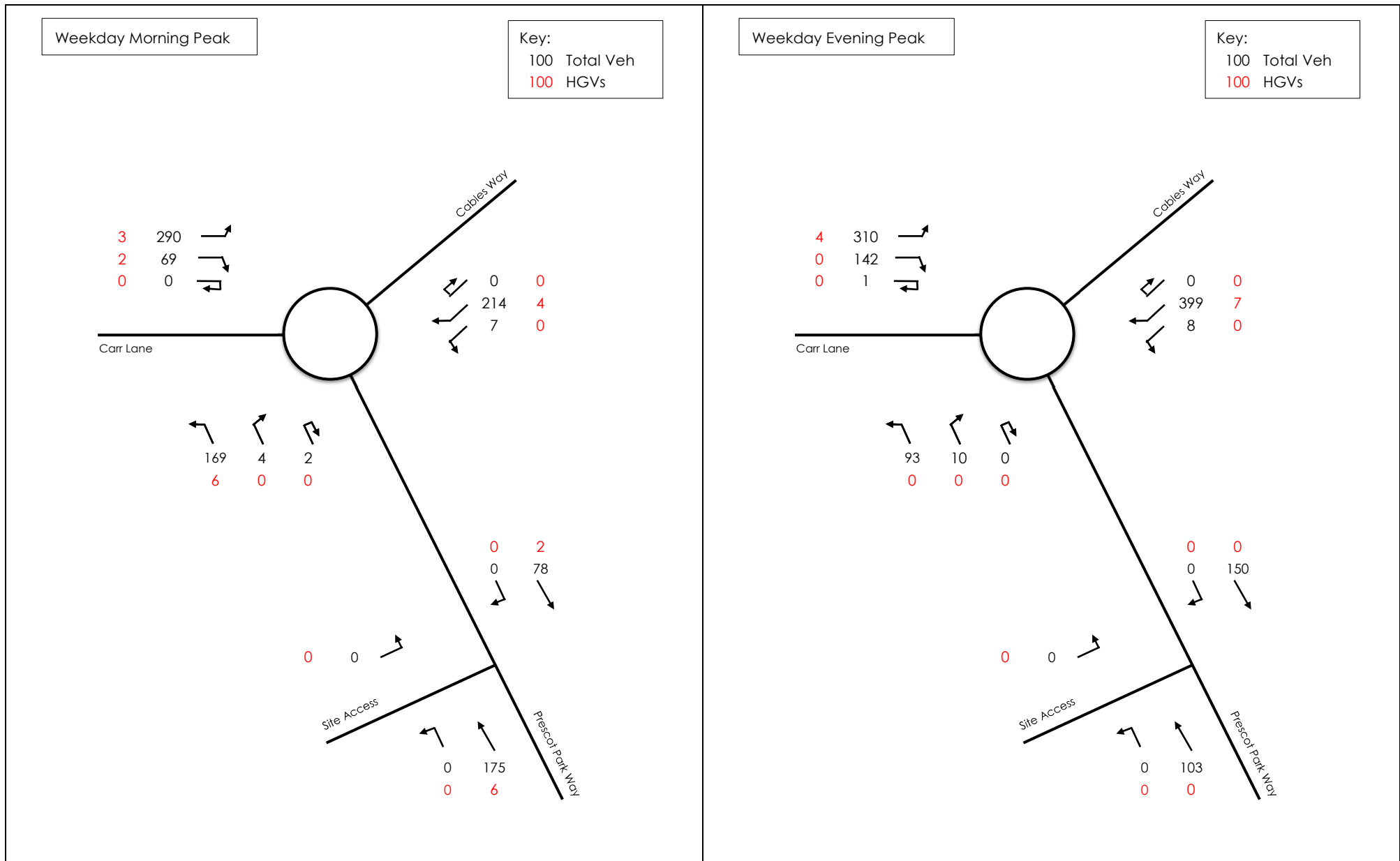


Figure 7.7

2033 Base Traffic Flows

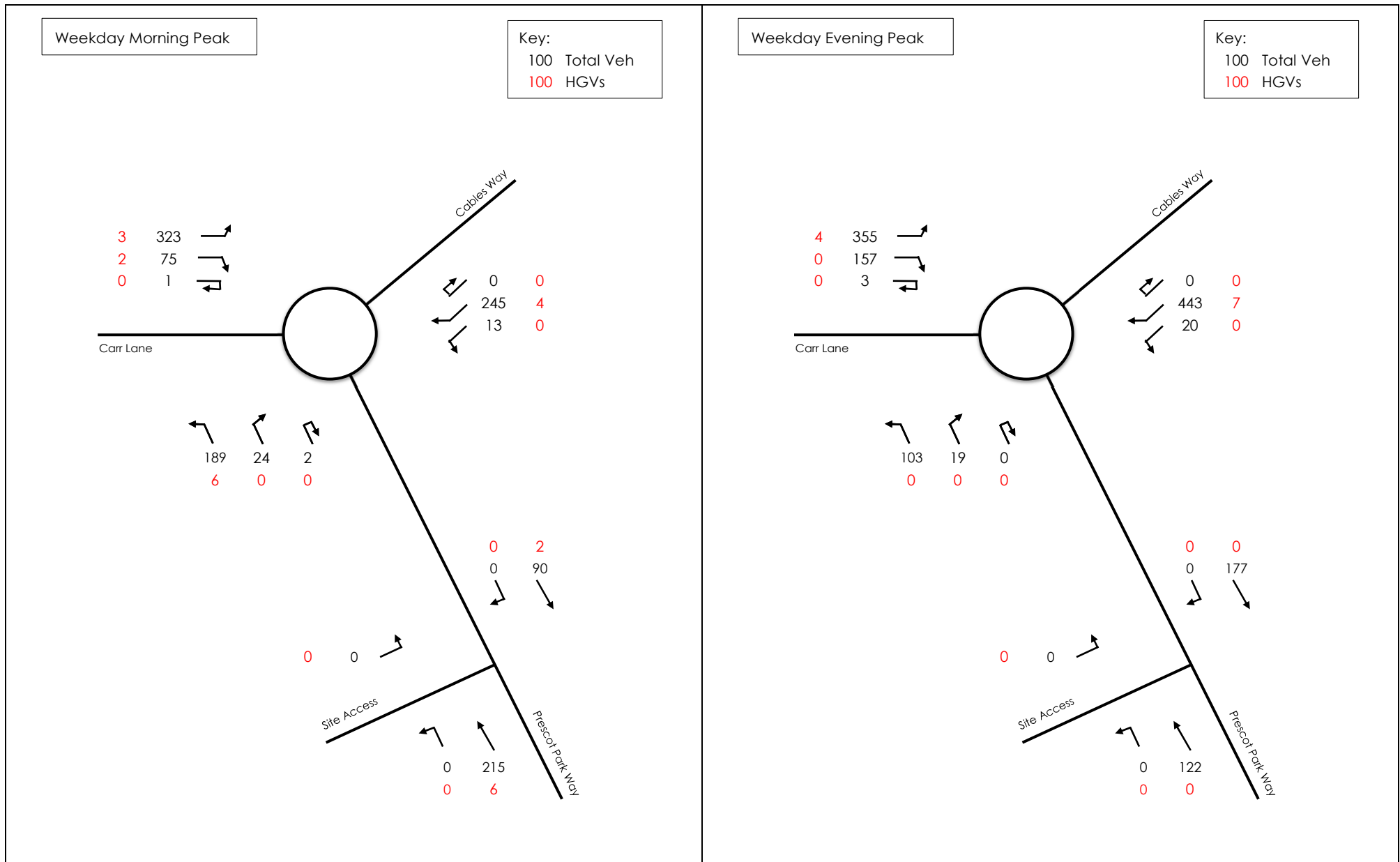
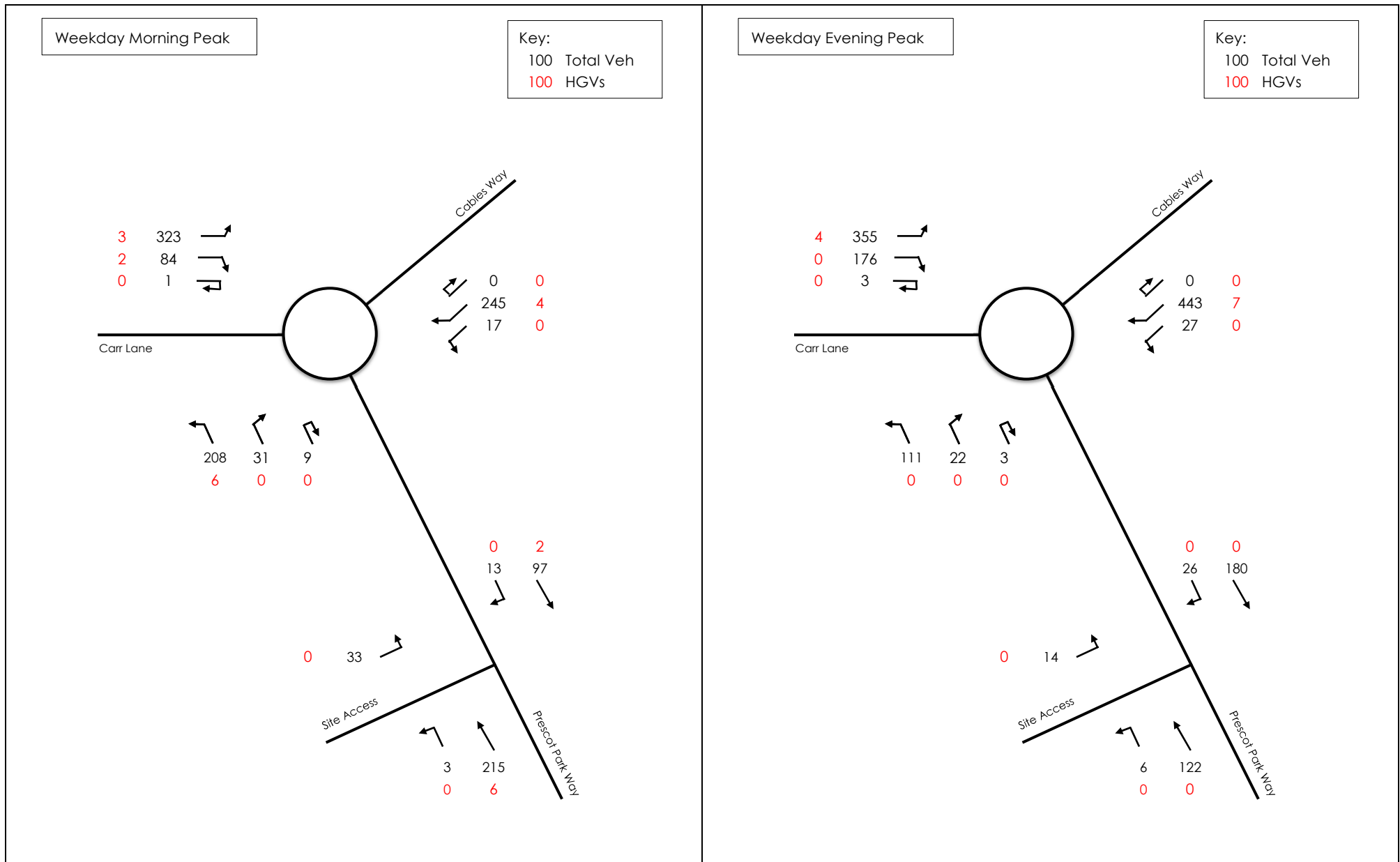
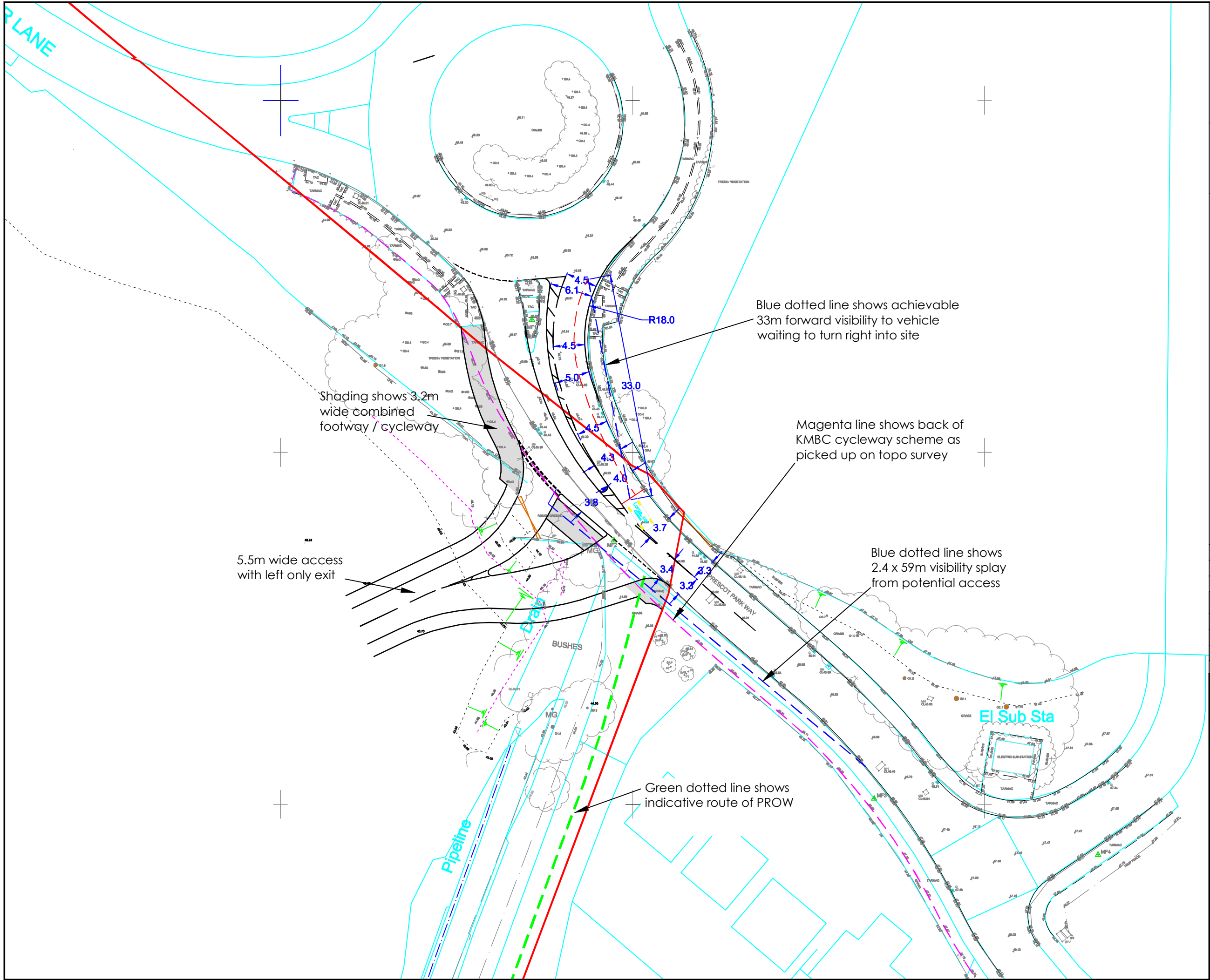


Figure 7.8 2033 Base Plus Proposed Development Traffic Flows





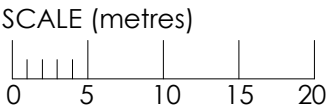
Appendix A: Approved Access Arrangement Drawing



Key

UU Land Ownership

OS mapping imported to topo @ 0,0



G	12.12.22	General amendment	SFB	SFB	PRC
F	07.12.22	Kerblne amendment	SFB	SFB	PRC
E	23.11.22	Addition of PROW	SFB	SFB	PRC
D	27.01.22	General amendments to take on board Road Safety Audit findings	SFB	SFB	PRC
C	10.01.22	General amendments	SFB	SFB	PRC
B	06.12.21	General amendments	SFB	SFB	PRC
A	02.11.21	General amendments	SFB	SFB	PRC
Rev.	Date	Revision Details	Drawn	Check	App.



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E: info@cbotransport.co.uk
W: www.cbotransport.co.uk

Client

United Utilities

Project

Carr Lane, Prescott

Drawing Title

Proposed Access Arrangement from Prescott Park Way

Drawn	Checked	Approved
SFB	PRC	PRC

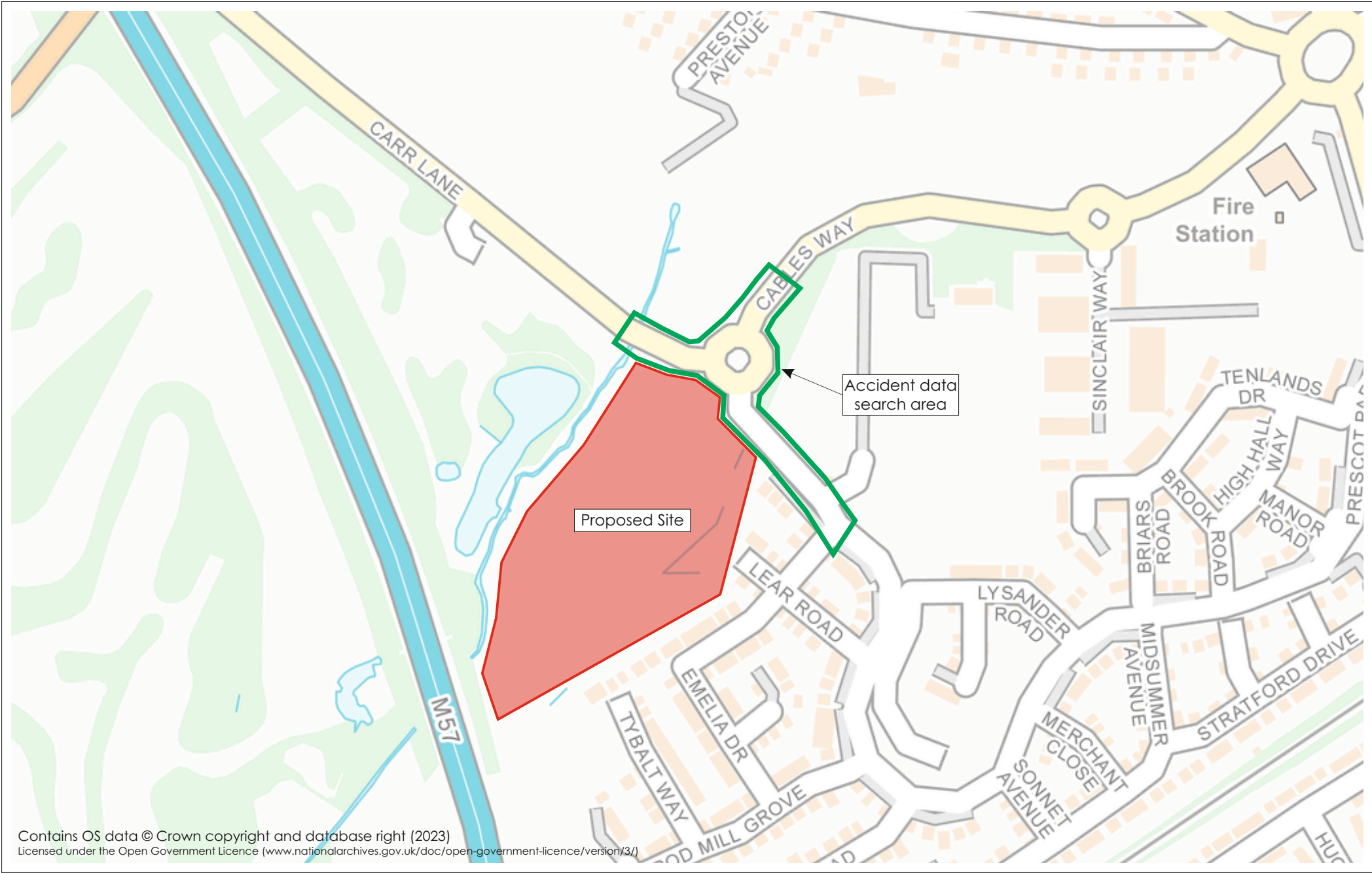
Scale / Size	Date
1:500 @ A3	22.10.21

Status	Drg No	Rev
Information	CBO-0206-012	G



Appendix B: Accident Data Search Area

Figure B Accident Data Search Area





Appendix C: Completed Accessibility Assessment

Accessibility Assessment Form

Access on foot			Points	Score	Justification for Scoring
Location	<u>Residential Development</u> : Is the site within 800m of a district or local centre (see Accessibility Maps) OR <u>Non-residential development</u> : Is the density of existing local housing (i.e. within 800m) more than 30 houses per hectare (see Accessibility Maps)	Yes	2	0	Refer to Transport Assessment
		No	0		
Internal layout	Does ‘circulation’ and access inside the sites reflect direct, safe and easy to use pedestrian routes for all, with priority given to pedestrians when they have to cross roads or cycle routes?	Yes	1	1	Typical residential scheme layout
		No	0		
External layout	Are there barriers between site and local facilities or housing, which restrict pedestrian access? Examples include no dropped kerbs at crossings or on desire lines; steep gradients; a lack of a formal crossing where there is heavy traffic; security concerns, e.g. lack of lighting	Yes	-1	1	New footway / cycleway provided on Prescot Park Way and crossings at roundabout link to surrounding network
		No	1		
	Total Score			2	
	Minimum score required			4	

Comments or action needed to correct any shortfall

Refer to Transport Assessment

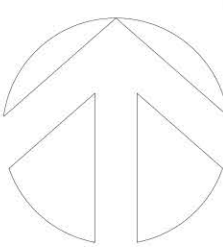
Access by Cycle			Points	Score	Justification for Scoring
Location	Residential Development: Is the site within 1500m of a district or local centre (see Accessibility Maps) Or Non-residential development: Is the density of existing local housing (e.g. within 1500m) more than 30 houses per hectare (see Accessibility Maps)	Yes	2	2	1200m to Prescot Town Centre
		No	0		
Internal layout	Does 'circulation' and access inside the site reflect appropriate and direct cycle routes, with priority given to cyclists where they meet motor vehicles?	Yes	1	1	Typical residential scheme layout
		No	0		
External Access	Is the development within 400m of an existing or proposed designated cycle route and/ or proposes to create a link to a cycle route, or develop a route.	Yes	1	1	New footway / cycleway provided on Prescot Park Way past site
		No	-1		
Other	Development includes cycle parking, shower facilities, and lockers for cyclists.	Yes	1	1	
		No	0		
	Total Score			5	
	Minimum score required			5	
Comments or action needed to correct any shortfall					

Access by Public Transport			Points	Score	Justification for Scoring
Location and access to public transport	Is the site within a 200m walk of a bus or tram stop, and/or within 400m of a rail station?	Yes	2	2	Yes when measured from site frontage
		No	0		
	Are there barriers on direct pedestrian routes to bus or tram stops or rail stations e.g. a lack of dropped kerbs, footpaths less than 2m wide, a lack of formal crossings and / or bus stop infrastructure.	Yes	0	1	Adequate links to closest bus stops
		No	1		
Frequency	High (four or more bus or tram services or trains an hour)		2	2	89 & 99 services are accessible
	Medium (two or three bus or tram services or trains an hour)		1		
	Low (less than two bus or tram services or trains an hour)		0		
Other	The proposal contributes to bus priority measures serving the site	Yes	1	0	Not needed
		No	0		
	The proposal contributes to bus stops, bus interchange, tram facilities or bus or rail stations in the vicinity and/or provides bus stops or bus interchange in the site	Yes	1	0	Not needed
		No	0		
	The proposal contributes to an existing or new supported bus service	Yes	1	0	Not needed
		No	0		
	Total Score			5	
	Minimum score required			5	
Comments or action needed to correct any shortfall					

Parking			Points	Score	Justification for Scoring
Parking	The off-street parking provided is as advised in Section 4 for that development type	Yes	1	1	Accords with standards
		No	0		
	The off street parking provided is less than 75% of the amount advised in Section 4 for that development type (or shares parking provision with another development).	Yes	2	0	NA
		No	0		
	For development in controlled parking zones:				
	Is the proposal for a car free development?	Yes	1	0	NA
		No	0		
	Does it supports the control or removal of on-street parking spaces (inc provision of disabled spaces) or contributes to other identified measures in the local parking strategy (including car clubs)	Yes	1	0	NA
		No	0		
		Total Score			1
	Minimum score required			1	
Comments or action needed to correct any shortfall.					



Appendix D: Proposed Site Layout



IMPORTANT NOTE:

ALL DIMENSIONS AND LEVELS SHOWN ON THIS DRAWING ARE TO BE CHECKED BY THE CONTRACTOR/ MANUFACTURER PRIOR TO THE COMMENCEMENT OF ANY WORKS ON SITE OR THE MANUFACTURE OF ANY SITE COMPONENTS.

THIS DRAWING IS NOT TO BE SCALED.

DIMENSIONS ARE INDICATED IN MILLIMETRES UNLESS CLEARLY STATED OTHERWISE.

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Revision:	By:	Date:
A - Updated house types	BG	23.08.2

Partner
CONSTRUCTION LTD

Residential Development

Carr Lane
Prescot
Knowsley

Colour Site Plan

UL/CL/CSP/01

Dwn: BG Ckd: ST Date: 17/08/23

Scale: 1:500 Paper Size: A1 Rev: A

Client:

Project Title:

Address:

Drawing Title:

Drawing No:

4 Morris Walk, Pennington Wharf, Plant Lane, Leigh, WNT4 4EZ
Tel: 01925 747815
e-mail: enquiries@baldwindesign.net
www.baldwindesign.net

Partner
CONSTRUCTION LTD



Appendix E: TRICS Outputs

Calculation Reference: AUDIT-751701-230728-0711

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	
	HC HAMPSHIRE	1 days
	SC SURREY	1 days
	WB WEST BERKSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	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: 71 to 108 (units:)
 Range Selected by User: 50 to 135 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: Selected: 2.3 to 2.9 Actual: 1.60 to 4.50

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 01/03/23

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	1 days
Thursday	2 days
Friday	1 days

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

Selected survey types:

Manual count	4 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:

Edge of Town	4
--------------	---

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	3
No Sub Category	1

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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	1 days - Selected
Servicing vehicles Excluded	12 days - Selected

Secondary Filtering selection:

Use Class:

C3 4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 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	1 days
10,001 to 15,000	2 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days

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

Car ownership within 5 miles:

1.1 to 1.5 4 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	3 days
No	1 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 4 days

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

LIST OF SITES relevant to selection parameters

1	HC-03-A-27 DAIRY ROAD ANDOVER	MIXED HOUSES		HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:		73	
	Survey date: TUESDAY		16/11/21	Survey Type: MANUAL
2	NF-03-A-36 LONDON ROAD WYMONDHAM	MIXED HOUSES		NORFOLK
	Edge of Town No Sub Category Total No of Dwellings:		75	
	Survey date: THURSDAY		29/09/22	Survey Type: MANUAL
3	SC-03-A-04 HIGH ROAD BYFLEET	DETACHED & TERRACED		SURREY
	Edge of Town Residential Zone Total No of Dwellings:		71	
	Survey date: THURSDAY		23/01/14	Survey Type: MANUAL
4	WB-03-A-03 DORKING WAY READING CALCOT	MIXED HOUSES		WEST BERKSHIRE
	Edge of Town Residential Zone Total No of Dwellings:		108	
	Survey date: FRIDAY		09/09/22	Survey Type: MANUAL

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
AS-03-A-02	Bungalows
DV-03-A-02	Bungalows
ES-03-A-08	Flats
HC-03-A-28	Flats
NF-03-A-02	Flats
NM-03-A-01	Low rates
WS-03-A-16	Low rates

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): 1.60

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	4	82	0.080	4	82	0.297	4	82	0.377
08:00 - 09:00	4	82	0.187	4	82	0.370	4	82	0.557
09:00 - 10:00	4	82	0.125	4	82	0.165	4	82	0.290
10:00 - 11:00	4	82	0.144	4	82	0.232	4	82	0.376
11:00 - 12:00	4	82	0.153	4	82	0.162	4	82	0.315
12:00 - 13:00	4	82	0.193	4	82	0.211	4	82	0.404
13:00 - 14:00	4	82	0.196	4	82	0.199	4	82	0.395
14:00 - 15:00	4	82	0.199	4	82	0.177	4	82	0.376
15:00 - 16:00	4	82	0.339	4	82	0.177	4	82	0.516
16:00 - 17:00	4	82	0.232	4	82	0.202	4	82	0.434
17:00 - 18:00	4	82	0.367	4	82	0.162	4	82	0.529
18:00 - 19:00	4	82	0.275	4	82	0.153	4	82	0.428
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.490			2.507			4.997

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:	71 - 108 (units:)
Survey date range:	01/01/12 - 01/03/23
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	7

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 shown. 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	4	82	0.000	4	82	0.000	4	82	0.000
08:00 - 09:00	4	82	0.009	4	82	0.009	4	82	0.018
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.000	4	82	0.000	4	82	0.000
11:00 - 12:00	4	82	0.003	4	82	0.003	4	82	0.006
12:00 - 13:00	4	82	0.006	4	82	0.006	4	82	0.012
13:00 - 14:00	4	82	0.003	4	82	0.000	4	82	0.003
14:00 - 15:00	4	82	0.000	4	82	0.003	4	82	0.003
15:00 - 16:00	4	82	0.009	4	82	0.009	4	82	0.018
16:00 - 17:00	4	82	0.000	4	82	0.000	4	82	0.000
17:00 - 18:00	4	82	0.009	4	82	0.009	4	82	0.018
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.039			0.039			0.078

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	4	82	0.003	4	82	0.003	4	82	0.006
08:00 - 09:00	4	82	0.000	4	82	0.000	4	82	0.000
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.003	4	82	0.003	4	82	0.006
11:00 - 12:00	4	82	0.003	4	82	0.003	4	82	0.006
12:00 - 13:00	4	82	0.003	4	82	0.000	4	82	0.003
13:00 - 14:00	4	82	0.003	4	82	0.003	4	82	0.006
14:00 - 15:00	4	82	0.003	4	82	0.003	4	82	0.006
15:00 - 16:00	4	82	0.000	4	82	0.003	4	82	0.003
16:00 - 17:00	4	82	0.000	4	82	0.000	4	82	0.000
17:00 - 18:00	4	82	0.000	4	82	0.000	4	82	0.000
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.018			0.018			0.036

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	4	82	0.000	4	82	0.000	4	82	0.000
08:00 - 09:00	4	82	0.003	4	82	0.003	4	82	0.006
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.000	4	82	0.000	4	82	0.000
11:00 - 12:00	4	82	0.000	4	82	0.000	4	82	0.000
12:00 - 13:00	4	82	0.000	4	82	0.000	4	82	0.000
13:00 - 14:00	4	82	0.000	4	82	0.000	4	82	0.000
14:00 - 15:00	4	82	0.000	4	82	0.000	4	82	0.000
15:00 - 16:00	4	82	0.003	4	82	0.003	4	82	0.006
16:00 - 17:00	4	82	0.000	4	82	0.000	4	82	0.000
17:00 - 18:00	4	82	0.000	4	82	0.000	4	82	0.000
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.006			0.012

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.

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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	4	82	0.003	4	82	0.009	4	82	0.012
08:00 - 09:00	4	82	0.000	4	82	0.003	4	82	0.003
09:00 - 10:00	4	82	0.003	4	82	0.000	4	82	0.003
10:00 - 11:00	4	82	0.000	4	82	0.003	4	82	0.003
11:00 - 12:00	4	82	0.003	4	82	0.003	4	82	0.006
12:00 - 13:00	4	82	0.000	4	82	0.000	4	82	0.000
13:00 - 14:00	4	82	0.003	4	82	0.000	4	82	0.003
14:00 - 15:00	4	82	0.006	4	82	0.003	4	82	0.009
15:00 - 16:00	4	82	0.000	4	82	0.000	4	82	0.000
16:00 - 17:00	4	82	0.006	4	82	0.003	4	82	0.009
17:00 - 18:00	4	82	0.003	4	82	0.000	4	82	0.003
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.027			0.024			0.051

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	4	82	0.089	4	82	0.361	4	82	0.450
08:00 - 09:00	4	82	0.223	4	82	0.569	4	82	0.792
09:00 - 10:00	4	82	0.150	4	82	0.217	4	82	0.367
10:00 - 11:00	4	82	0.177	4	82	0.272	4	82	0.449
11:00 - 12:00	4	82	0.183	4	82	0.196	4	82	0.379
12:00 - 13:00	4	82	0.257	4	82	0.257	4	82	0.514
13:00 - 14:00	4	82	0.239	4	82	0.239	4	82	0.478
14:00 - 15:00	4	82	0.251	4	82	0.229	4	82	0.480
15:00 - 16:00	4	82	0.526	4	82	0.220	4	82	0.746
16:00 - 17:00	4	82	0.339	4	82	0.294	4	82	0.633
17:00 - 18:00	4	82	0.502	4	82	0.254	4	82	0.756
18:00 - 19:00	4	82	0.382	4	82	0.202	4	82	0.584
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.318			3.310			6.628

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	4	82	0.037	4	82	0.052	4	82	0.089
08:00 - 09:00	4	82	0.043	4	82	0.098	4	82	0.141
09:00 - 10:00	4	82	0.043	4	82	0.031	4	82	0.074
10:00 - 11:00	4	82	0.024	4	82	0.028	4	82	0.052
11:00 - 12:00	4	82	0.024	4	82	0.052	4	82	0.076
12:00 - 13:00	4	82	0.018	4	82	0.034	4	82	0.052
13:00 - 14:00	4	82	0.034	4	82	0.015	4	82	0.049
14:00 - 15:00	4	82	0.040	4	82	0.031	4	82	0.071
15:00 - 16:00	4	82	0.101	4	82	0.055	4	82	0.156
16:00 - 17:00	4	82	0.055	4	82	0.043	4	82	0.098
17:00 - 18:00	4	82	0.067	4	82	0.046	4	82	0.113
18:00 - 19:00	4	82	0.040	4	82	0.031	4	82	0.071
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.526			0.516			1.042

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	4	82	0.000	4	82	0.040	4	82	0.040
08:00 - 09:00	4	82	0.000	4	82	0.037	4	82	0.037
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.006	4	82	0.021	4	82	0.027
11:00 - 12:00	4	82	0.003	4	82	0.006	4	82	0.009
12:00 - 13:00	4	82	0.006	4	82	0.000	4	82	0.006
13:00 - 14:00	4	82	0.009	4	82	0.000	4	82	0.009
14:00 - 15:00	4	82	0.006	4	82	0.003	4	82	0.009
15:00 - 16:00	4	82	0.024	4	82	0.006	4	82	0.030
16:00 - 17:00	4	82	0.037	4	82	0.003	4	82	0.040
17:00 - 18:00	4	82	0.031	4	82	0.000	4	82	0.031
18:00 - 19:00	4	82	0.015	4	82	0.003	4	82	0.018
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.137			0.119			0.256

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	4	82	0.000	4	82	0.009	4	82	0.009
08:00 - 09:00	4	82	0.000	4	82	0.003	4	82	0.003
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.000	4	82	0.000	4	82	0.000
11:00 - 12:00	4	82	0.000	4	82	0.000	4	82	0.000
12:00 - 13:00	4	82	0.000	4	82	0.000	4	82	0.000
13:00 - 14:00	4	82	0.000	4	82	0.000	4	82	0.000
14:00 - 15:00	4	82	0.000	4	82	0.000	4	82	0.000
15:00 - 16:00	4	82	0.003	4	82	0.000	4	82	0.003
16:00 - 17:00	4	82	0.000	4	82	0.000	4	82	0.000
17:00 - 18:00	4	82	0.006	4	82	0.000	4	82	0.006
18:00 - 19:00	4	82	0.006	4	82	0.000	4	82	0.006
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.015			0.012			0.027

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	4	82	0.000	4	82	0.000	4	82	0.000
08:00 - 09:00	4	82	0.000	4	82	0.006	4	82	0.006
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.000	4	82	0.000	4	82	0.000
11:00 - 12:00	4	82	0.000	4	82	0.000	4	82	0.000
12:00 - 13:00	4	82	0.000	4	82	0.000	4	82	0.000
13:00 - 14:00	4	82	0.000	4	82	0.000	4	82	0.000
14:00 - 15:00	4	82	0.000	4	82	0.000	4	82	0.000
15:00 - 16:00	4	82	0.006	4	82	0.000	4	82	0.006
16:00 - 17:00	4	82	0.000	4	82	0.000	4	82	0.000
17:00 - 18:00	4	82	0.000	4	82	0.000	4	82	0.000
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.006			0.012

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	4	82	0.000	4	82	0.049	4	82	0.049
08:00 - 09:00	4	82	0.000	4	82	0.046	4	82	0.046
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.006	4	82	0.021	4	82	0.027
11:00 - 12:00	4	82	0.003	4	82	0.006	4	82	0.009
12:00 - 13:00	4	82	0.006	4	82	0.000	4	82	0.006
13:00 - 14:00	4	82	0.009	4	82	0.000	4	82	0.009
14:00 - 15:00	4	82	0.006	4	82	0.003	4	82	0.009
15:00 - 16:00	4	82	0.034	4	82	0.006	4	82	0.040
16:00 - 17:00	4	82	0.037	4	82	0.003	4	82	0.040
17:00 - 18:00	4	82	0.037	4	82	0.000	4	82	0.037
18:00 - 19:00	4	82	0.021	4	82	0.003	4	82	0.024
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.159			0.137			0.296

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): 1.60

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	4	82	0.128	4	82	0.471	4	82	0.599
08:00 - 09:00	4	82	0.266	4	82	0.716	4	82	0.982
09:00 - 10:00	4	82	0.196	4	82	0.248	4	82	0.444
10:00 - 11:00	4	82	0.208	4	82	0.324	4	82	0.532
11:00 - 12:00	4	82	0.214	4	82	0.257	4	82	0.471
12:00 - 13:00	4	82	0.281	4	82	0.291	4	82	0.572
13:00 - 14:00	4	82	0.284	4	82	0.254	4	82	0.538
14:00 - 15:00	4	82	0.303	4	82	0.266	4	82	0.569
15:00 - 16:00	4	82	0.661	4	82	0.281	4	82	0.942
16:00 - 17:00	4	82	0.437	4	82	0.343	4	82	0.780
17:00 - 18:00	4	82	0.609	4	82	0.300	4	82	0.909
18:00 - 19:00	4	82	0.443	4	82	0.235	4	82	0.678
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.030			3.986			8.016

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	4	82	0.073	4	82	0.257	4	82	0.330
08:00 - 09:00	4	82	0.165	4	82	0.324	4	82	0.489
09:00 - 10:00	4	82	0.113	4	82	0.144	4	82	0.257
10:00 - 11:00	4	82	0.110	4	82	0.187	4	82	0.297
11:00 - 12:00	4	82	0.107	4	82	0.128	4	82	0.235
12:00 - 13:00	4	82	0.150	4	82	0.144	4	82	0.294
13:00 - 14:00	4	82	0.144	4	82	0.165	4	82	0.309
14:00 - 15:00	4	82	0.165	4	82	0.159	4	82	0.324
15:00 - 16:00	4	82	0.284	4	82	0.141	4	82	0.425
16:00 - 17:00	4	82	0.202	4	82	0.174	4	82	0.376
17:00 - 18:00	4	82	0.297	4	82	0.128	4	82	0.425
18:00 - 19:00	4	82	0.245	4	82	0.131	4	82	0.376
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.055			2.082			4.137

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	4	82	0.003	4	82	0.037	4	82	0.040
08:00 - 09:00	4	82	0.009	4	82	0.031	4	82	0.040
09:00 - 10:00	4	82	0.012	4	82	0.021	4	82	0.033
10:00 - 11:00	4	82	0.031	4	82	0.043	4	82	0.074
11:00 - 12:00	4	82	0.040	4	82	0.028	4	82	0.068
12:00 - 13:00	4	82	0.024	4	82	0.055	4	82	0.079
13:00 - 14:00	4	82	0.043	4	82	0.024	4	82	0.067
14:00 - 15:00	4	82	0.031	4	82	0.012	4	82	0.043
15:00 - 16:00	4	82	0.043	4	82	0.021	4	82	0.064
16:00 - 17:00	4	82	0.028	4	82	0.024	4	82	0.052
17:00 - 18:00	4	82	0.058	4	82	0.024	4	82	0.082
18:00 - 19:00	4	82	0.031	4	82	0.021	4	82	0.052
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.353			0.341			0.694

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	4	82	0.000	4	82	0.000	4	82	0.000
08:00 - 09:00	4	82	0.000	4	82	0.003	4	82	0.003
09:00 - 10:00	4	82	0.000	4	82	0.000	4	82	0.000
10:00 - 11:00	4	82	0.000	4	82	0.000	4	82	0.000
11:00 - 12:00	4	82	0.000	4	82	0.000	4	82	0.000
12:00 - 13:00	4	82	0.009	4	82	0.006	4	82	0.015
13:00 - 14:00	4	82	0.003	4	82	0.006	4	82	0.009
14:00 - 15:00	4	82	0.000	4	82	0.000	4	82	0.000
15:00 - 16:00	4	82	0.000	4	82	0.000	4	82	0.000
16:00 - 17:00	4	82	0.003	4	82	0.003	4	82	0.006
17:00 - 18:00	4	82	0.003	4	82	0.000	4	82	0.003
18:00 - 19:00	4	82	0.000	4	82	0.000	4	82	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.018			0.018			0.036

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 F: Super Output Area and Traffic Distribution Data

The map displays the Knowsley 007 ward boundary in red. Key roads shown include the A58, A57, and M57. Surrounding areas include Prescot, Whiston, Mosscroft, and Pluckington. The map also shows the Liverpool to Manchester Lines and the Forest House Interchange. A legend in the top right corner indicates 'Area' and 'Hover over an area'. The map is credited to Leaflet and OpenStreetMap contributors.

Table G1: Workplace Destinations

Location	Car	Outside	Route		
	Driver	Peak	1	2	3
Allerdale	1	1			
Blackburn with Darwen	1			1	
Bolton	2			2	
Bury	1			1	
Cheshire East	6			6	
Cheshire West and Chester	23			23	
Chorley	1				1
Copeland	2	2			
Halton	66		33	33	
Lancaster	1	1			
Liverpool	324			324	
Manchester	19		9	10	
Oldham	4	4			
Pendle	1	1			
Preston	6			3	3
Rochdale	5			5	
Salford	17		9	8	
Sefton	60			60	
Stockport	6		3	3	
Tameside	2	2			
Trafford	14		7	7	
Warrington	84		84		
West Lancashire	53			53	
Wigan	22				22
Wirral	17			17	
E02001327 : Knowsley 001	17			17	
E02001329 : Knowsley 003	16			16	
E02001330 : Knowsley 004	4			4	
E02001331 : Knowsley 005	76			76	
E02001332 : Knowsley 006	2			2	
E02001333 : Knowsley 007	109				109
E02001334 : Knowsley 008	13			13	
E02001335 : Knowsley 009	97		65		32
E02001336 : Knowsley 010	12			12	
E02001337 : Knowsley 011	20			20	
E02001338 : Knowsley 012	3			3	
E02001339 : Knowsley 013	20		20		
E02001340 : Knowsley 014	2			2	
E02001341 : Knowsley 015	67			67	
E02001342 : Knowsley 016	32			32	
E02001343 : Knowsley 017	40		20	20	
E02001344 : Knowsley 018	1			1	
E02001345 : Knowsley 019	1			1	
E02001346 : Knowsley 020	19			19	
E02001406 : St. Helens 001	13				13
E02001408 : St. Helens 003	1				1
E02001409 : St. Helens 004	3				3
E02001410 : St. Helens 005	9				9
E02001411 : St. Helens 006	1				1
E02001412 : St. Helens 007	7				7
E02001413 : St. Helens 008	1				1
E02001414 : St. Helens 009	6				6
E02001416 : St. Helens 011	2				2
E02001417 : St. Helens 012	29				29
E02001418 : St. Helens 013	1		1		
E02001419 : St. Helens 014	41				41
E02001420 : St. Helens 015	7		3		4
E02001421 : St. Helens 016	11				11
E02001422 : St. Helens 017	3				3
E02001423 : St. Helens 018	12				12
E02001424 : St. Helens 019	28		14		14
E02001425 : St. Helens 020	5		2		3
E02001426 : St. Helens 021	11		11		
E02001427 : St. Helens 022	9		9		
E02001428 : St. Helens 023	16		16		
	1,505	11	306	861	327

149420.48%57.63%21.89%100.00%

20.00%58.00%22.00%100.00%



Appendix G: Junctions 9 Outputs:
Site Access

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: Site access 88 dwellings.j9
Path: L:\Projects\CBO-0803 Carr Lane, Prescott\Modelling
Report generation date: 16/08/2023 11:34:43

- »Proposed Junction - 2033 Base Plus Proposed Dev, AM
- »Proposed Junction - 2033 Base Plus Proposed Dev, PM

Summary of junction performance

	AM							PM						
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap
Proposed Junction - 2033 Base Plus Proposed Dev														
Stream B-AC	D1	0.1	5.43	0.05	A	0.73	527 %	D2	0.0	5.04	0.02	A	0.75	436 %
Stream C-AB		0.0	5.92	0.03	A		[Stream B-AC]		0.1	5.51	0.06	A		[Stream C-AB]

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 Av. delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted Av.s. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Site access, Prescott Way
Location	
Site number	
Date	28/07/2023
Version	
Status	
Identifier	
Client	
Jobnumber	CBO-0803
Enumerator	CBO
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
	✓	Delay	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	2033 Base Plus Proposed Dev	AM	ONE HOUR	07:30	09:00	15
D2	2033 Base Plus Proposed Dev	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Proposed Junction	100.000

Proposed Junction - 2033 Base Plus Proposed Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.73	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	527	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Prescot Park Way (SE)		Major
B	Site Access		Minor
C	Prescot Park Way (NW)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.80			60.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	5.00	30	27

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	601	0.106	0.267	0.168	0.381
B-C	769	0.114	0.288	-	-
C-B	609	0.228	0.228	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic 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	2033 Base Plus Proposed Dev	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	218	100.000
B		✓	33	100.000
C		✓	110	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	3	215
	B	0	0	33
	C	97	13	0

Vehicle Mix

HV %s

	To			
From		A	B	C
	A	0	0	3
	B	0	0	0
	C	2	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A	164	169
	B	25	25
	C	83	84
07:45-08:00	A	196	202
	B	30	30
	C	99	101
08:00-08:15	A	240	247
	B	36	36
	C	121	123
08:15-08:30	A	240	247
	B	36	36
	C	121	123
08:30-08:45	A	196	202
	B	30	30
	C	99	101
08:45-09:00	A	164	169
	B	25	25
	C	83	84

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
B-AC	0.05	5.43	0.1	A
C-AB	0.03	5.92	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	25	721	0.034	25	0.0	5.168	A
C-AB	11	620	0.018	11	0.0	5.914	A
C-A	72			72			
A-B	2			2			
A-C	162			162			

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	30	712	0.042	30	0.0	5.277	A

C-AB	14	622	0.022	14	0.0	5.913	A
C-A	85			85			
A-B	3			3			
A-C	193			193			

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	36	699	0.052	36	0.1	5.434	A
C-AB	17	626	0.028	17	0.0	5.913	A
C-A	104			104			
A-B	3			3			
A-C	237			237			

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	36	699	0.052	36	0.1	5.434	A
C-AB	17	626	0.028	17	0.0	5.915	A
C-A	104			104			
A-B	3			3			
A-C	237			237			

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	30	712	0.042	30	0.0	5.278	A
C-AB	14	622	0.022	14	0.0	5.917	A
C-A	85			85			
A-B	3			3			
A-C	193			193			

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	25	721	0.034	25	0.0	5.170	A
C-AB	11	620	0.018	11	0.0	5.919	A
C-A	72			72			
A-B	2			2			
A-C	162			162			

Proposed Junction - 2033 Base Plus Proposed 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	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.75	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	436	Stream C-AB

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	2033 Base Plus Proposed Dev	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	128	100.000
B		✓	14	100.000
C		✓	206	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
From		A	B	C
	A	0	6	122
	B	0	0	14
	C	180	26	0

Vehicle Mix

HV %s

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:30-16:45	A	96	96

	B	11	11
	C	155	155
16:45-17:00	A	115	115
	B	13	13
	C	185	185
17:00-17:15	A	141	141
	B	15	15
	C	227	227
17:15-17:30	A	141	141
	B	15	15
	C	227	227
17:30-17:45	A	115	115
	B	13	13
	C	185	185
17:45-18:00	A	96	96
	B	11	11
	C	155	155

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
B-AC	0.02	5.04	0.0	A
C-AB	0.06	5.51	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	11	742	0.014	10	0.0	4.918	A
C-AB	24	678	0.036	24	0.0	5.504	A
C-A	131			131			
A-B	5			5			
A-C	92			92			

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	13	737	0.017	13	0.0	4.968	A
C-AB	31	692	0.044	30	0.1	5.444	A
C-A	155			155			
A-B	5			5			
A-C	110			110			

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	15	730	0.021	15	0.0	5.038	A
C-AB	40	711	0.056	40	0.1	5.362	A
C-A	187			187			
A-B	7			7			
A-C	134			134			

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	15	730	0.021	15	0.0	5.038	A
C-AB	40	711	0.056	40	0.1	5.361	A
C-A	187			187			
A-B	7			7			
A-C	134			134			

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	13	737	0.017	13	0.0	4.968	A
C-AB	31	692	0.044	31	0.1	5.446	A
C-A	155			155			
A-B	5			5			
A-C	110			110			

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	11	742	0.014	11	0.0	4.919	A
C-AB	25	678	0.036	25	0.1	5.511	A
C-A	131			131			
A-B	5			5			
A-C	92			92			



Appendix H: Junctions 9 Outputs:
Prescot Park Way / Carr Lane / Cables Way

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: Prescott PW_Carr Lane 88 dwellings.j9
Path: L:\Projects\CBO-0803 Carr Lane, Prescott\Modelling
Report generation date: 16/08/2023 11:39:03

- »Existing Junction - 2021 Observed, AM
- »Existing Junction - 2021 Observed, PM
- »Existing Junction - 2033 Base, AM
- »Existing Junction - 2033 Base, PM
- »Existing Junction - 2033 Base Plus Proposed Dev, AM
- »Existing Junction - 2033 Base Plus Proposed Dev, PM

Summary of junction performance

	AM							PM							
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	
	Existing Junction - 2021 Observed														
Arm A	D1	0.2	2.72	0.14	A	3.04	269 %	D2	0.4	3.28	0.27	A	3.43	193 %	
Arm B		0.1	2.67	0.11	A		[Arm C]		0.1	2.68	0.07	A		[Arm C]	
Arm C		0.3	3.44	0.25	A		[Arm C]		0.5	3.75	0.32	A		[Arm C]	
	Existing Junction - 2033 Base														
Arm A	D3	0.2	2.88	0.19	A	3.29	190 %	D4	0.5	3.71	0.34	A	3.89	130 %	
Arm B		0.2	2.87	0.16	A		[Arm C]		0.1	2.88	0.10	A		[Arm C]	
Arm C		0.5	3.79	0.32	A		[Arm C]		0.7	4.30	0.40	A		[Arm C]	
	Existing Junction - 2033 Base Plus Proposed Dev														
Arm A	D5	0.2	2.91	0.19	A	3.35	179 %	D6	0.5	3.80	0.35	A	3.99	121 %	
Arm B		0.2	2.96	0.18	A		[Arm C]		0.1	2.91	0.11	A		[Arm C]	
Arm C		0.5	3.86	0.33	A		[Arm C]		0.7	4.43	0.42	A		[Arm C]	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted Av.s. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Prescot Park Way / Carr Lane / Cables Way
Location	

Site number	
Date	28/07/2023
Version	
Status	
Identifier	
Client	
Jobnumber	CBO-0803
Enumerator	CBO
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Q Percentiles	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
	✓	Delay	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	2021 Observed	AM	ONE HOUR	07:30	09:00	15
D2	2021 Observed	PM	ONE HOUR	16:30	18:00	15
D3	2033 Base	AM	ONE HOUR	07:30	09:00	15
D4	2033 Base	PM	ONE HOUR	16:30	18:00	15
D5	2033 Base Plus Proposed Dev	AM	ONE HOUR	07:30	09:00	15
D6	2033 Base Plus Proposed Dev	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Junction	100.000

Existing Junction - 2021 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.04	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	269	Arm C

Arms

Arms

Arm	Name	Description
A	Cables Way	
B	Prescot Park Way	
C	Carr Lane	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
A	3.60	6.30	10.8	27.0	45.0	20.0	
B	3.40	6.10	28.2	15.0	45.0	17.0	
C	3.50	6.10	7.3	15.0	45.0	26.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.626	1619
B	0.637	1704
C	0.573	1425

The slope and intercept shown above include any corrections and adjustments.

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	2021 Observed	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	198	100.000
B		✓	157	100.000
C		✓	322	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	6	192
	B	4	2	151
	C	260	62	0

Vehicle Mix

HV %s

	To			
		A	B	C
	A	0	0	2
	B	0	0	3
From	C	1	3	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A	149	152
	B	118	122
	C	242	246
07:45-08:00	A	178	181
	B	141	145
	C	289	293
08:00-08:15	A	218	222
	B	173	178
	C	355	359
08:15-08:30	A	218	222
	B	173	178
	C	355	359
08:30-08:45	A	178	181
	B	141	145
	C	289	293
08:45-09:00	A	149	152
	B	118	122
	C	242	246

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.14	2.72	0.2	A
B	0.11	2.67	0.1	A
C	0.25	3.44	0.3	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	149	48	1557	0.096	149	0.1	2.555	A
B	118	144	1565	0.076	118	0.1	2.487	A

C	242	5	1403	0.173	242	0.2	3.098	A
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07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	178	57	1551	0.115	178	0.1	2.620	A
B	141	173	1547	0.091	141	0.1	2.559	A
C	289	5	1403	0.206	289	0.3	3.233	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	218	70	1543	0.141	218	0.2	2.715	A
B	173	211	1523	0.114	173	0.1	2.666	A
C	355	7	1402	0.253	354	0.3	3.435	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	218	70	1543	0.141	218	0.2	2.716	A
B	173	211	1523	0.114	173	0.1	2.666	A
C	355	7	1402	0.253	355	0.3	3.435	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	178	58	1551	0.115	178	0.1	2.621	A
B	141	173	1547	0.091	141	0.1	2.562	A
C	289	5	1403	0.206	290	0.3	3.234	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	149	48	1557	0.096	149	0.1	2.558	A
B	118	145	1565	0.076	118	0.1	2.489	A
C	242	5	1403	0.173	243	0.2	3.104	A

Existing Junction - 2021 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.43	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	193	Arm C

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	2021 Observed	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	366	100.000
B		✓	93	100.000
C		✓	408	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	7	359
	B	9	0	84
	C	279	128	1

Vehicle Mix

HV %s

	To			
From		A	B	C
	A	0	0	2
	B	0	0	0
	C	1	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:30-16:45	A	276	281
	B	70	70
	C	307	309
16:45-17:00	A	329	335
	B	84	84
	C	367	369

17:00-17:15	A	403	411
	B	102	102
	C	449	452
17:15-17:30	A	403	411
	B	102	102
	C	449	452
17:30-17:45	A	329	335
	B	84	84
	C	367	369
17:45-18:00	A	276	281
	B	70	70
	C	307	309

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.27	3.28	0.4	A
B	0.07	2.68	0.1	A
C	0.32	3.75	0.5	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	276	97	1528	0.180	275	0.2	2.871	A
B	70	270	1529	0.046	70	0.0	2.467	A
C	307	7	1412	0.218	306	0.3	3.253	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	329	116	1516	0.217	329	0.3	3.031	A
B	84	323	1494	0.056	84	0.1	2.552	A
C	367	8	1411	0.260	366	0.3	3.446	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	403	142	1500	0.269	403	0.4	3.280	A
B	102	396	1447	0.071	102	0.1	2.677	A
C	449	10	1410	0.319	449	0.5	3.743	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
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A	403	142	1500	0.269	403	0.4	3.280	A
B	102	396	1447	0.071	102	0.1	2.677	A
C	449	10	1410	0.319	449	0.5	3.746	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	329	116	1516	0.217	329	0.3	3.036	A
B	84	324	1494	0.056	84	0.1	2.552	A
C	367	8	1411	0.260	367	0.4	3.452	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	276	97	1528	0.180	276	0.2	2.877	A
B	70	271	1528	0.046	70	0.0	2.469	A
C	307	7	1412	0.218	307	0.3	3.260	A

Existing Junction - 2033 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.29	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	190	Arm C

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	2033 Base	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	258	100.000
B		✓	215	100.000
C		✓	399	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	13	245
	B	24	2	189
	C	323	75	1

Vehicle Mix

HV %s

	To			
		A	B	C
From	A	0	0	2
	B	0	0	3
	C	1	3	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A	194	198
	B	162	166
	C	300	305
07:45-08:00	A	232	236
	B	193	198
	C	359	364
08:00-08:15	A	284	289
	B	237	243
	C	439	445
08:15-08:30	A	284	289
	B	237	243
	C	439	445
08:30-08:45	A	232	236
	B	193	198
	C	359	364
08:45-09:00	A	194	198
	B	162	166
	C	300	305

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.19	2.88	0.2	A
B	0.16	2.87	0.2	A
C	0.32	3.79	0.5	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	194	59	1551	0.125	194	0.1	2.650	A
B	162	185	1543	0.105	161	0.1	2.605	A
C	300	20	1395	0.215	299	0.3	3.283	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	232	70	1544	0.150	232	0.2	2.743	A
B	193	221	1520	0.127	193	0.1	2.712	A
C	359	23	1393	0.258	358	0.3	3.480	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	284	86	1534	0.185	284	0.2	2.879	A
B	237	271	1489	0.159	237	0.2	2.874	A
C	439	29	1390	0.316	439	0.5	3.783	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	284	86	1534	0.185	284	0.2	2.879	A
B	237	271	1489	0.159	237	0.2	2.874	A
C	439	29	1390	0.316	439	0.5	3.786	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	232	70	1544	0.150	232	0.2	2.744	A
B	193	221	1520	0.127	193	0.1	2.713	A
C	359	23	1393	0.258	359	0.3	3.486	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	194	59	1551	0.125	194	0.1	2.652	A
B	162	185	1543	0.105	162	0.1	2.608	A
C	300	20	1395	0.215	301	0.3	3.290	A

Existing Junction - 2033 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.89	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	130	Arm C

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	2033 Base	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	463	100.000
B		✓	122	100.000
C		✓	515	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	20	443
	B	19	0	103
	C	355	157	3

Vehicle Mix

HV %s

	To			
		A	B	C
	A	0	0	2
	B	0	0	0
	C	1	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:30-16:45	A	349	355
	B	92	92
	C	388	390
16:45-17:00	A	416	424
	B	110	110
	C	463	466
17:00-17:15	A	510	520
	B	134	134
	C	567	571
17:15-17:30	A	510	520
	B	134	134
	C	567	571
17:30-17:45	A	416	424
	B	110	110
	C	463	466
17:45-18:00	A	349	355
	B	92	92
	C	388	390

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.34	3.71	0.5	A
B	0.10	2.88	0.1	A
C	0.40	4.30	0.7	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	349	120	1514	0.230	347	0.3	3.082	A
B	92	335	1487	0.062	92	0.1	2.580	A
C	388	14	1407	0.276	386	0.4	3.521	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	416	144	1500	0.278	416	0.4	3.321	A
B	110	401	1444	0.076	110	0.1	2.697	A
C	463	17	1406	0.329	463	0.5	3.814	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	510	176	1480	0.344	509	0.5	3.706	A
B	134	491	1385	0.097	134	0.1	2.876	A
C	567	21	1404	0.404	566	0.7	4.296	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	510	176	1480	0.344	510	0.5	3.709	A
B	134	491	1385	0.097	134	0.1	2.877	A
C	567	21	1404	0.404	567	0.7	4.303	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	416	144	1500	0.278	417	0.4	3.325	A
B	110	401	1443	0.076	110	0.1	2.701	A
C	463	17	1406	0.329	464	0.5	3.826	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	349	121	1514	0.230	349	0.3	3.092	A
B	92	336	1486	0.062	92	0.1	2.584	A
C	388	14	1407	0.276	388	0.4	3.535	A

Existing Junction - 2033 Base Plus Proposed Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.35	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	179	Arm C

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	2033 Base Plus Proposed Dev	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	262	100.000
B		✓	248	100.000
C		✓	408	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	17	245
	B	31	9	208
	C	323	84	1

Vehicle Mix

HV %s

	To			
From		A	B	C
	A	0	0	2
	B	0	0	3
	C	1	3	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:30-07:45	A	197	201
	B	187	191
	C	307	311
07:45-08:00	A	236	240
	B	223	229
	C	367	372
08:00-08:15	A	288	294
	B	273	280
	C	449	456
08:15-08:30	A	288	294
	B	273	280
	C	449	456
08:30-08:45	A	236	240

	B	223	229
	C	367	372
08:45-09:00	A	197	201
	B	187	191
	C	307	311

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.19	2.91	0.2	A
B	0.18	2.96	0.2	A
C	0.33	3.86	0.5	A

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	197	71	1544	0.128	197	0.1	2.669	A
B	187	185	1545	0.121	186	0.1	2.647	A
C	307	30	1388	0.221	306	0.3	3.323	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	236	84	1536	0.153	235	0.2	2.768	A
B	223	221	1522	0.146	223	0.2	2.770	A
C	367	36	1385	0.265	366	0.4	3.534	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	288	103	1524	0.189	288	0.2	2.914	A
B	273	271	1491	0.183	273	0.2	2.955	A
C	449	44	1381	0.325	449	0.5	3.862	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	288	103	1524	0.189	288	0.2	2.914	A
B	273	271	1491	0.183	273	0.2	2.956	A
C	449	44	1381	0.325	449	0.5	3.865	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	236	85	1535	0.153	236	0.2	2.769	A
B	223	221	1522	0.146	223	0.2	2.771	A
C	367	36	1385	0.265	367	0.4	3.537	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	197	71	1544	0.128	197	0.1	2.672	A
B	187	185	1545	0.121	187	0.1	2.652	A
C	307	30	1388	0.221	307	0.3	3.330	A

Existing Junction - 2033 Base Plus Proposed Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.99	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	121	Arm C

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	2033 Base Plus Proposed Dev	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		✓	470	100.000
B		✓	136	100.000
C		✓	534	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	27	443
	B	22	3	111
	C	355	176	3

Vehicle Mix

HV %s

	To			
		A	B	C
	A	0	0	2
	B	0	0	0
	C	1	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:30-16:45	A	354	361
	B	102	102
	C	402	405
16:45-17:00	A	423	430
	B	122	122
	C	480	483
17:00-17:15	A	517	527
	B	150	150
	C	588	592
17:15-17:30	A	517	527
	B	150	150
	C	588	592
17:30-17:45	A	423	430
	B	122	122
	C	480	483
17:45-18:00	A	354	361
	B	102	102
	C	402	405

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS
A	0.35	3.80	0.5	A
B	0.11	2.91	0.1	A
C	0.42	4.43	0.7	A

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	354	136	1505	0.235	353	0.3	3.122	A
B	102	335	1487	0.069	102	0.1	2.600	A
C	402	19	1405	0.286	400	0.4	3.576	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	423	163	1488	0.284	422	0.4	3.377	A
B	122	401	1444	0.085	122	0.1	2.723	A
C	480	22	1403	0.342	480	0.5	3.897	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	517	200	1466	0.353	517	0.5	3.792	A
B	150	490	1385	0.108	150	0.1	2.912	A
C	588	28	1400	0.420	587	0.7	4.423	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	517	200	1465	0.353	517	0.5	3.796	A
B	150	491	1385	0.108	150	0.1	2.913	A
C	588	28	1400	0.420	588	0.7	4.432	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	423	164	1488	0.284	423	0.4	3.384	A
B	122	401	1443	0.085	122	0.1	2.725	A
C	480	22	1403	0.342	481	0.5	3.907	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	354	137	1504	0.235	354	0.3	3.130	A
B	102	336	1486	0.069	102	0.1	2.602	A
C	402	19	1405	0.286	403	0.4	3.591	A