

Transport Assessment

Land off Elizabeth Street, Cheetham Hill



Change list

Ver:	Date:	Description of the change	Reviewed	Approved by
1	25/02/2022	Draft for Review	25/02/2022	NJR

Project Name:

Land off Elizabeth St, Cheetham Hill

Project Number:

65204495

Client:

Kier Property Ltd

Ver:

1

Date:

05/10/2021

Author:

Ian Bullard

Controlled by

Nigel Robson

Approved by

Document number

Document Reference:

TA-001

Table of contents

1.	Introduction	6
1.1	Background	6
1.2	Scoping.....	6
1.3	Report Structure	7
2.	Existing Conditions	8
2.1	The Site	8
2.2	Local Highway Network	9
2.2.1	Bridcam Street.....	9
2.2.2	Elizabeth Street	10
2.2.3	A6010 Queens Road / Elizabeth Street	10
2.2.4	A665 Cheetham Hill Road	11
2.3	Site Accessibility Review	12
2.3.1	Pedestrian Accessibility.....	12
2.3.2	Cycle Accessibility	13
2.3.3	Public Transport Accessibility.....	15
2.4	Background Traffic Data.....	17
2.5	Personal Injury Accident Record	18
3.	Transport Policy Review.....	21
3.1	Introduction	21
3.2	National Policy.....	21
3.2.1	National Planning Policy Framework (2021)	21
3.3	Regional Policy	22
3.3.1	Greater Manchester Transport Strategy 2040 (2021)	22
3.3.2	Greater Manchester Spatial Framework Publication Plan (2020)	22
3.4	Local Policy	22
3.4.1	Manchester Local Plan	22
3.5	Other Applicable Guidance	23
3.5.1	BREEAM UK New Construction (2018)	23
4.	Development Proposals	24
4.1	Development Description	24
4.2	Proposed Site Access and Internal Road Network	24
4.3	Servicing Strategy	25
4.4	Pedestrian and Cycle Facilities	25
4.5	Public Transport Provision	26
4.6	Parking Provision.....	26

4.6.1	Car Parking Spaces	26
4.6.2	Disabled Parking	27
4.6.3	Motorcycle Parking	27
4.6.4	Car Share Spaces	27
4.6.5	Cycle Parking	27
4.6.6	Electric Vehicle Provision	28
4.7	Elizabeth Street TRO.....	28
4.8	Footway Condition (Elizabeth Street).....	28
5.	Traffic Generation	30
5.1	Introduction	30
5.2	Trip Generation Analysis	30
5.3	Trip Distribution	32
5.4	Modal Split.....	33
6.	Forecast Traffic Flows	35
6.1	Introduction	35
6.2	Scope of Assessment.....	35
6.3	Background Traffic Flows	35
6.4	Assessment Years and Traffic Growth.....	36
6.5	Base Flows	36
6.6	Assessment Flows.....	36
7.	Junction Impact Assessment.....	37
7.1	Assessment Methodology	37
7.2	Elizabeth Street / Queens Road	37
7.3	Site Access	40
8.	Summary and Conclusions	41

1. Introduction

1.1 Background

This Transport Assessment (TA) has been prepared by Sweco, on behalf of Kier Property Ltd, to support the proposed demolition of existing unit and redevelopment of site for industrial and logistics uses (Classes B2 and B8) with ancillary office floorspace, including provision of revised access arrangements from Elizabeth Street and all associated works and landscaping (the Site).

The purpose of this TA is to set out the details of the scheme from a traffic and transport planning perspective. It presents the proposed access strategy and site layout, considers the sustainable transport characteristics of the development and the surrounding area, assesses the traffic generation and provides junction operational assessments for the agreed highway network of interest.

1.2 Scoping

The TA has been prepared in line with best practice and our experience of supporting similar development proposals. The scope of the TA and the associated Interim Travel Plan have been agreed with Manchester City Council (MCC) and Transport for Greater Manchester (TfGM). A copy of the agreed Scoping Statement is included as **Appendix A**.

The key aspects of the agreed scope of this assessment are as follows:

- The TA shall include a study of the background highway conditions in the vicinity of the Site, including its accessibility by non-car modes, a review of personal injury accidents over the last full 5 year period and the identification of background traffic flows for the agreed highway network of interest.
- Details of the proposed development proposals should be set out, including, the access proposals, servicing strategy and justification of the proposed parking provision in the context of prevailing policy guidance and operational requirements, including consideration for Electric Vehicle charging, disabled parking and cyclists.
- Trip generation shall be based on TRICS data for Industrial Units and trip distribution and mode share assumptions should be based on NOMIS travel to work data.

- Junction assessments shall be carried out where development traffic flows exceed 30 vehicles per hour through any junction.
- The proposed site access will be assessed to demonstrate its suitability for the quantum of development proposed.
- Assessment scenarios to be considered are the development opening year and opening plus 5 years. TEMPRO growth factors will be applied to account for committed development and background traffic growth.

In addition to the scope identified in liaison with the Authorities, this TA has been prepared in line with BREEAM specific guidance. As such it includes a review of amenities within a 500m walking distance from the Site and a calculation of the public transport Accessibility Index. A BREEAM compliant Interim Travel Plan (ITP) has also been prepared and is provided under separate cover.

1.3 Report Structure

Following this introduction, the report is structured as follows:

- **Chapter 2** provides a baseline description of the site location and the surrounding highway network. Consideration is also given to the historical Personal Injury Accident record for the highway network of interest and the accessibility of the site by non-car modes;
- **Chapter 3** presents a review of the prevailing transport planning policy and other applicable guidance;
- **Chapter 4** sets out the detail of the proposed development, including a description of the proposal, the access strategy and future parking provision;
- **Chapter 5** assesses the quantum and composition of traffic likely to be generated by the proposals and its assignment to the highway network;
- **Chapter 6** examines the likely impact of the traffic generated by the proposals on the local highway network;
- **Chapter 7** details the results of the operational analyses of junctions forming the agreed highway network of interest;
- **Chapter 8** summarises the report and provides conclusions.

2. Existing Conditions

2.1 The Site

The Site (which measures 1.98 hectares) is located to the south of Elizabeth Street, in Cheetham Hill, approximately 1.5 km to the north of Manchester city centre. The majority of the Site is currently derelict brownfield land which includes an existing, vacant commercial unit along the north-east frontage to Elizabeth Street. The location of the Site is shown on **Figure 2.1**.

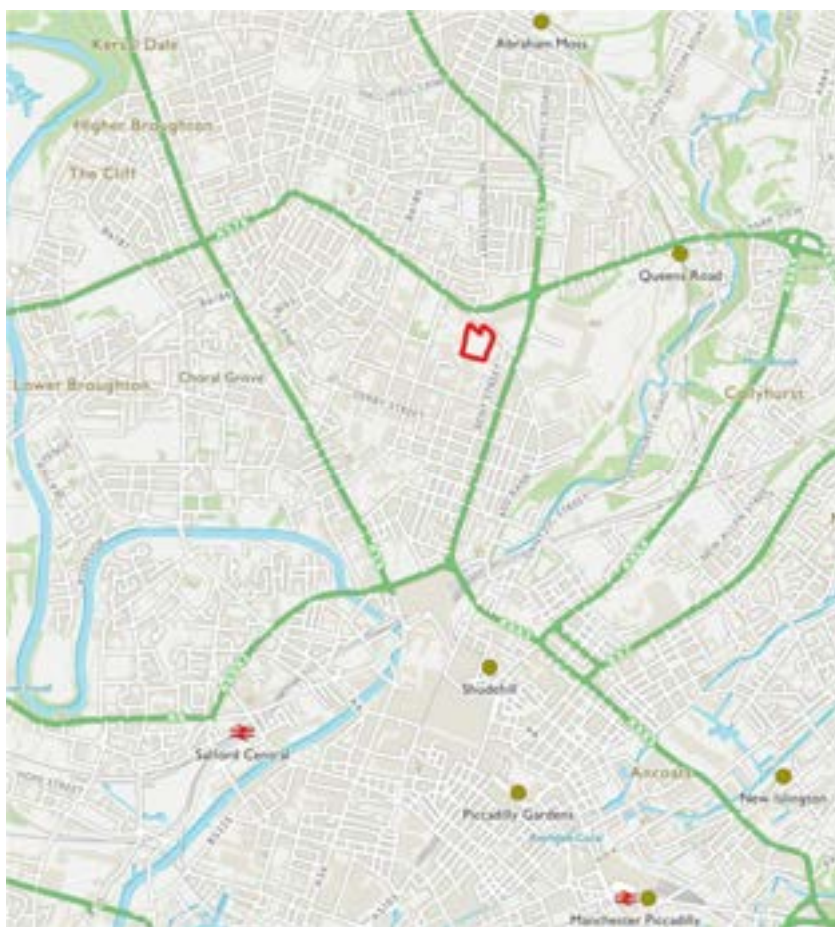


Figure 2.1 - Site Location Plan - OS Data © Crown copyright and database rights 2021

Sweco | Transport Assessment

Project Number: 65204495

Date: 05/10/2021

Ver: 1

Document Reference: \\sweco.se\gb\lids01\project\6535\65204495_19-21_elizabeth_street\000\04 deliverables management\reports & presentations\reports\elizabeth st - ta001 - 14jan21.docx

The Site is currently accessed via Bridcam Street, which is an unadopted private road. The area within the application boundary is wholly private land and in a derelict condition except for building No 19-21 Elizabeth Street which is to be demolished as part of the development proposals. There is no public access to the Site and no Public Rights of Way (PRoW).

The Site is irregular in shape and is surrounded by other commercial and employment uses to the north-east, south-east and south-west, with a residential apartment block (St David's Court) to the north-east. Further to the north lie the residential areas of Cheetham Hill. Manchester Fort Shopping Park, one of the City's largest out of the centre retail destinations is located 250m to the east on Cheetham Hill Road, which connects the Site with the city centre.

2.2 Local Highway Network

2.2.1 Bridcam Street

Bridcam Street provides access to the Site via an unformed simple priority arrangement with Elizabeth. The existing alignment of Bridcam Street is at an acute angle from Elizabeth Street and the surface is in very poor condition.



Figure 2.2 – Bridcam Street / Elizabeth Street Junction

Bridcam Street also provides access to an area used for servicing to the rear of the adjacent property 23a, signed as "B. Sternberg & Sons Ltd". The area is gated and also marked as a 'fire exit'. Our client has liaised with the property owners regarding the retention of their access and servicing to the rear of the building and this forms part of the proposed upgrade to Bridcam Street and its junction with Elizabeth Street.

The property owners have confirmed that they receive deliveries of 40ft containers approximately 2 to 3 times per month and these are unloaded in the service area to the rear of the building. There is

currently insufficient room for an articulated HGV to turn within the existing extent of Bridcam Street and then reverse into the service area and it is therefore assumed that large container vehicles reverse in from Elizabeth Street. The proposed improvements will remove the need for this manoeuvre providing a road safety benefit on Elizabeth Street.

A review of the highway adoption plans supplied by MCC has confirmed that Bridcam Street is unadopted. The MCC plan showing the extent of the publicly adopted highway is included as **Appendix B**.

2.2.2 Elizabeth Street

Elizabeth Street runs approximately north-west to south-east along the Site frontage. The road is 280m in length and connects to the A665 Cheetham Hill Road in the east via a four-arm signalised junction, which also incorporates North Street. The junction includes controlled pedestrian crossings across the segregated left-turn lane of Elizabeth Street and across the northern arm of Cheetham Hill Road. An uncontrolled pedestrian crossing is in place across the main Elizabeth Street arm. Advanced cycle stop lines are provided on all arms of the junction.

To the north-west, Elizabeth Street forms the minor arm of a priority controlled junction with Queens Road and includes a right-turn lane on Queens Road. The Queens Road junction is located in close proximity to Larch Gardens on the opposite frontage and as such could be considered to operate as a staggered crossroads arrangement.

Elizabeth Street provides a direct access into the Cheetham Hill Retail Park via two priority controlled junctions. The retail park customer access is located 70m to the south-east of the current Bridcam Street junction and incorporates a right-turn lane on Elizabeth Street. The service yard access junction is located 50m to the north-west of Bridcam Street.

Footways are provided on both frontages with dropped crossings provided at each junction/private access. Tactile paving is only present at the retail park junctions, and the junctions of Queens Road and Cheetham Hill Road. The road is subject to a 30mph speed limit and is street lit. The current condition of the footway on the southern frontage of Elizabeth Street adjacent to the Site is noted as being in a poor state of repair.

A "No Waiting at any Time" TRO is in force with double yellow lines along the full extent of the northern frontage of Elizabeth Street and on the southern frontage between Cheetham Hill Road and Bent Street. A single yellow line is marked on the southern frontage from Queens Road as far as the frontage of the adjacent property 23a, however no accompanying plates (signs) are evident which suggests that the "Limited Waiting" TRO may no longer be in force.

2.2.3 A6010 Queens Road / Elizabeth Street

The A6010 forms part of a major radial route around Manchester city centre and, is named as Queens Road to the east of the Elizabeth

Street / A6010 Queens Road junction; continuing as Elizabeth Street to the west of the junction.

To the east of the Elizabeth Street junction, the road continues to a form a four-arm signalised junction with Cheetham Hill Road with left turns onto Cheetham Hill Road (southbound) prohibited. As a result, vehicles wishing to travel into the city from the west are required to utilise Elizabeth Street.

Right-turn ghost islands are provided on the A6010 for traffic entering Elizabeth Street and Larch Gardens. The ghost island also accommodates a pedestrian central refuge incorporating dropped kerbs and tactile paving.

A “No Waiting at any Time” TRO is in force on both frontages. Additionally, there are “No Loading” restrictions during the evening peak on Monday to Friday (16:00-1830) and during the AM Peak on a Saturday (07:30-09:30).

Bus stops are located in close proximity to the Cheetham Hill Road junction and the Elizabeth Street junction (westbound only), although no bus routes currently service these and each is marked as “Not in Use”.

2.2.4 A665 Cheetham Hill Road

Cheetham Hill Road provides a predominately north-south connection with the Inner Ring Road, the radial A6010 route and the A576 Bury Old Road, which provides an onward connection to the M60 at Junction 19. As such, the road forms part of a major arterial link from the city centre to the motorway network and beyond.

In the vicinity of Elizabeth Street and the A6010 Queens Road, Cheetham Hill Road comprises 2 ahead lanes in each direction with dedicated turning lanes providing access to the Manchester Fort retail park signalised junction and dedicated right turn lanes in both directions at the A6010 Queens Road signalised junction. The right-turn into Elizabeth Street for southbound traffic is prohibited and as such traffic from the north and the east is required to utilise Queens Road to access Elizabeth Street.

Advanced cycle stop lines are provided on all approach arms to the three signalised junctions and on-road cycle lanes are provided in both directions between Queens Road and Elizabeth Street. A section of cycle lane is set back from the northbound carriageway which offers northbound cyclists additional protection through the Manchester Fort access junction.

Controlled pedestrian crossings are provided across Cheetham Hill Road at Elizabeth Street, the Manchester Fort access and the A6010 junctions.

A “No Waiting at any Time” TRO is in force on both frontages of Cheetham Hill Road and there are also “No Loading” restrictions during the evening peak on Monday to Friday (16:00-1830) and during the AM Peak on a Saturday (07:30-09:30).

2.3 Site Accessibility Review

2.3.1 Pedestrian Accessibility

Reference to Table 3.2 of the IHT document, 'Providing for Journeys on Foot (2000)', suggests that the preferred maximum walking distance to common facilities is 1.2 km and up to 2 km for commuting.

BREEAM guidelines indicate that the site should be within 500m of a range of local amenities. **Figure 2.3** illustrates the location of the amenities that are closest to the site, which includes two supermarkets, various food outlets, two pharmacies, St Chad's Primary School and an NHS Primary Care Centre. All the amenities can be reached by foot via a safe pedestrian route and are well within the 500m catchment area.

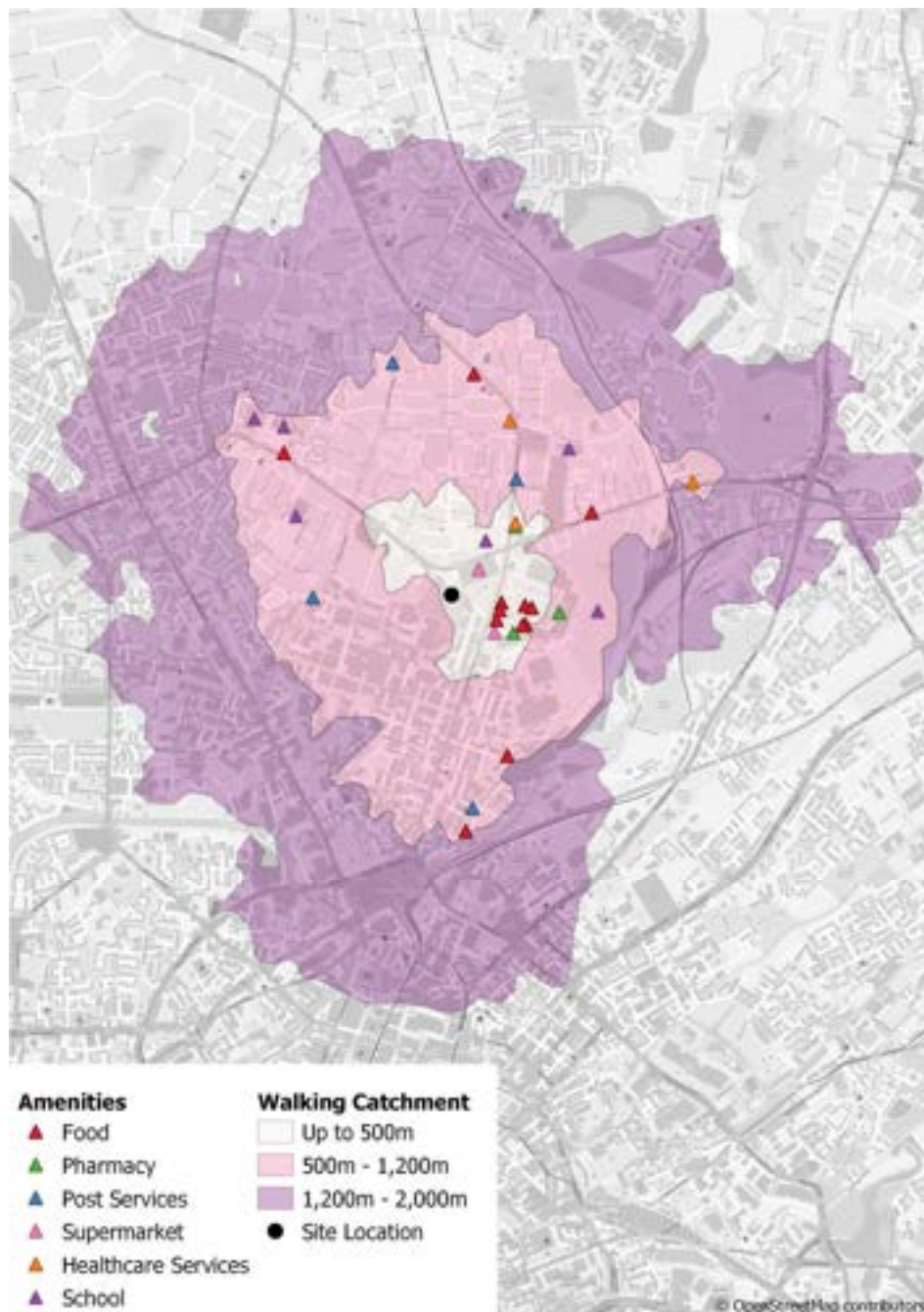


Figure 2.3 – Walking catchment

2.3.2 Cycle Accessibility

It is widely recognised that cycling is a potential substitute for short car trips, particularly those under 5 miles (8 km) and can form part of a longer journey by public transport.

Applying this criteria, **Figure 2.4** shows the area accessible by bike. At its furthest most reaches, this includes Middleton and Whitefield to the north; Swinton and Eccles to the west; Levenshulme and Chorlton-cum-Hardy to the south; and Droylsden to the east.

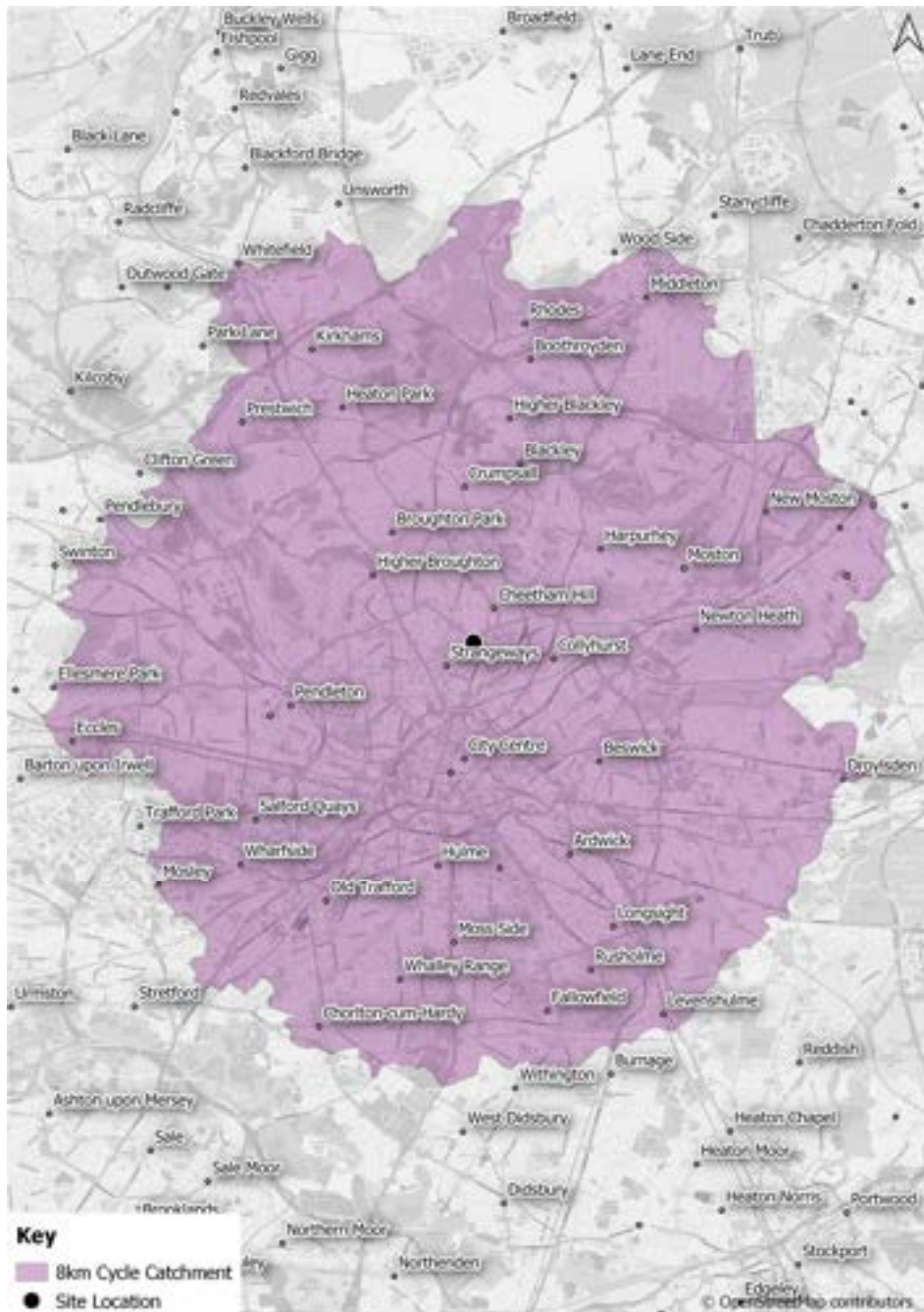


Figure 2.4 – Cycle catchment

2.3.3 Public Transport Accessibility

Bus

Table 4 of the Chartered Institution of Highways and Transportation (CIHT) document 'Buses in Urban Developments (2018)' suggests a maximum recommended walking distance of 500m to a bus stop within a core bus corridor which provides two or more high frequency services; and 300m to a bus stop with less frequent routes.

The accessible bus stops, measured from the centre of the Site, are shown in **Figure 2.5**.

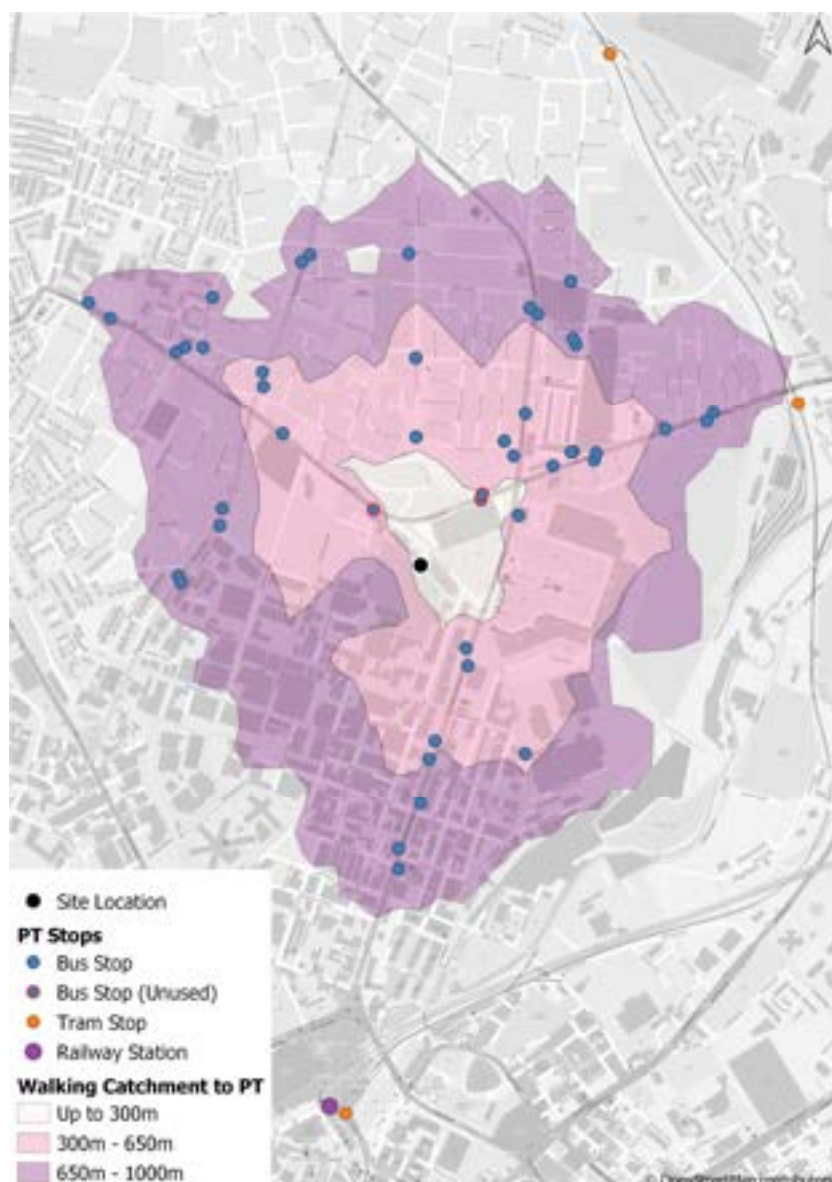


Figure 2.5 – Public Transport nodes accessible on foot

The closest active bus stops to the site are located on Cheetham Hill Road, approximately 350m walking distance from the centre of the Site. The stops are serviced by bus routes 135 and 41 CrossCity operated by Go North-West.

Additional bus stops are located on Queens Road, to the east of Cheetham Hill Road. The eastbound and westbound stops are approximately 500 and 600m walking distance from the centre of the site, respectively. These stops provide access to the 151 service operated by Little Gem.

Bus stops are also located on Waterloo Road, to the west of the Site. The stops are located 600m walking distance from the centre of the Site and provide access to the No 59 service operated by First.

The 135 route runs between Manchester Piccadilly and Bury Interchange via Cheetham Hill, Heaton Park and Whitefield. The service runs every 10 minutes daily with a slightly reduced frequency prior to 6am and after 8pm during the week.

The 41 route runs between Sale and Middleton via West Didsbury, Rusholme, Piccadilly, Shudehill Interchange, Victoria Station, Cheetham Hill and Bowker Vale. A full service runs Monday to Saturday every 15 minutes, with every other bus (at 30 minutes intervals) terminating at North Manchester General Hospital rather than continuing to Middleton. Service frequency is halved on Sundays.

The 151 route runs between Crumpsall and Ashton under Lyne, via Cheetham Hill, Collyhurst, Failsworth and Hathershaw. The service runs hourly Monday to Saturday.

The 59 service runs between Piccadilly Gardens and Oldham Mumps Bridge. The service runs every 10 minutes daily with a reduced frequency service on a Sundays.

The bus stops located on Cheetham Hill Road are within a core bus corridor with high frequency services to a range of destinations. The walking distance of 350m from the site is therefore well within the recommended maximum suggested by CIHT.

The bus stops located on Waterloo Road are outside of the CIHT recommended walking parameters. Two bus stops located on Queens Road offer access to only 1 low frequency service. Therefore the walking distance is also outside the recommended maximum 300m noted by CIHT. However, given the additional destinations served by these stops, it is considered that future Site occupants would still benefit from this service.

Rail

The Chartered Institution of Highways & Transportation (CIHT) document 'Planning for Walking' (2015) suggests that people will walk up to 800m to get to a railway station, which reflects the greater perceived quality or importance of rail services.

The closest rail/tram stops are shown in **Figure 2.5** above.

The closest railway station to the Site is Victoria which is approximately 1.6km walking distance resulting in a 20 minute walk. Whilst it is likely that future employees at the Site may choose to utilise the railway network as the main part of their journey, this is likely to be in combination with a bus journey for the “last mile”.

The closest Metrolink stop is located on Queens Road, approximately 1.1km walking distance from the site resulting in a 15 minute walk. The stop serves the route from Bury, Altrincham and Piccadilly and also serves Shudehill and Victoria interchanges. Whilst this, is outside the CIHT recommended maximum walking distance to a rail facility, based on the frequency of service and extensive network of stops it is expected that the Metrolink is likely to be an attractive mode of transport for travel to work.

BREEAM Accessibility Index

BREEAM guidelines indicate that a compliant public transport node includes any bus stop within 650m and any railway station within 1,000m of the assessed building's main entrance, measured via a safe pedestrian route. **Figure 2.5** shows the location of compliant public transport nodes in the vicinity of the Site. Given that the development comprises multiple buildings, the walking distance has been measured from the centre of the Site. The compliant facilities include bus stops on Cheetham Hill Road, Queens Road and Waterloo Road.

Based on the proximity to the identified nodes, an assessment using the BREEAM Accessibility Index calculator tool has confirmed that the site has an AI rating of 5.10.

2.4 Background Traffic Data

Traffic surveys have been undertaken at a number of locations during the week commencing 15th November 2021 to provide background traffic data.

Classified turning count data were obtained to inform the Junction Impact Assessments detailed in **Section 7**; and the obtained data are presented in **Section 6.3**.

Automatic Traffic Count (ATC) data were collected over a 7 day period between the 15th and 21st of November 2021 on Elizabeth Street, adjacent to its junction with Bridcam Street.

Figure 2.6 shows the results of the ATC surveys as Annual Average Daily Traffic (AADT) flows. The data show that the peak period for traffic flows on Elizabeth Street is between 1300 to 1600 hours.

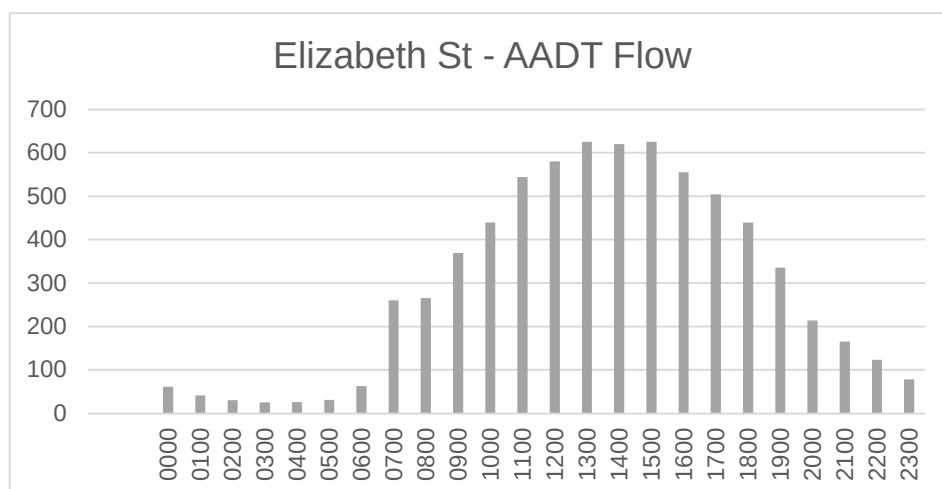


Figure 2.6 – 2021 AADT Flows

Speed data were also collected on Elizabeth Street adjacent to the Bridcam Street junction. The data collection was undertaken on two separate occasions during Wednesday 17th and Friday 19th of November 2021, with 100 measurements taken in free flow conditions on each day in compliance with the Department for Transport's Standard TA22/81.

The survey identified that the 85th percentile speeds are below the 30mph speed limit in both directions. **Table 2.1** summarises the key findings.

Direction	Wednesday		Friday		Average	
	Average	85 th %ile	Average	85 th %ile	Average	85 th %ile
Westbound	21	25	22	27	22	26
Eastbound	23	26	23	28	23	27

Table 2.1 – Summary of speed survey

2.5 Personal Injury Accident Record

Personal injury accident data has been obtained from TfGM for the 5 year period of May 2016 to April 2021 inclusive. The data indicate that there were a total of 26 injury accidents on the adjacent highway network during that period. There were 4 accidents recorded as Serious, 22 recorded as Slight and no Fatalities.

The respective locations of these collisions are shown in **Figure 2.7** with Slight Injury Collisions marked as triangles and Serious Injury Collisions marked as circles. The Traffic Accident Data report is provided as **Appendix C**.

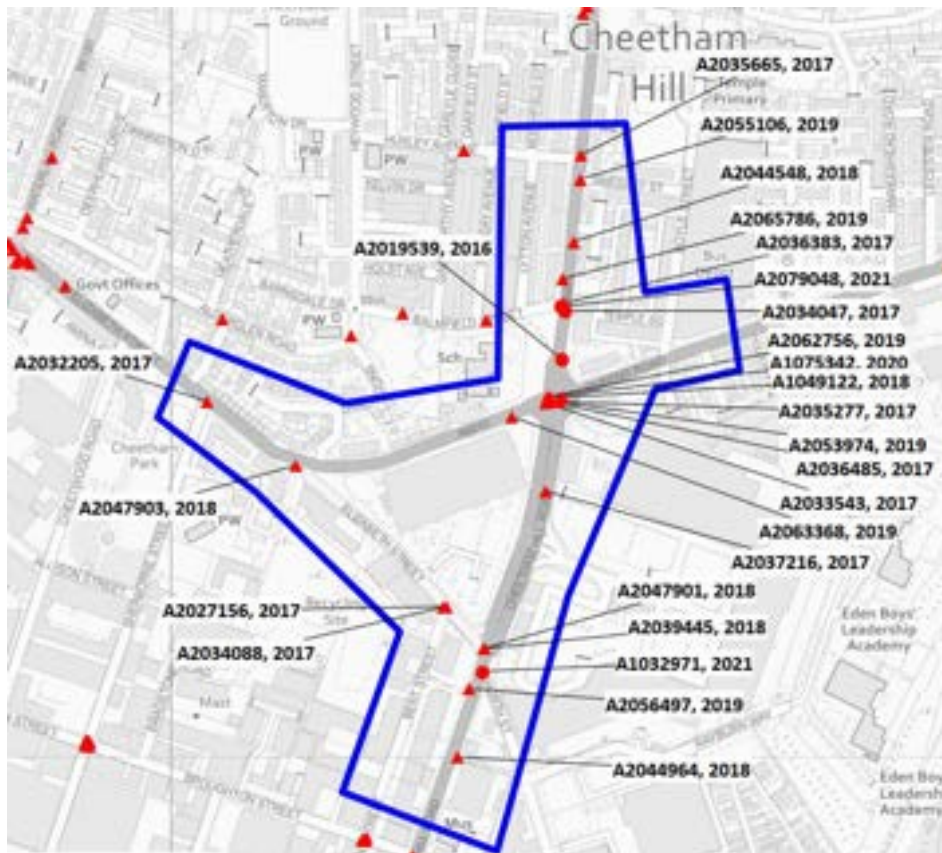


Figure 2.7 – Accident Location Plan © Crown copyright and database rights 2021
Ordnance Survey 100022610

From **Figure 2.7**, it can be seen that the majority of collisions are distributed relatively evenly across the network.

However, a cluster of 9 injury accidents, including 1 Serious, are located at the Queens Road / Cheetham Hill Road signalised junction. The Serious injury was a pedestrian hit by a car whilst crossing Cheetham Hill Road outside of the existing crossing facilities. A Slight injury was also sustained by a cyclist jumping the red light and being hit by a car. The remaining 7 Slight injury accidents all involved vehicle shunts from either rear end collisions, or drivers jumping the red lights.

A smaller cluster of 4 injury accidents, including 1 Serious, are located at the Elizabeth Street / Cheetham Hill Road signalised junction. The Serious injury accident was as a result of a stolen motorcycle being pursued by the Police and colliding head on with a car. The rider and pillion passenger both received serious injuries. The remaining 3 Slight injury accidents were vehicle shunts typical of an urban signalised junction.

On Elizabeth Street 3 Slight injury accidents are recorded. 2 accidents occurred at its junction with Bent Street, resulting from cars turning across the path of a cyclist and an oncoming car, respectively. The third accident occurred at the junction with Queens Road when a speeding

car failed to give way resulting in Slight injuries to the driver and 3 child passengers.

The **Table 2.2** summarises the injury statistics for each road user class.

Type	Slight	Serious	Total
Car Driver	20	0	20
Car Passenger	13	0	13
Motorcycle Rider	0	2	2
Motorcycle Passenger	0	1	1
Pedestrian	4	2	6
Cyclist	3	0	3
TOTAL	40	5	45

Table 2.2 - Injury Collision Summary

The type and frequency of accidents are typical of what could be expected within a busy urban setting. The distribution of locations and nature of the attributable factors would suggest that there are no specific road safety concerns with the highway network in general. Of particular relevance to this TA is the good road safety record on Elizabeth Street

3. Transport Policy Review

3.1 Introduction

The following section details the findings of a review of the national, regional and local transport planning policies which are applicable to the Site.

3.2 National Policy

3.2.1 National Planning Policy Framework (2021)

The National Planning Policy Framework (NPPF) sets out the Government's planning policy and its expectations in terms of the application of this policy. The purpose of NPPF is to achieve sustainable development, with a presumption that development should be allowed to proceed without delay if it meets the criteria under the roles of delivering economic, social and environmental objectives. In addition, NPPF states that proposals according with an up to date development plan should also be approved.

At its core, NPPF requires the planning system to:

"...actively manage patterns of growth to make fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable."

Furthermore, paragraph 110 states that decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all users; and
- Improvements can be undertaken within the transport network that cost- effectively limits the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Paragraph 113 states that a development which generate a significant amount of traffic movements should be supported by a Travel Plan.

3.3 Regional Policy

3.3.1 Greater Manchester Transport Strategy 2040 (2021)

The Regional Centre is a major driver of economic growth in Greater Manchester and will continue to be in the future. As such, the Strategy aims to increase the number of sustainable transport trips by improving public transport access to the Regional Centre and encouraging active travel for people who live and work in the area.

The Strategy will support development of brownfield sites into mixed-use and housing developments. Proposals should ensure provision of quality walking and cycling infrastructure, appropriate parking provision, adequate servicing arrangements and other interventions supporting sustainable travel, including car clubs.

3.3.2 Greater Manchester Spatial Framework Publication Plan (2020)

A draft of the Greater Manchester Spatial Framework was published in October 2020 following a number of consultations with stakeholders. It sets out the development plans for the borough up to 2037. The plan identifies the amount of new housing, office and industrial development across Greater Manchester, site allocations for employment and housing, and supports the delivery of key infrastructure.

3.4 Local Policy

3.4.1 Manchester Local Plan

The Manchester Local Plan comprises the Core Strategy (2012-2027) and the Extant Unitary Development Plan Policies (1995). MCC is currently in the early stages of developing a new Local Plan. A formal consultation was undertaken in early 2020 on the Local Plan 'Issues'. The key policies relevant to the proposed development are outlined below.

Core Strategy

Policy EC3: The Regional Centre

The proposed development is located within the Regional Centre. Employment development, including offices and other commercial development, and large scale leisure developments are appropriate within the Regional Centre.

Policy EC4: North Manchester

The proposed development falls within the boundary of North Manchester, where it is expected that approximately 14ha of employment land will be provided.

The district centre of Cheetham is one of the key development areas. There are opportunities for mixed use proposals for small businesses providing local employment opportunities.

Policy CC5: Transport

The Transport Strategy for Manchester City Centre will be delivered to ensure that transport is managed in a way which supports the projected growth of the City Centre.

Developers need to ensure that developments are accessible to all users by sustainable transport, in particular during the peak times. Proposals that provide improvements to pedestrian safety, air quality and public realm, will be supported. Adequate parking provision, including cycle parking, will need to be provided in accordance with the parking standards provided in Appendix B of the Core Strategy.

Extant UDP Policies

Policy CC10:

The Council will encourage the continued high level of economic activity in the lower Cheetham Hill Road areas. Proposals will be supported if they provide sufficient parking and servicing for their own needs, subject to a proper balance of other planning requirements contained in policies expressed elsewhere in the Local Plan.

3.5 Other Applicable Guidance

3.5.1 BREEAM UK New Construction (2018)

The BREEAM UK New Construction 2018 scheme can be used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages.

The transport category includes two assessment criteria:

- Tra 01 Transport assessment and travel plan (2 credits)
- Tra 02 Sustainable transport measures (10 credits)

The Transport Assessment shall cover current and future travel patterns, existing pedestrian and cycling infrastructure, existing amenities in the vicinity, and accessibility assessment. The Travel Plan shall consider measures such as provision of electric vehicle charging stations, cycle storage, pedestrian and cycle facilities, and car parking restrictions.

Tra 02 relates to the sustainable transport measures implemented at the proposed development, and the proximity to amenities and quality public transport services. Credits are awarded according to the existing Accessible Index (AI) of the project, calculated for Tra 01, and the total number of points achieved for the implemented measures.

4. Development Proposals

4.1 Development Description

The application seeks planning permission for the erection of new and replacement industrial and logistics (Class B2 & B8) warehouse units, including the provision of revised access arrangements from Elizabeth Street and all associated works and landscaping.

The proposed development comprises approximately 8,100 sq. m (GIA) of Class B2/ B8 floorspace (with ancillary office space) across nine units of varying sizes, along with areas of hardstanding, turning circles for delivery vehicles, dedicated employee and visitor car parking, electricity substation, landscaping and the provision of a revised access arrangement from Elizabeth Street.

The envisaged development opening year is 2023. The Site masterplan is shown in the Fletcher Rae plan included as **Appendix D**.

4.2 Proposed Site Access and Internal Road Network

Access to the Site will be provided by a revision to the existing Bridcam Street / Elizabeth Street junction to form an adoptable standard simple priority junction. This principally comprises realigning the existing unformed access to provide a perpendicular approach to a new simple priority junction with Elizabeth Street. A plan showing the junction layout is included as **Appendix E**.

The junction will provide access to the Site for all car and HGV traffic as well as pedestrians and cyclists.

As agreed with MCC, the proposed junction comprises a 2m central island to assist pedestrians crossing on the southern frontage of Elizabeth Street. Dropped crossings and tactile paving are also provided.

Visibility at the junction is provided in accordance with Manual for Streets (MfS) guidance for a 30 mph road, namely an X-distance of 2.4 metres and a Y-distance of 43 metres.

The junction will be offered for adoption as part of a S278 Agreement. The access road (beyond the pedestrian refuge) and the internal site infrastructure will remain private.

A Stage 1 Road Safety Audit (RSA) has been undertaken to confirm the appropriateness of the form and location of the junction, based on background traffic conditions and its intended use. The RSA report and designer's response is included as **Appendix F**.

The Site will be secured with gates set back approximately 36m from the Elizabeth Street channel line. Whilst the gates will be open during normal working hours, this distance ensures that an HGV would not encroach onto Elizabeth Street in the event that a vehicle had to wait for the gates to be opened.

Individual access to each unit within the Site is provided by a central spine road. Although the spine road will remain private, it has been designed to accommodate the movement of the largest anticipated vehicles (a 16.5m articulated HGV), with a carriageway width of 7.3m. Visibility at each unit access onto the spine road has been provided for a 20 mph road, namely an X-distance of 2.4 metres and a Y-distance of 25 metres.

4.3 Servicing Strategy

The Site will accommodate units which are serviced by either maximum length (16.5m) articulated HGVs or large vans, dependent on the final occupiers. The internal road network has been designed to accommodate the two-way movement of maximum length HGVs. A plan showing the swept paths of HGVs and large vans accessing the individual service yards is included as **Appendix G**.

The Site layout ensures that access to the rear of the adjacent property (23a Elizabeth Street) is maintained for a maximum length articulated HGV. Vehicles will reverse into the service area from the main spine road, which removes the current need to undertake a reversing manoeuvre from Elizabeth Street. A plan showing the swept path of HGVs accessing the service area for 23a is included as **Appendix H**.

As can be seen from the Plan included as **Appendix D**, a substation is located adjacent to Unit 1. A plan showing the swept path of a large rigid HGV is included as **Appendix I** to demonstrate that a suitable vehicle can access and replace the substation equipment in the unlikely event that this were required. Typically, the substation would be periodically serviced from a small van which will to utilise one of the adjacent parking spaces.

4.4 Pedestrian and Cycle Facilities

Cycle parking will be provided as detailed in *Section 4.6*. **Error! Reference source not found.** below. Covered cycle shelters are provided on paved, non-traffic areas at key locations throughout the Site as shown on the masterplan included as **Appendix D**. Footways provide safe pedestrian routes from each parking area and cycle store

into the individual units, and along the main spine road of the Site. Provision for lockers and changing facilities are provided within each building.

There are no stepped areas within the site and all crossing points will comprise dropped kerbs to ensure easy access for all users.

As outlined in *Section 4.2*, the improved Bridcam Street / Elizabeth St junction includes a refuge to assist pedestrians crossing the site access. Additionally, the footway on the southern frontage of Elizabeth Street will be improved as part of the S278 works, as detailed in *Section 4.8*.

4.5 Public Transport Provision

As noted in *Section 0*, the Site is well located well to take advantage of high frequency quality public transport services, providing direct and onward routes to surrounding districts.

The proposals do not include any additional provision to assist with access to public transport.

4.6 Parking Provision

Car parking for the proposed development is provided in accordance with the standards set out in the MCC Local Development Framework (2012) Core Strategy. The applicable standards relate to sites that are classed as located within District Centres. The relevant parking standards are included as **Appendix J**.

The proposals comprise two land-use classes (general industry - B2 and storage & distribution - B8). Office accommodation in each unit is ancillary and has therefore been excluded from the calculation of parking provision. **Table 4.** sets out the applicable standards.

Class	Description	Car Parking (per sqm)	Disabled Parking (% of total)	Cycle Parking (per sqm GFA)
B2	General Industry	1:60	Individual bays for each disabled employee plus 2 bays or 5% of total capacity (whichever is greater)	1:450
B8	Storage and Distribution	1:100		1:850

Table 4.1 - Parking Standards

4.6.1 Car Parking Spaces

It can be seen from **Table 4.** that B2 affords the greatest potential car parking capacity. Although the exact split of the development quantum is unknown at this stage, if the development comprised 100% B2, it would result in a maximum parking allowance of 135 spaces. If it were

100% B8, this would result in 81 spaces. The proposals include for a total of **86 parking spaces** which reflects the proposed mixed quantum and is considered to be an appropriate level for the expected parking demand once occupied, based on the developers experience with other similar developments.

Providing parking below the maximum allowable accords well with the promotion of other, more sustainable modes of travel to the private car. Furthermore, it is noted that the provision of waiting restrictions on Elizabeth Street will ensure that parking does not impede on the operation or road safety on the adjacent public highway.

4.6.2 Disabled Parking

The standards state that provision for disabled parking spaces should be provided on a 1 to 1 basis for currently known disabled employees, plus either 2 spaces or 5% of total capacity, whichever is greater. As the number of disabled employees cannot be identified at this stage, the proposal is to provide **9 disabled parking spaces** which is well above the 5% requirement. If a need for additional spaces is identified, standard car parking spaces can be converted as required. The spaces will be located in the most accessible location relative to the entrances to the units.

4.6.3 Motorcycle Parking

No parking standards are provided for motorcycles. As detailed in *Section 5.4*, motorcycle trips are only expected to make up around 0.4% of total traffic movements to the Site and these will be expected to utilise the standard car parking spaces, as required. The introduction of designated motorcycle parking will be considered if the demand increases such that it is needed.

4.6.4 Car Share Spaces

A total of **4 Car Share spaces** will be marked out for exclusive use by employees who have chosen to car share. These spaces are distributed throughout the site and are located close to the building access points for additional convenience. This represents 5% of the total car parking provision, when excluding disabled parking provision.

4.6.5 Cycle Parking

From **Table 4.**, it can be seen that B2 results in the greatest cycle parking requirements. A development comprising 100% B2 would result in a minimum requirement for 19 cycle spaces.

The proposals include a total of **50 cycle parking spaces**, provided across the site, which has been derived using BREEAM cycle parking standards.

The cycle parking provision will be covered shelters suitable for long stay cycle parking.

This is significantly higher than the minimum MCC requirement. Once the Site is operational, cycle usage will be monitored to identify if further provision is needed.

4.6.6 Electric Vehicle Provision

MCC and TfGM currently have no formal adopted policies which set out the requirements for electric vehicle parking / charging facilities in private developments. The “Electric Vehicle Charging Infrastructure Strategy” which has been prepared to support the Greater Manchester Transport Strategy 2040 summarises that the intention is **not** to encourage commuting by electric vehicle by provision of workplace charging facilities, especially in areas that experience peak time congestion.

However, in scoping discussions, MCC has requested that 20% of parking spaces should have active EV charging provision utilising capable charging stations across two adjacent spaces. It was also requested that the remainder of the parking stock has ducting in place to enable the installation of EV charging in the future as demand increases.

The chargers will be appropriate to provide sufficient charging capacity for employees to charge a vehicle during the working day. The same infrastructure is also considered appropriate for the charging of light commercial vehicles overnight. This is based on research which shows that major car manufactures are using the same EV platforms across their electric ranges and their light commercial vehicle offerings.

Given the above, **18 EV Ready parking spaces** are proposed as part of the proposals which accounts for 20% of total provision.

4.7 Elizabeth Street TRO

It was noted by MCC during the scoping discussions that no waiting or loading restrictions should be provided on the southern frontage of Elizabeth Street to ensure on-street parking does not impact the free flow of traffic or pose a road safety concern. As such, it is proposed that a No Waiting at any Time (double yellow lines) TRO is implemented on the southern frontage of Elizabeth Street, from its junction with Queens Road to its junction with Bent Street.

The extent of the above TRO will ensure that the full extent of Elizabeth Street incorporates waiting restrictions as requested by MCC.

4.8 Footway Condition (Elizabeth Street)

The current condition of the footway on the southern frontage of Elizabeth Street is noted as being in a poor state. It is proposed that the S278 works comprising the implementation of the revised Bridcam Street junction will be extended along the site frontage to cover the resurfacing of the footway with tarmacadam and replacement of damaged / fallen kerbs.

The redundant vehicle access in front of the building to be demolished (19 – 21 Elizabeth Street) will be removed and the footway reinstated as part of these works. A plan showing the proposed site access and extent of footway remediation is included as **Appendix E**.

5. Traffic Generation

5.1 Introduction

This chapter describes the methodology used to derive the forecast traffic flows at the junctions comprising the highway network of interest. The methodology has been agreed with MCC and TfGM as part of the scoping study.

5.2 Trip Generation Analysis

Trip rates have been derived from the TRICS database for Industrial Units (excluding Greater London, Scotland and Ireland). The TRICS output file is included as **Appendix K**.

The TRICS classification for Industrial Units best reflects the type of occupiers that are envisaged by the applicant following an initial Local Demand Study, which has identified requirements for small scale manufacturing, storage hubs, trade counters and depots.

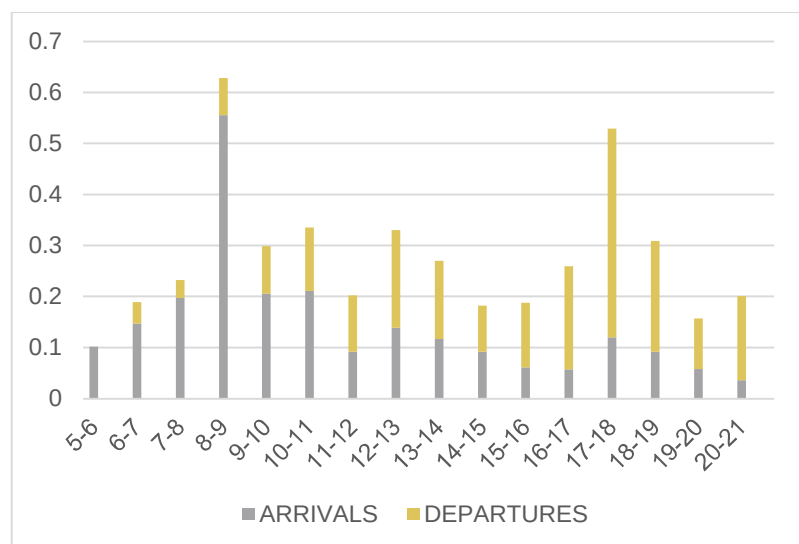


Figure 5.1 – Trip Rate Profile

The profile of arrivals and departures shows that the highest hourly vehicle trips occur during 0800 to 0900 hours and 1700 to 1800 hours in the AM and PM respectively. With regards to the identified peak period for background traffic observed on Elizabeth Street (1300 to 1600 hours), the highest corresponding trips for the Site occur between 1300 to 1400 hours.

The Vehicle Trip Rates per 100m² of GIA, and Vehicle Trips for these time periods (based on the proposed 8,118m² GIA) are set out below.

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	0.555	0.073	0.628
13:00-14:00	0.117	0.153	0.270
17:00-18:00	0.120	0.409	0.529
Daily Trip Rates:	2.281	2.131	4.412
Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	45	6	51
13:00-14:00	9	12	21
17:00-18:00	10	33	43
Daily Trip Totals:	185	173	358

Table 5.1 – Vehicle Trip Estimates

Within the above total vehicle trip demand, the Trip Rates and Trips profile for commercial vehicles has been derived from the TRICS data for OGVs and is set out below.

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	0.052	0.028	0.080
13:00-14:00	0.038	0.026	0.064
17:00-18:00	0.007	0.004	0.011
Daily Trip Rates:	0.428	0.345	0.773
Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	4	2	6
13:00-14:00	3	2	5
17:00-18:00	1	0	1
Daily Trip Rates:	35	28	63

Table 5.2 – Commercial Vehicle Trip Estimates

In order to estimate the multi-modal travel demand for employees using modes of travel other than the private car, People Trip Rates per 100m² of GIA, and People Trips (based on the proposed 8,118m² GIA) are set out below for the AM and PM peak periods for employee trip generation.

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	0.694	0.080	0.774
17:00-18:00	0.365	0.597	0.962
Daily Trip Rates:	4.325	4.525	8.850

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	56	6	62
17:00-18:00	30	48	78
Daily Trip Rates:	350	366	716

Table 5.3 – People Trip Estimates

5.3 Trip Distribution

As agreed with MCC / TfGM, a trip distribution has been derived based on NOMIS “*Location of usual residence and place of work by method of travel to work (MSOA level)*” with the location of work set as “*E02006915 : Manchester 058 (2011 super output area - middle layer)*”.

Routes from each origin output area have been assigned on the local highway network of interest based on the most appropriate route. Traffic to/from routes to the north have been split, with 50% using the B6180 Waterloo Road and 50% using the A665 Cheetham Hill Road.

Given the choice of routes for departing traffic, the anticipated northbound and eastbound traffic has been split 50% turning left out of the site and 50% turning right.

The resultant Trip Distribution Plan is included as **Appendix L**.

Given the relatively small number of HGV trips on the network during the assessed peak hours, and the lack of current data to inform the origin / destination of these trips, the HGV traffic generation has been assigned to the network using the same distribution pattern identified from the journey to work data.

The anticipated Vehicle Trips have been assigned across the network of interest using the Trip Distribution Plan to derive the Development Traffic Flows (Vehicles) for the identified peak hours, as shown in **Appendix M**.

To inform the Junction Impact Assessments detailed in *Section 7*, a plan has been prepared showing the development trips as Passenger

Car Units (PCUs). The resultant Development Traffic Flows (PCUs) for the identified peak hours, is shown in **Appendix N**.

5.4 Modal Split

A review of the NOMIS data, (as specified above), shows the localised split of People Trips by mode of travel as illustrated below:

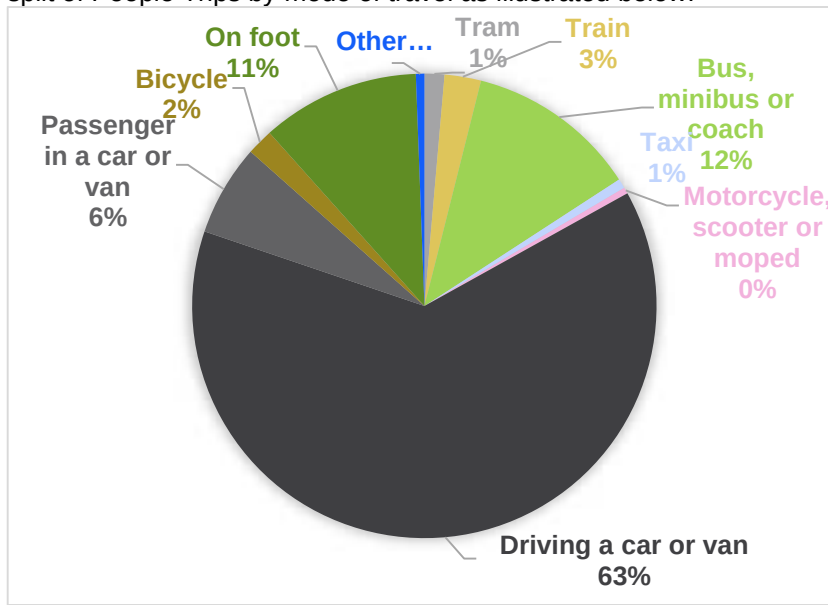


Figure 5.2 –Modal Split

The NOMIS data show that 63% of people travel by private car or van with a further 6% being a passenger. It is also noted that motorcyclists account for only 0.4% of total trips and taxis account for 0.7%.

The anticipated demand for public transport, car-sharing and active travel modes have been calculated by applying the above modal split to the People Trips detailed in **Table 5.4**.

Mode	%age	AM Peak	PM Peak	Daily Total
Car Share	6.4%	4	5	46
Bus	11.9%	7	9	85
Train	2.5%	2	2	18
Tram	1.4%	1	1	10
Bicycle	1.8%	1	1	13
Foot	11.0%	7	9	79

Table 5.4 – Sustainable and Active Travel Demand

Given the modest scale of the proposed development, the additional demand for public transport trips is not significant in comparison to existing usage and unlikely to add any noticeable strain on the currently available services. Similarly, the magnitude of additional cycling and pedestrian trips will be easily accommodated by the existing infrastructure.

6. Forecast Traffic Flows

6.1 Introduction

The following section sets out the methodology used to determine the forecast traffic flows for use in the assessment of the impacts of development generated traffic on the local highway network.

6.2 Scope of Assessment

The network of interest has been identified, based on the assessment guidance set out within the TfGM technical note: "Generic traffic forecasting requirements" which suggests a junction assessment will be required where development traffic flows exceed 30 vehicles through the junction in an hour.

Although the peak period for background traffic on Elizabeth Street has been identified as being between 1300-1600 hours, the total vehicle trip generation shown in **Table 5.1** in the previous section shows that the development is only expected to generate an hourly peak of 21 two way trips within that period. Therefore, in line with the TfGM technical note, this assessment focusses on the traditional AM and PM peak periods, where two-way trips may exceed the 30 trip threshold.

From the anticipated Development Traffic Flows (Vehicles) presented in **Appendix M**, it has been identified that only the Elizabeth Street / Queens Road ghost right-turn priority controlled junction triggers the 30 vehicles (two-way) threshold for an assessment of potential traffic impacts.

In addition to the assessment of the above junction, an operational assessment of the revised Elizabeth Street / Bridcam Street priority junction has also been undertaken to confirm its suitability to accommodate the anticipated traffic flows.

6.3 Background Traffic Flows

A classified turning count was undertaken at the Elizabeth Street / Queens Road junction on Thursday 18th November 2021 between 0730 to 0930 hours and 1630 to 1830 hours in order to capture the typical network AM and PM peak hours. Queue surveys were also undertaken to assist in the validation of the junction model.

Examination of the junction survey data indicates that the AM peak hour is 0830 to 0930 hours and the PM peak hour is 1630 to 1730 hours.

The AM and PM peak hour 2021 Background Traffic Flows are shown in **Appendix O**.

6.4 Assessment Years and Traffic Growth

During scoping discussions it was confirmed by the Authorities that an assessment of potential traffic impacts should be undertaken for the Opening Year (2023) and the Opening Year +5 years (2028).

Traffic growth factors have been identified using TEMPro. The program enables users to look at traffic growth using actual and forecast data supplied by the Department for Transport.

TfGM confirmed during scoping that, in this instance, the use of TEMPro growth factors negates the need to consider the addition of other committed development traffic flows.

It was also confirmed that no adjustment of the background traffic counts for COVID impacts is required and (at the time of the surveys) traffic demand was considered to have normalised.

The derived traffic growth factors using TEMPro for the area “E02006915 : Manchester 058 (2011 super output area - middle layer)” are as follows:

- 2021 to 2023 – AM – 1.0292
- 2021 to 2023 – PM – 1.0286
- 2021 to 2028 – AM – 1.0943
- 2021 to 2028 – PM – 1.0919

6.5 Base Flows

The 2021 Background Traffic Flows detailed in **Appendix O** have been expanded to the Opening Year and Opening Year+5 using the TEMPro growth factors detailed above. The resultant 2023 and 2028 Base Traffic Flows are detailed in **Appendix P** and **Q**, respectively.

6.6 Assessment Flows

The Base Traffic Flows detailed above have been combined with the anticipated Development Traffic Flows (PCUs) presented in **Appendix N** to derive the 2023 and 2028 Assessment Traffic Flows which are detailed in **Appendix R** and **S**, respectively.

7. Junction Impact Assessment

7.1 Assessment Methodology

The operational assessment for each junction utilises the PICADY (Junctions 9) assessment software which is the industry standard for assessing the capacity of priority controlled junctions. To ensure that the geometric parameters of the junction models reflect existing junction geometry, all measurements have been taken from available Ordnance Survey mapping and on-site observations.

The results of the operational assessment of both junctions are presented in the following section along with a summary of the assessment findings.

7.2 Elizabeth Street / Queens Road

To ensure that the assembled model results in an accurate prediction of the junction's future operational performance, the junction was initially tested against the 2021 Background Traffic Flows and the results compared to the observed queue length surveys.

The results of the assessments are summarised in **Table 7.1**, with all queues shown in PCUs. The corresponding PICADY outputs for each flow scenario are included as **Appendix T**.

Arm	Description							
A	A6010 Queens Road (E)							
B	Elizabeth Street							
C	A6010 Elizabeth Street (W)							
D	Larch Gardens							
Stream	2021 AM Peak				2021 PM Peak			
	Validation Model		Queue Length Survey		Validation Model		Queue Length Survey	
	RFC	Queue	Ave	Max	RFC	Queue	Ave	Max
B-C	0.13	0.2	1	3	0.38	0.6	3	9
B-AD	0.05	0.0			0.26	0.4		
A-BCD	0.02	0.0	0.1	3	0.04	0.0	0.8	10
D-ABC	0.08	0.1	1.3	5	0.09	0.1	0.9	2
C-ABD	0.47	1.1	1.0	5	0.49	1.2	1.0	6
RFC	Ratio Flow to Capacity Practical Maximum 0.85							
Queue	Queue Length Passenger Car Units (PCU's)							

Table 7.1 – 2021 Junction Validation Summary

From a review of the queue data, it is apparent that the junction operates well within capacity, with only occasional short-lived queues through both measured periods. The most notable queues occur in the evening peak on Elizabeth Street. Even so, this queue is typically 1 or 2 vehicles, although occasional spikes in demand result in higher queue lengths. These spikes are most likely as a result of the operation of the signalised junction of Elizabeth Street and Cheetham Hill Road, which can result in platooning of approaching vehicles.

From **Table 7.1**, it can be seen that the predicted Ratio of Flow to Capacity (RFC) is well below the theoretical capacity threshold of 0.85 across all arms, which matches the queue survey results. The queues predicted by the model (which represent average queues) are largely comparable to the average queues observed during the traffic surveys. The model is therefore considered appropriate for predicting the operation of the junction under future traffic flow conditions.

The operational performance of the junction has been tested against the Base Flow scenarios to give a datum against which the likely traffic impact of the development proposals can be considered. It has then been re-tested against the Assessment Flow scenarios to identify any requirement for improvements to mitigate the likely traffic impact.

The results of these assessments are summarised in **Table 7.2** and **Table 7.3**. The corresponding PICADY outputs for each scenario are included as **Appendix T**.

Arm	Description							
A	A6010 Queens Road (E)							
B	Elizabeth Street							
C	A6010 Elizabeth Street (W)							
D	Larch Gardens							
Stream	AM Base Scenarios				AM Assessment Scenarios			
	2023		2028		2023		2028	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
B-C	0.14	0.2	0.15	0.2	0.14	0.2	0.16	0.2
B-AD	0.05	0.1	0.06	0.1	0.05	0.1	0.07	0.1
A-BCD	0.02	0.0	0.02	0.0	0.02	0.0	0.02	0.0
D-ABC	0.08	0.1	0.10	0.1	0.08	0.1	0.10	0.1
C-ABD	0.49	1.2	0.53	1.4	0.54	1.4	0.58	1.8
RFC	Ratio Flow to Capacity Practical Maximum 0.85							
Queue	Queue Length Passenger Car Units (PCU's)							

Table 7.2 – AM Base and Assessment Results

Arm	Description							
A	A6010 Queens Road (E)							
B	Elizabeth Street							
C	A6010 Elizabeth Street (W)							
D	Larch Gardens							
Stream	PM Base Scenarios				PM Assessment Scenarios			
	2023		2028		2023		2028	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
B-C	0.40	0.7	0.44	0.8	0.43	0.8	0.47	0.9
B-AD	0.27	0.4	0.31	0.5	0.29	0.4	0.33	0.5
A-BCD	0.04	0.0	0.04	0.0	0.04	0.0	0.04	0.0
D-ABC	0.10	0.1	0.11	0.1	0.10	0.1	0.11	0.1
C-ABD	0.51	1.3	0.55	1.6	0.52	1.4	0.56	1.7
RFC	Ratio Flow to Capacity Practical Maximum 0.85							
Queue	Queue Length Passenger Car Units (PCU's)							

Table 7.3 – PM Base and Assessment Results

From **Table 7.2** and **Table 7.3**, it can be seen that in the Base Flow scenarios, the junction is predicted to operate with no capacity constraints on any movements. The results for the Assessment Flow scenario predict that with the addition of the development traffic the

junction will continue to operate with no capacity constraints. It can therefore be concluded that the junction, in its current form, is appropriate to accommodate development generated traffic and no mitigation is required.

7.3 Site Access

The operational performance of the proposed site access junction has been tested against the Assessment Flow scenarios to confirm its suitability to accommodate the anticipated levels of traffic.

The results of these assessments are summarised in **Table 7.4**. The corresponding PICADY outputs for each scenario are included as **Appendix U**.

Arm	Description							
A	Elizabeth Street (E)							
B	Bridcam Street							
C	Elizabeth Street (W)							
Stream	2023 Scenario				2028 Scenario			
	AM		PM		AM		PM	
	RFC	Queue	RFC	Queue	RFC	Queue	RFC	Queue
B-AC	0.02	0.0	0.07	0.1	0.02	0.0	0.08	0.1
C-AB	0.07	0.1	0.02	0.0	0.07	0.1	0.02	0.0
RFC	Ratio Flow to Capacity Practical Maximum 0.85							
Queue	Queue Length Passenger Car Units (PCU's)							

Table 7.4 – Site Access Assessment Results

From **Table 7.4**, it can be seen that the junction is predicted to operate with no capacity constraints on any movements. It can therefore be concluded that the proposed junction is the appropriate design for providing access to the proposed development.

8. Summary and Conclusions

This TA has been prepared on behalf of Kier Property Ltd, to support the proposed redevelopment of a site in the Cheetham Hill area of Manchester for industrial and logistics uses, providing approximately 8,100 sq. m (GIA) of Class B2 / B8 development, and a proposed opening year of 2023.

The TA has been prepared in line with best practice and the scope of the TA and the associated Interim Travel Plan have been agreed with MCC and TfGM. In addition, this TA has been prepared in line with BREEAM specific guidance.

The development Site is located to the south of Elizabeth Street, in Cheetham Hill. The majority of the Site is currently derelict brownfield land accessed via Bridcam Street, which is an unadopted private road.

A review of the local highway network has been undertaken which identifies the existing infrastructure providing access to the Site. An Accessibility Audit has also been undertaken to review the Site's accessibility by sustainable means, including public transport, cycling and walking.

The Audit identifies that the Site is ideally located to take advantage of numerous local facilities on foot and commuting trips by bicycle. It is also noted that the Site is well located to take advantage of high frequency bus services within easy walking distance, although tram and train provision fall just outside of the recommended walking distance in prevailing guidance.

Background traffic and speed data were collected to inform the assessment of traffic impact. Traffic speeds at the Site access are well below the legal speed limit. Personal Injury Accidents statistics have been examined and that there are no specific road safety concerns on the adjacent highway network.

A review of the relevant national, regional and local transport planning policies has been undertaken. The proposed development accords with these policies and follows the design guidance therein.

The TA provides details of the proposed development with regard to traffic and transport, including, the proposed access and servicing strategy, proposed pedestrian and walking infrastructure, car and bicycle parking provision and proposed improvements to Elizabeth Street

EV charging will be provided at a ratio of 20% of car parking provision, with the balance of the parking spaces ducted so as to be ready for future EV use.

The existing Elizabeth Street / Bridcam Street junction will be improved to a fully adoptable standard and the footway on the site frontage will be resurfaced. Additionally, it has been agreed with MCC that a TRO will be progressed on Elizabeth Street to control on-street waiting.

Forecast traffic flows and multi-modal trips have been identified and it is noted that the predicted level of demand for walking, cycling and public transport can be easily accommodated within the existing provision.

The operational performance of the revised site access and the Elizabeth Street / Queens Road junction have been tested against the baseline traffic flows and the predicted operational traffic flows for the AM and PM peak hours. It is noted that both junctions will operate well within their capacity thresholds, in all scenarios. The existing highway network is therefore considered appropriate to accommodate development generated traffic and no mitigation is required.

The findings of this TA identify no reason why the development should not be granted planning consent.

Appendix A – Scoping Statement

19-21 Elizabeth Street, Cheetham Hill

Highways and Transportation Meeting & Scoping Note

Meeting Date:	2021-10-12	Organisation
Present:	Nigel Robson	Sweco
	Ian Bullard	Sweco
	Andy Connell	MCC Highways DC
	Richard Dolphin	TfGM UTC
	Riccardo Boncinelli	TfGM HFAS

Thank you for attending the online meeting to discuss the scope of the assessment required to support the proposed redevelopment of land off Elizabeth Street, Cheetham Hill for employment uses.

The site area is approximately 4.7 acres and is shown below.



The scheme will be submitted to MCC as a detailed planning application, with a target submission date in December 2021.

Further to our meeting, we have undertaken the additional background assessment work discussed and set out below the proposed scope of the Transport Assessment for your comment and agreement.

Sweco
Ian Bullard
Principal Engineer
ian.bullard@sweco.co.uk
Telephone +44 161 927 4822

Abbey House, 4th Floor
Manchester
M2 3LW
United Kingdom
Telephone +44 (0) 161 927 4810
www.sweco.co.uk

Sweco UK Limited
Reg. No.: 2888385
Reg. Office Address:
Grove House, Mansion Gate Drive
Leeds LS7 4DN

Site Details

The proposals relate to a site located to the south of Elizabeth Street. The site is accessed via Bridcam Street, which has been confirmed as “unadopted” and is in a poor state of repair. It should be noted that property 19 -21 Elizabeth Street and Bridcam Street itself also form part of the development site as illustrated above.

The site was previously owned by MCC and has been secured by Kier Property who intend to develop it for employment uses. The site is currently disused and is located within the Cheetham Hill Economic Improvement Area. Policy CC10 identifies the area as a principal location for employment.

There are no parking / waiting restrictions on the southern frontage of Elizabeth Street. The southern footway is in a variable condition with evidence of sunken kerbs and an uneven / broken surface in places.

Development Proposal

The proposals are for employment uses under classes B2/B8 and what are now classified as relevant E class uses (excluding retail except for minor and ancillary trade counter uses). Office provision will be minor and ancillary to the employment uses.

Overall the proposals are anticipated to comprise approximately 8,500 m² (GIA) across 8 units of varying sizes, with approximately 100 parking spaces.

The site access will be via Bridcam Street which will be improved and realigned to form a simple priority junction with Elizabeth Street. The junction will be designed to adoptable standards and offered for adoption (to the back of the footway) via a S278 Agreement. Bridcam Street itself will remain private and will provide access to the car parking and service yards in the main body of the site. The existing rear service access to No23a Elizabeth Street will be maintained.

The improved Bridcam Street / Elizabeth Street junction will provide 2m footways, a 2m central refuge for pedestrians, with tactile paving and dropped kerbs provided. The carriageway on Bridcam Street will be appropriate to accommodate the manoeuvres of HGVs and visibility for emerging vehicles onto Elizabeth Street will be provided in accordance with MfS for a 30mph road (x - 2.4m : y - 43m).

Car parking will be provided in accordance with guidance for B2 and B8 uses within MCC’s Core Strategy. Whilst a split between the use classes cannot be confirmed at this stage, parking provision across the site is expected to be circa 100 spaces and justification will be provided based on the maximum standards in the Core Strategy and the anticipated traffic generation and parking demand (noting the requirement that sufficient capacity is provided to ensure there is no overspill onto surrounding streets).

Disabled parking and cycle parking will be provided to satisfy the minimum requirements set out in the Core Strategy. The developer is seeking BREEAM “Very Good” accreditation, as a minimum, so it is likely that cycle parking will exceed the Core Strategy minimum standards. Cycle parking will be provided in a combination of secure, covered and Sheffield stand type facilities.

We note MCCs requirement for 20% of all parking spaces to be “EV Active” with a minimum 7kW charging station per 2 bays.

We also note the comments relating to the provision of a NWAAT TRO on the southern frontage of Elizabeth Street and improvement of the existing footway

surfacing on the site frontage. We will agree details for both aspects with MCC during the course of the application process.

13/10/2021

Traffic Generation

Trip rates have been derived from the TRICS database for Industrial Units (excluding Greater London, Scotland and Ireland). The TRICS classification for Industrial Units best reflects the type of occupiers that are envisaged by Kier following an initial Local Demand Study, which has identified local requirements for small scale manufacturing, storage hubs, trade counters and depots. The Trip Rates, and Vehicle Trips (based on the assumed 8,500m² GIA) are set out below.

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	0.555	0.073	0.628
17:00-18:00	0.12	0.409	0.529
Daily Trip Rates:	2.281	2.131	4.412

Industrial Units	ARRIVALS	DEPARTURES	TOTALS
08:00-09:00	47	6	53
17:00-18:00	10	35	45
Daily Trip Totals:	194	181	375

The arrival profile shows that the highest hourly vehicle trips occur within the typical AM and PM peak hours. The TRICS output file is included as **Appendix A** for reference.

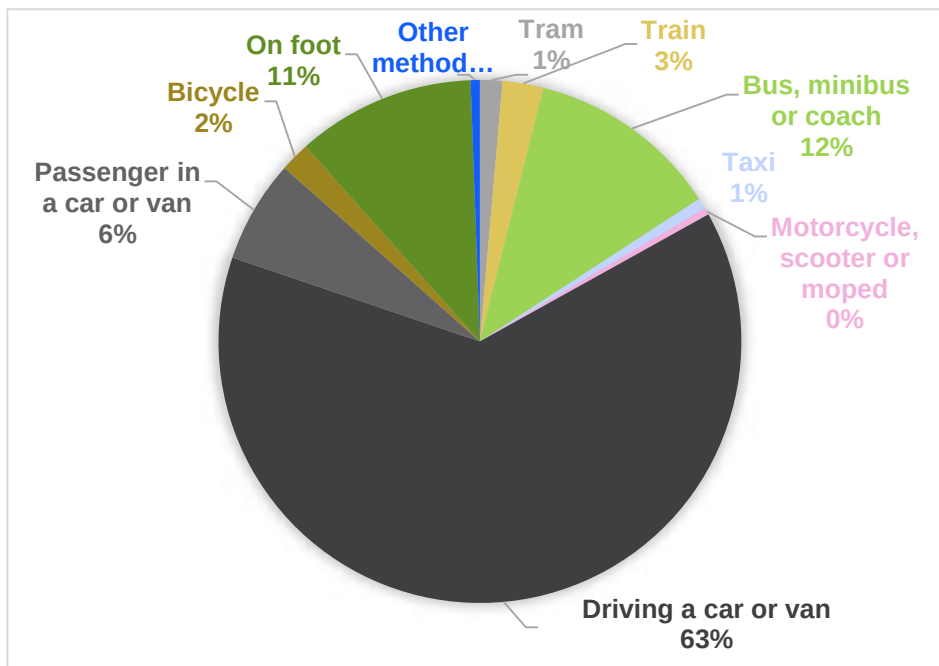
Following the advice provided in the meeting, we have identified a trip distribution based on NOMIS "*Location of usual residence and place of work by method of travel to work (MSOA level)*" with the location of work set as "*E02006915 : Manchester 058 (2011 super output area - middle layer)*".

As suggested, Google Maps directions have been utilised to identify the preferred route from each origin output area. However, this suggested that routes from the north had a 100% preference to use the A576 Leicester Road over Cheetham Hill Road meaning that traffic would arrive to the network of interest via the A6010 Elizabeth Street. Given the closeness of the journey times we have split traffic to these routes, with 50% using the route suggested by Google and 50% choosing to continue southbound on Cheetham Hill Road.

Given the choice of routes for departing traffic, we have assigned the anticipated northbound and eastbound traffic with a 50/50 left/right split from the site access. The resultant Distribution of Development Traffic plan is included as **Appendix B**.

We have applied the anticipated Vehicle Trips across the network of interest using the Distribution Plan to derive the Development Traffic Flows, as shown in **Appendix C**.

A review of the NOMIS data, as specified above shows the localised split of trips by mode as illustrated below:



The mode split is significantly different to that identified by the TRICS multimodal data, and the NOMIS data will be used to inform the assessment.

The mode share shows that 63% of people trips are made by private car with 12% by bus, 11% by foot and 2% by bicycle.

Scope of Assessment

We note that the TfGM HFAS technical note: “*Generic traffic forecasting requirements*” suggests a junction assessment will be required where development traffic flows exceed 30 vehicles through the junction in an hour. Based on the anticipated development traffic flows presented in **Appendix C**, we have identified that only one junction triggers the threshold for an assessment of potential traffic impacts, namely:

- Elizabeth Street / Queens Road ghost right turn priority controlled junction.

As noted in the meeting, an operational assessment of the revised Elizabeth Street / Bridcam Street junction to confirm its suitability to accommodate the anticipated traffic flows will be undertaken.

We can confirm the discussions in the meeting that the junction analysis will be based on newly obtained classified turning counts for the weekday AM and PM network peak hours, with assessment scenarios for the opening year (2023) and +5 years from opening (2028). An ATC will be installed on Elizabeth Street for a 5-day (Mon – Fri) period to provide background traffic flows passing the site.

TfGM confirmed that no Covid traffic adjustment factor is required.

To account for local traffic growth and committed development, observed traffic flows will be expanded using Temprow growth factors for “E02006915 : Manchester 058 (2011 super output area - middle layer)” as follows:

- 2021 to 2023 – AM – 1.0292
- 2021 to 2023 – PM – 1.0286

- 2021 to 2028 – AM – 1.0943
- 2021 to 2028 – AM – 1.0919

13/10/2021

The traffic impact assessment will be presented within the Transport Assessment report, which will also include details of a cycling and walking audit of facilities available in the adjacent area. An Interim Travel Plan will be provided.

We trust that the above is an accurate reflection of our discussions and the information provided is helpful in assisting in the confirmation of the scope of assessment set out herein.

We look forward receiving your agreement, or any additional comments, in due course.

Appendix A

13/10/2021

TRICS 7.8.3

Trip Rate P: Gross floor area

Filtering Summary

Land Use 02/C EMPLOYMENT/INDUSTRIAL UNIT

Selected Tr 690-20000 sqm GFA

Actual Trip 690-14125 sqm GFA

Date Range Minimum: Maximum: 14/11/19

Parking Spz All Surveys Included

Days of the	Tuesday	2
	Wednesday	1
	Thursday	4

Main Locat	Suburban /	3
	Edge of Town	2
	Neighbourhood	1
	Free Standing	1

Population All Surveys Included

Population	1 000 or Less	2	
	5 001 to 10	0	1
	10 001 to 15	0	1
	15 001 to 20	0	1
	25 001 to 50	0	2

Population	5 001 to 25	0	1
	25 001 to 50	0	1
	50 001 to 75	0	2
	125 001 to 250	0	2
	250 001 to 500	0	1

Car Owner:	0.6 to 1.0	2
	1.1 to 1.5	3
	1.6 to 2.0	2

PTAL Rating	No PTAL Pr	7
-------------	------------	---

Filter by Sit All Surveys Included

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use 02 - EMPLOYMENT
Category C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

2 SOUTH EAST

HC HAMPSHIRE 1 days

WS WEST SUSSEX 1 days

3 SOUTH WEST

DV DEVON 1 days

4 EAST ANGLIA

NF NORFOLK 1 days

6 WEST MIDLANDS

HE HEREFORD 1 days

9 NORTH

CB CUMBRIA 1 days

10 WALES

CF CARDIFF 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 p

Parameter: Gross floor area

Actual Range 690 to 14125 (units: sqm)

Range Selected 690 to 20000 (units: sqm)

Public Transport Provision:

Selection b Include all surveys

Date Range 01/01/13 to 14/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date

Selected survey days:

Tuesday 2 days

Wednesday 1 days

Thursday 4 days

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

Selected survey types:

Manual count 7 days

Directional 0 days

This data displays the total amount whilst ATC surveys are undertaken using machines.

Selected Locations:

Town Centre 0

Edge of Town 0

Suburban Area 3

Edge of Town 2

Neighbourhood 1

Free Standing 1

Not Known 0

This data displays Edge of Town, Suburban, Neighbourhood, Edge of Town, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	4
Commercial	1
Development	0
Residential	0
Retail Zone	0
Built-Up Zone	0
Village	1
Out of Town	1
High Street	0
No Sub Cat	0

This data displays Industrial Zone, Development, Residential, Retail Zone, Built-Up Zone, Village, Out of Town, High Street

Secondary Filtering selection:

Use Class:

Not Known 7 days

This data displays which can be found within the Library module of TRICS®.

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less 2 days

5,001 to 10,000 1 days

10,001 to 15,000 1 days

15,001 to 20,000 1 days

25,001 to 50,000 2 days

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

Population within 5 miles:

5,001 to 20,000 2 days

25,001 to 50,000 1 days

50,001 to 100,000 2 days

125,001 to 250,000 2 days

250,001 to 500,000 1 days

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

Car ownership within 5 miles:

0.6 to 1.0 2 days

1.1 to 1.5 3 days

1.6 to 2.0 2 days

This data displays within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes 1 days

No 6 days

This data displays the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Pr 7 days

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

LIST OF SITES relevant to selection parameters

Site(1): CB-02-C-01 Site area: 0.79 hect

Development DOMINO'S Gross floor 2950 sqm

Location: PENRITH Parking space 48

Postcode: CA11 9BN No of Empl 70

Main Locat Edge of Town Survey Date #####

Sub-Location Industrial Z Survey Day Tuesday

PTAL: n/a

Site(2): CF-02-C-02 Site area: 2.67 hect

Development BAKERY Gross floor 14125 sqm

Location: CARDIFF Parking space 147

Postcode: CF14 4UZ No of Empl 225

Main Locat Suburban A Survey Date #####

Sub-Location Industrial Z Survey Day Thursday

PTAL: n/a

Site(3): DV-02-C-02 Site area: 0.95 hect

Development ENERGY RE Gross floor 3513 sqm

Location: EXETER Parking space 42

Postcode: EX2 8QE No of Empl 17

Main Locat Suburban A Survey Date #####

Sub-Location Industrial Z Survey Day Thursday

PTAL: n/a

Site(4): HC-02-C-02 Site area: 2.10 hect

Development GIN DISTILL Gross floor 8000 sqm

Location: LAVERSTOCK Parking space 126

Postcode: RG28 7NR No of Empl 75

Main Locat Neighbourhood Survey Date #####

Sub-Location Village Survey Day Wednesday

PTAL: n/a

Site(5): HE-02-C-02 Site area: 0.63 hect

Development THERMAL F Gross floor 1880 sqm

Location: HEREFORD Parking space 27

Postcode: HR1 1JR No of Empl 15

Main Locat Edge of Town Survey Date #####

Sub-Location Commercial Survey Day Tuesday

PTAL: n/a

Site(6): NF-02-C-04 Site area: 0.09 hect

Development EXHIBITION Gross floor 690 sqm

Location: NORWICH Parking space 7

Postcode: NR3 3ST No of Empl 9

Main Locat Suburban A Survey Date #####

Sub-Location Industrial Z Survey Day Thursday
 PTAL: n/a
 Site(7): WS-02-C-0: Site area: 3.72 hect
 Development AVIATION (Gross floor 11375 sqm
 Location: NEAR HOR: Parking space 441
 Postcode: RH13 0AS No of Empl 372
 Main Location Free Stand: Survey Date #####
 Sub-Location Out of Town Survey Day Thursday
 PTAL: n/a

This section it displays the selected the day of and whether the survey was a manual classified count or

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

Calculation Factor: 100 sqm

Count Type: TOTAL VEHICLES

			ARRIVALS		DEPARTURES			
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA
00:00-00:30								
00:30-01:00								
01:00-01:30								
01:30-02:00								
02:00-02:30								
02:30-03:00								
03:00-03:30								
03:30-04:00								
04:00-04:30								
04:30-05:00								
05:00-05:30	1	2950	0	1	2950	0	1	2950
05:30-06:00	1	2950	0.102	1	2950	0	1	2950
06:00-06:30	2	7163	0.028	2	7163	0	2	7163
06:30-07:00	2	7163	0.119	2	7163	0.042	2	7163
07:00-07:30	7	6076	0.075	7	6076	0.014	7	6076
07:30-08:00	7	6076	0.122	7	6076	0.021	7	6076
08:00-08:30	7	6076	0.374	7	6076	0.028	7	6076
08:30-09:00	7	6076	0.181	7	6076	0.045	7	6076
09:00-09:30	7	6076	0.085	7	6076	0.033	7	6076
09:30-10:00	7	6076	0.12	7	6076	0.061	7	6076
10:00-10:30	7	6076	0.103	7	6076	0.061	7	6076
10:30-11:00	7	6076	0.108	7	6076	0.063	7	6076
11:00-11:30	7	6076	0.052	7	6076	0.068	7	6076
11:30-12:00	7	6076	0.04	7	6076	0.042	7	6076
12:00-12:30	7	6076	0.066	7	6076	0.085	7	6076
12:30-13:00	7	6076	0.073	7	6076	0.106	7	6076
13:00-13:30	7	6076	0.075	7	6076	0.092	7	6076
13:30-14:00	7	6076	0.042	7	6076	0.061	7	6076
14:00-14:30	7	6076	0.047	7	6076	0.045	7	6076
14:30-15:00	7	6076	0.045	7	6076	0.045	7	6076

15:00-15:30	7	6076	0.045	7	6076	0.073	7	6076
15:30-16:00	7	6076	0.016	7	6076	0.054	7	6076
16:00-16:30	7	6076	0.031	7	6076	0.082	7	6076
16:30-17:00	7	6076	0.026	7	6076	0.12	7	6076
17:00-17:30	7	6076	0.047	7	6076	0.066	7	6076
17:30-18:00	7	6076	0.073	7	6076	0.343	7	6076
18:00-18:30	7	6076	0.059	7	6076	0.158	7	6076
18:30-19:00	7	6076	0.033	7	6076	0.059	7	6076
19:00-19:30	3	7442	0.04	3	7442	0.036	3	7442
19:30-20:00	3	7442	0.018	3	7442	0.063	3	7442
20:00-20:30	2	5475	0.018	2	5475	0.119	2	5475
20:30-21:00	2	5475	0.018	2	5475	0.046	2	5475
21:00-21:30	1	8000	0	1	8000	0	1	8000
21:30-22:00	1	8000	0	1	8000	0	1	8000
22:00-22:30								
22:30-23:00								
23:00-23:30								
23:30-24:00								
Daily Trip Rates:			2.281			2.131		

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

Calculation Factor: 100 sqm

Count Type: TAXIS

Time Range	ARRIVALS			DEPARTURES				
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA
00:00-00:30								
00:30-01:00								
01:00-01:30								
01:30-02:00								
02:00-02:30								
02:30-03:00								
03:00-03:30								
03:30-04:00								
04:00-04:30								
04:30-05:00								
05:00-05:30	1	2950	0	1	2950	0	1	2950
05:30-06:00	1	2950	0	1	2950	0	1	2950
06:00-06:30	2	7163	0	2	7163	0	2	7163
06:30-07:00	2	7163	0	2	7163	0	2	7163
07:00-07:30	7	6076	0	7	6076	0	7	6076
07:30-08:00	7	6076	0	7	6076	0	7	6076
08:00-08:30	7	6076	0	7	6076	0	7	6076
08:30-09:00	7	6076	0	7	6076	0	7	6076
09:00-09:30	7	6076	0	7	6076	0	7	6076
09:30-10:00	7	6076	0.002	7	6076	0.002	7	6076
10:00-10:30	7	6076	0	7	6076	0	7	6076
10:30-11:00	7	6076	0	7	6076	0	7	6076
11:00-11:30	7	6076	0	7	6076	0	7	6076

Appendix B

13/10/2021

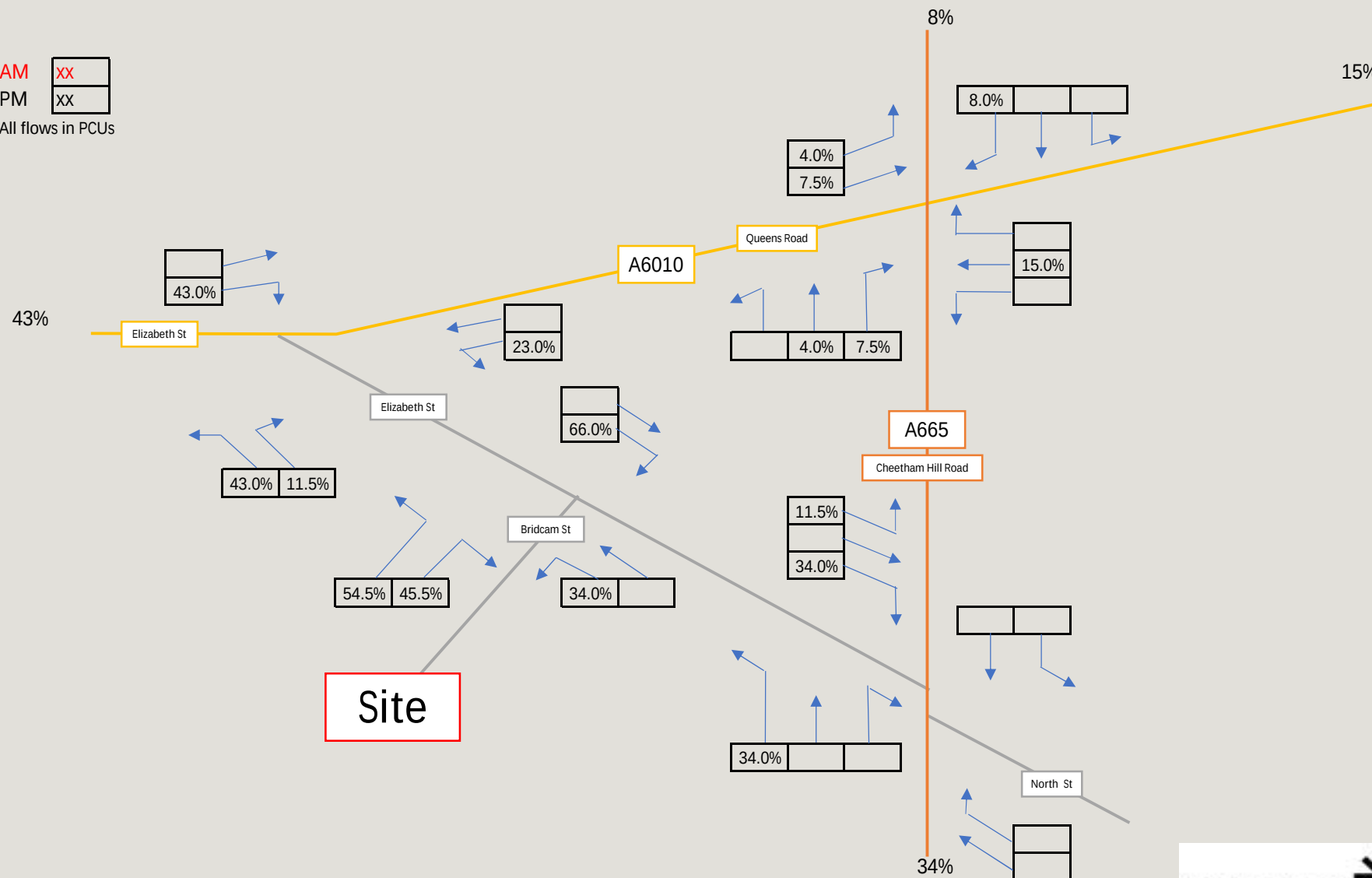
AM

XX

 PM

XX

 All flows in PCUs



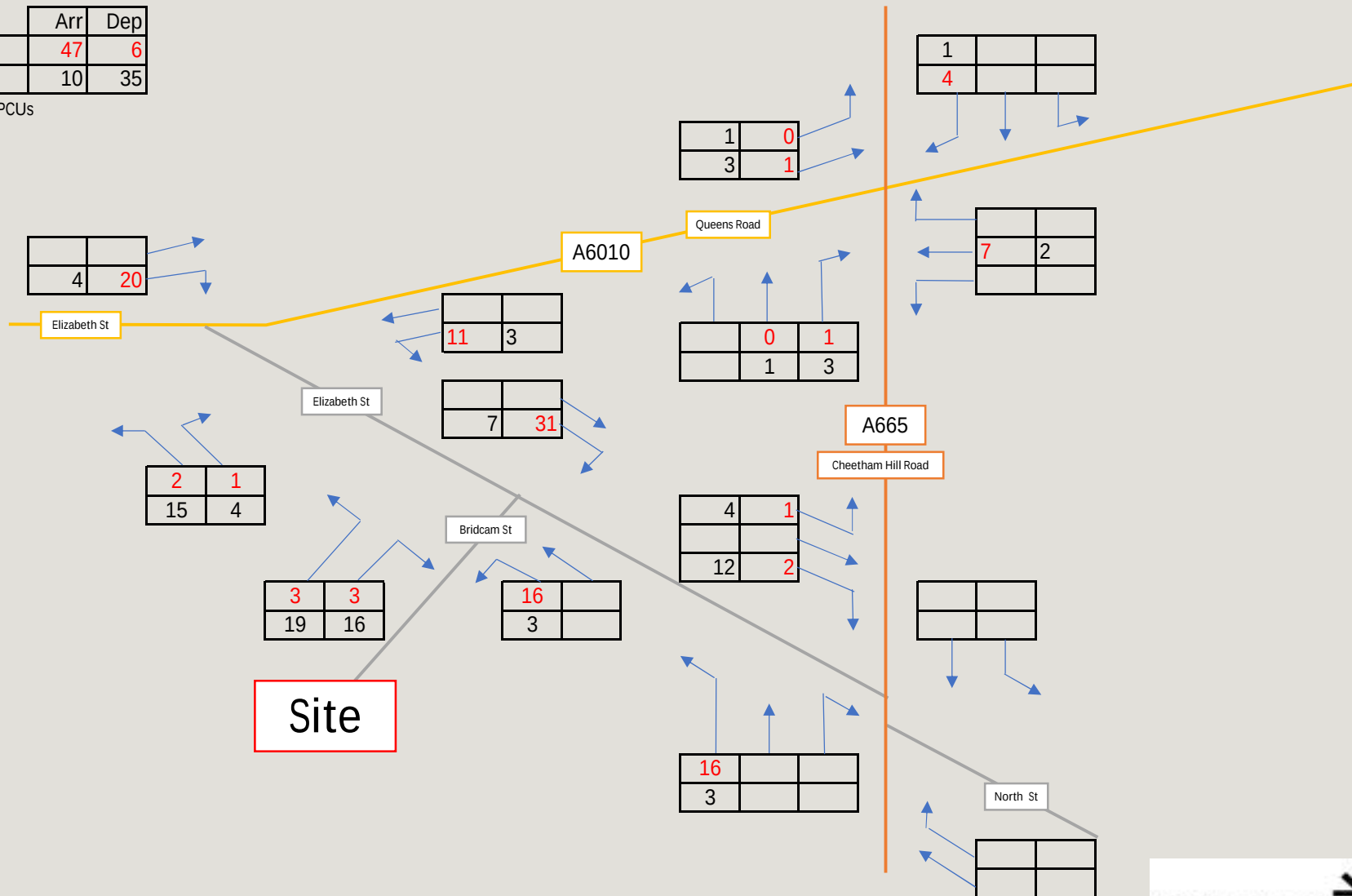
Distribution of Development Traffic

Appendix C

13/10/2021

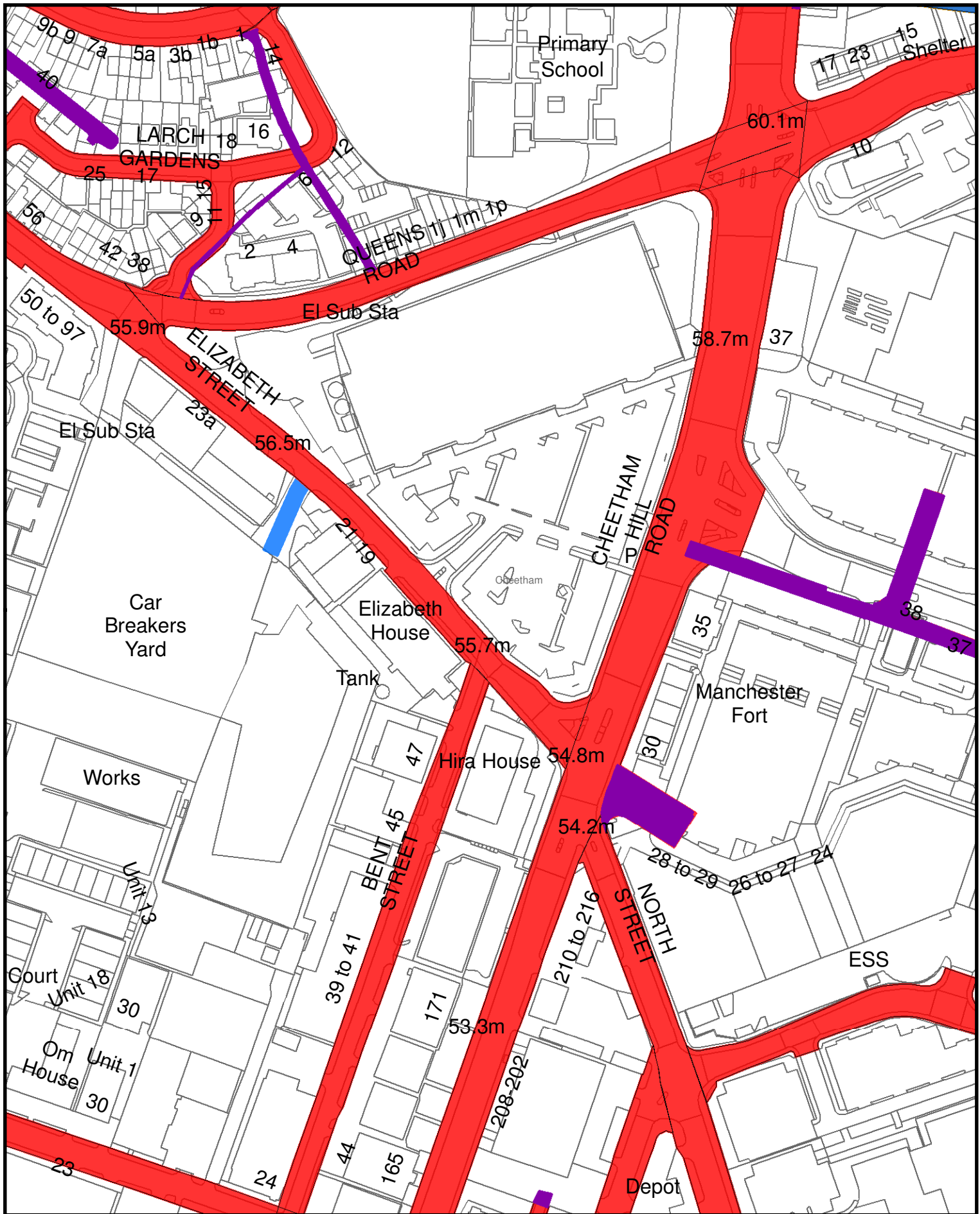
		Arr	Dep
AM	xx	47	6
PM	xx	10	35

All flows in PCUs



Development Traffic Flows

Appendix B – Adopted Highway Plan



Please note that the highways maintained at public expense revealed in your report are an indicative status that has been captured onto our business system and is not the definitive adoption extent.

Highway Status	Adopted	Unadopted	Maintained	Scale: 1:2,200
Highway Closures	Proposed	Legal	Diversion	
Alley Gating	Adopted	Unadopted	Maintained	Proposed
Proposed Schemes	Rail	Road	Traffic Orders	
Private Developments	Field Footpaths	Live Rail Schemes		

© Crown copyright and database rights 2017. Ordnance Survey 100019568.

Appendix C – Traffic Accident Data report

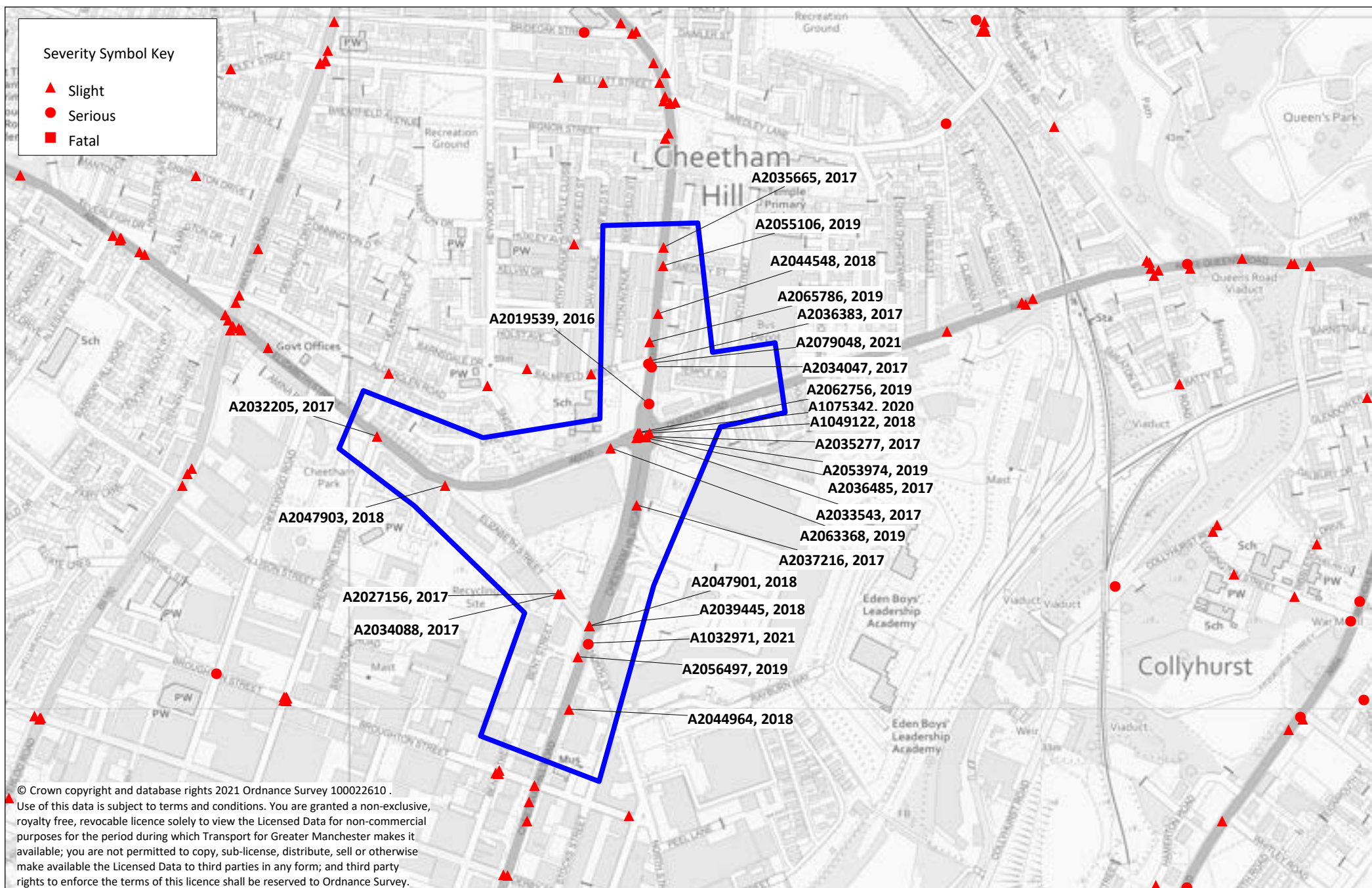
TRANSPORT FOR GREATER MANCHESTER



Traffic Accident Data for

Sweco Ltd

**Reported Injury Accidents in Specified Area of Cheetham Hill Road,
Manchester,
01/05/2016 to 30/04/2021**



TRANSPORT FOR GREATER MANCHESTER



**Reported Accident in Specified Area of A665 Cheetham Hill Road, Manchester,
01/05/2016 to 30/04/2021**

Injury Accidents	May - Dec 2016	2017	2018	2019	2020	Jan- Apr 2021	Total
Fatal	0	0	0	0	0	0	0
Serious	1	1	0	0	0	2	4
Slight	0	9	6	6	1	0	22
Total	1	10	6	6	1	2	26

Standard Totals Report : Reported Accident in Specified Area of A665 Cheetham Hill Road, Manchester, 01/05/2016 to 30/04/2021

Accidents

Serious	4
Slight	22
Total Accidents	26

Casualties By Age and Sex

Severity	0 - 15	16 - 59	60 - 69	70 +	Total
Serious					
Male	1	3	0	0	4
Female	1	0	0	0	1
Total	2	3	0	0	5
Slight					
Male	4	13	1	0	18
Female	5	17	0	0	22
Total	9	30	1	0	40
Total Casualties	11	33	1	0	45

Casualties By Age and Class

Severity	0 - 15	16 - 59	60 - 69	70 +	Total
Serious					
Driver or rider	0	2	0	0	2
Veh or pillion pas	0	1	0	0	1
Pedestrian	2	0	0	0	2
Total	2	3	0	0	5
Slight					
Driver or rider	1	21	1	0	23
Veh or pillion pas	5	8	0	0	13
Pedestrian	3	1	0	0	4
Total	9	30	1	0	40
Total Casualties	11	33	1	0	45

Cyclist (Rider and Pillion) and Pedestrian Casualties By Age

Severity	0 - 15	16 - 59	60 - 69	70 +	Total
Serious	2	0	0	0	2
Slight	4	3	0	0	7
Total Casualties	6	3	0	0	9

Casualties Broken Down By Type

Car (Driver)	0-15	16+	Total
Slight	0	20	20
Total	0	20	20
Car (Passenger)	0-15	16+	Total
Slight	5	8	13
Total	5	8	13
Pedestrian	0-15	16+	Total
Serious	2	0	2
Slight	3	1	4
Total	5	1	6
TWPV (Rider)	0-15	16+	Total
Serious	0	2	2
Total	0	2	2
TWPV (Pillion)	0-15	16+	Total
Serious	0	1	1
Total	0	1	1
Cyclist (Rider)	0-15	16+	Total
Slight	1	2	3
Total	1	2	3
Total	11	34	45

Standard Report - Reported Accident in Specified Area of A665 Cheetham Hill Road, Manchester, 01/05/2016 to 30/04/2021

This printout has been generated from the Transport for Greater Manchester's database of road traffic accident records using the query system, GMAXI.

The road traffic accident database contains STATS19 data supplied by Greater Manchester Police and further validated by the Highways Forecasting and Analytical Services (HFAS) section of Transport for Greater Manchester. It is maintained by HFAS on behalf of the ten District Councils in Greater Manchester.

This information is provided for the sole use of the recipient. It may not be sold, lent, hired out, or in any other way disclosed to a third party nor may it be reproduced in any form which may be obtained by a third party.

Accident Reference Number: A2032205			Day: Thursday		Contributory Factors			Date: 29/06/2017			Time: 14:54		
Place Reported: Else			District: Manchester		Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Elizabeth Street at junction with Sherborne Street					Type Move From To Skid			Type Sex Age Sev Pupil					
Description: All Vehs Trav Nw Elizabeth St. V2 In Stationary Traffic With V1 Behind. V1 Moves Off And Collides With V2. V2 Shunts Forward And Collides With Rear Of V3.					DJudg VLike V1			Car Waitg SE NW					
					DFLoo Poss V1			Car Waitg SE NW			1 Pas F 26 Slight		
								Car Start SE NW					
Locational Details			Conditions		Accident Details								
Road:	A6010/U	Junction Details:	Tjun	Road Surface:	Dry	Severity:	Slight						
OSGR:	384040 400395	Junction Control:	GW	Light Conditions:	Light	No. of Vehicles:	3						
Speed Limit:	30	Ped Crossing:	ZebX	Weather Conditions:	N/A	No. of Casualties:	1						
Accident Reference Number: A2047903			Day: Wednesday		Contributory Factors			Date: 22/08/2018			Time: 19:28		
Place Reported: Else			District: Manchester		Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Elizabeth Street at junction with Queens Road					Type Move From To Skid			Type Sex Age Sev Pupil					
Description: V2 Trav Nw Queens Rd, V1 Trav Nw At Speed On Elizabeth St & Fails To Give Way At Junction Colliding With V2					DGWor VLike V1			Car Ahead SE NW			1 Drv F 36 Slight		
					DSpee VLike V1			Car Ahead E NW			2 Pas M 12 Slight		
											3 Pas F 9 Slight		
											4 Pas M 4 Slight		
Locational Details			Conditions		Accident Details								
Road:	C/A6010	Junction Details:	Tjun	Road Surface:	Dry	Severity:	Slight						
OSGR:	384139 400324	Junction Control:	GW	Light Conditions:	Light	No. of Vehicles:	2						
Speed Limit:	30	Ped Crossing:		Weather Conditions:	Fine	No. of Casualties:	4						

Accident Reference Number: A2027156				Day: Saturday		Contributory Factors			Date: 28/01/2017				Time: 18:20			
Place Reported: Scene				District: Manchester												
Location: Elizabeth Street at junction with Bent Street							Factor Conf Ref									
Description: V1 Trav N On Bent St, Turing Left Onto Elizabeth St. V2 (Pedal Cycle) Trav Nw On Elizabeth St. As V1 Turns, V1 Hits V2							DFLoo VLike V1									
Locational Details				Conditions		Accident Details			Type Move From To Skid				Casualty Details			
Road: C/U Junction Details: Tjun				Road Surface: Dry		Severity: Slight			Car p/c TurnL S NW				1 Rid M 37 Slight			
OSGR: 384302 400167 Junction Control: GW				Light Conditions: Dark		No. of Vehicles: 2			Ahead SE NW							
Speed Limit: 30 Ped Crossing:				Weather Conditions: Fine		No. of Casualties: 1										
Accident Reference Number: A2034088				Day: Sunday		Contributory Factors			Date: 06/08/2017				Time: 18:10			
Place Reported: Scene				District: Manchester												
Location: Elizabeth Street at junction with Bent Road							Factor Conf Ref									
Description: V2 Trav Se Elizabeth St. V1 Trav Ne Bent Rd Turns Right Into Elizabeth And Collision Occurs.																
Locational Details				Conditions		Accident Details			Type Move From To Skid				Casualty Details			
Road: C/U Junction Details: Tjun				Road Surface: Dry		Severity: Slight			Car Car TurnR SW SE				1 Drv M 30 Slight			
OSGR: 384306 400167 Junction Control: GW				Light Conditions: Light		No. of Vehicles: 2			Ahead NW SE							
Speed Limit: 30 Ped Crossing:				Weather Conditions: Fine		No. of Casualties: 1										
Accident Reference Number: A2044964				Day: Thursday		Contributory Factors			Date: 14/06/2018				Time: 16:14			
Place Reported: Else				District: Manchester												
Location: Cheetham Hill Road 85 metres South West of North Street							Factor Conf Ref									
Description: V2 Pulls Out Of Car Wash To Turn Left To Trav Sw Cheetham Hill Rd & Collides With V1 (Pedal Cycle) Trav Ne Cheetham Hill Rd On Footpath.							DCPav VLike V1 DPanic VLike V1									
Locational Details				Conditions		Accident Details			Type Move From To Skid				Casualty Details			
Road: A665/U Junction Details: ent				Road Surface: Dry		Severity: Slight			p/c Ahead SW NE				1 Rid M 13 Slight			
OSGR: 384318 400000 Junction Control: GW				Light Conditions: Light		No. of Vehicles: 2			Car wtgTL SE SW							
Speed Limit: 30 Ped Crossing:				Weather Conditions: Fine		No. of Casualties: 1										
Accident Reference Number: A2056497				Day: Thursday		Contributory Factors			Date: 09/05/2019				Time: 14:05			
Place Reported: Else				District: Manchester												
Location: Cheetham Hill Road 10 metres SW Of North Street							Factor Conf Ref									
Description: All Vehs Trav Ne Cheetham Hill Rd, V3 Is Waiting To Move Off At Lights, V1 (LGV) Collides With Rear Of V2, Which Shunts V2 Into Rear Of V3																
Locational Details				Conditions		Accident Details			Type Move From To Skid				Casualty Details			
Road: A665/U Junction Details: Tjun				Road Surface: Wet		Severity: Slight			LGV Ahead SW NE				1 Drv M 41 Slight			
OSGR: 384331 400076 Junction Control: TS				Light Conditions: Light		No. of Vehicles: 3			Car Ahead SW NE							
Speed Limit: 30 Ped Crossing: TSX				Weather Conditions: Fine		No. of Casualties: 1			Car Waitg SW NE							

Accident Reference Number: A1032971				Day: Saturday		Contributory Factors			Date: 27/03/2021				Time: 16:20			
Place Reported: Scene				District: Manchester												
Location: Cheetham Hill Road at junction with North Street						Factor Conf Ref			Vehicle Details				Casualty Details			
Description: V1 In Pursuit Of V2 (Stolen Motorcyle) Trav N Cheetham Hill Rd. V1 Forces V2 Into Opp C/way. V2 Collides Head On With V3 Trav S-bd Cheetham Hill Rd, V1 Not Hit & Fts						DAggre VLike V1			Type Move From To Skid				Type Sex Age Sev Pupil			
						DAggre VLike V2			Car Ahead S N							
						StoVeh VLike V2			m/s Ahead S N				1 Rid M 19 Serious Un			
Locational Details				Conditions		Accident Details							2 Pas M 19 Serious Un			
Road:	A665/U		Junction Details: Tjun		Road Surface:	Dry		Severity:	Serious							
OSGR:	384346	400095	Junction Control: TS		Light Conditions:	Light		No. of Vehicles:	3							
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Fine		No. of Casualties:	2							
Accident Reference Number: A2047901				Day: Sunday		Contributory Factors			Date: 02/09/2018				Time: 12:00			
Place Reported: Scene				District: Manchester												
Location: Cheetham Hill Road at junction with Elizabeth Street						Factor Conf Ref			Vehicle Details				Casualty Details			
Description: V1 Trav Sw Cheetham Hill Rd Turns Right Infront Of V2 Trav Ne Cheetham Hill Rd. V2 Collides With V1.						DFLoo VLike V1			Type Move From To Skid				Type Sex Age Sev Pupil			
						DJudg Poss V1			Car TurnR NE NW				1 Drv M 63 Slight			
									Car Ahead SW NE							
Locational Details				Conditions		Accident Details										
Road:	A665/U		Junction Details: Tjun		Road Surface:	Dry		Severity:	Slight							
OSGR:	384347	400120	Junction Control: TS		Light Conditions:	Light		No. of Vehicles:	2							
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Othr		No. of Casualties:	1							
Accident Reference Number: A2039445				Day: Saturday		Contributory Factors			Date: 06/01/2018				Time: 14:43			
Place Reported: Scene				District: Manchester												
Location: Cheetham Hill Road at junction with Elizabeth Street						Factor Conf Ref			Vehicle Details				Casualty Details			
Description: Both Vehs Trav On Cheetham Hill Rd. V1 Trav Sw Turns Right Into Path Of V2 Trav Ne Ahead. Vehs Collide.						DJudg VLike V1			Type Move From To Skid				Type Sex Age Sev Pupil			
						DFLoo VLike V1			Car TurnR NE NW				1 Drv F 24 Slight			
									Car Ahead SW NE							
Locational Details				Conditions		Accident Details										
Road:	A665/U		Junction Details: Tjun		Road Surface:	Dry		Severity:	Slight							
OSGR:	384348	400120	Junction Control: TS		Light Conditions:	Light		No. of Vehicles:	2							
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Fine		No. of Casualties:	1							
Accident Reference Number: A2063368				Day: Saturday		Contributory Factors			Date: 05/10/2019				Time: 08:55			
Place Reported: Else				District: Manchester												
Location: Queens Road 35 metres SW Of Cheetham Hill Road						Factor Conf Ref			Vehicle Details				Casualty Details			
Description: Both Vehs Trav Sw Queens Rd, V1 Stops & V2 Collides With Rear Of V1. V1 FTS									Type Move From To Skid				Type Sex Age Sev Pupil			
									Car Stopg NE SW				1 Drv F 38 Slight			
									Car Ahead NE SW							
Locational Details				Conditions		Accident Details										
Road:	A6010		Junction Details:		Road Surface:	Dry		Severity:	Slight							
OSGR:	384378	400378	Junction Control: n/a		Light Conditions:	Light		No. of Vehicles:	2							
Speed Limit:	30		Ped Crossing:		Weather Conditions:	Fine		No. of Casualties:	1							

Accident Reference Number: A2037216				Day: Saturday		Contributory Factors			Date: 14/10/2017				Time: 20:50						
Place Reported: Else				District: Manchester		Factor Conf Ref			Vehicle Details				Casualty Details						
Location: Cheetham Hill Road 50 metres North of Manchester Fort Shopping Centre										Type	Move	From	To	Skid	Type	Sex	Age	Sev	Pupil
Description: Both Vehs Trav S Cheetham Hill Rd. V2 Slows For Traffic At Ats, V1 In Front Of V2 Changes Lanes To N/s Collides With V2 & Fts										Car	chInL	N	S						
										Car	Stopg	N	S		1 Drv	M	24	Slight	
															2 Pas	F	10	Slight	
Locational Details				Conditions		Accident Details													
Road:	A665		Junction Details:		Road Surface:	Dry	Severity:		Slight										
OSGR:	384416	400295	Junction Control: n/a		Light Conditions:	Dark	No. of Vehicles:		2										
Speed Limit:	30		Ped Crossing:		Weather Conditions:	N/A	No. of Casualties:		2										

Accident Reference Number: A2033543				Day: Monday		Contributory Factors			Date: 31/07/2017				Time: 17:30						
Place Reported: Scene				District: Manchester		Factor Conf Ref			Vehicle Details				Casualty Details						
Location: Cheetham Hill Road at junction with Queens Road										Type	Move	From	To	Skid	Type	Sex	Age	Sev	Pupil
Description: V1 Trav Sw Queens Rd. V2 Trav N Cheetham Hill Rd. At Jct V2 Carries Through Ats While V1 Goes Through Red ATS Colliding With V2 And Ats										DATS	Poss	V1							
										Car	Ahead	NE	SW		1 Drv	M	29	Slight	
										Car	Ahead	S	N		2 Drv	M	36	Slight	
Locational Details				Conditions		Accident Details													
Road:	A665/A6010		Junction Details: Xrds		Road Surface:	Dry	Severity:		Slight										
OSGR:	384416	400393	Junction Control: TS		Light Conditions:	Light	No. of Vehicles:		2										
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Fine	No. of Casualties:		2										

Accident Reference Number: A2062756				Day: Sunday		Contributory Factors			Date: 29/09/2019				Time: 05:08						
Place Reported: Scene				District: Manchester		Factor Conf Ref			Vehicle Details				Casualty Details						
Location: Cheetham Hill Road at junction with Queens Road										Type	Move	From	To	Skid	Type	Sex	Age	Sev	Pupil
Description: V1 Trav Ne Queens Rd Through Red Ats, V2 Trav N Cheetham Hill Rd Through Green Ats, V1 Collides With O/s Front Of V2										DATS	VLike	V1							
										Car	Ahead	SW	NE						
										Car	Ahead	S	N		1 Drv	F	41	Slight	
															2 Pas	F	42	Slight	
															3 Pas	F	46	Slight	
															4 Pas	F	43	Slight	
Locational Details				Conditions		Accident Details													
Road:	A665/A6010		Junction Details: Xrds		Road Surface:	Wet	Severity:		Slight										
OSGR:	384418	400400	Junction Control: TS		Light Conditions:	Dark	No. of Vehicles:		2										
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Fine	No. of Casualties:		4										

Accident Reference Number: A2036485				Day: Saturday		Contributory Factors			Date: 28/10/2017				Time: 15:26							
Place Reported: Else				District: Manchester		Factor Conf Ref			Vehicle Details				Casualty Details							
Location: Cheetham Hill Road at junction with Queens Road										Type	Move	From	To	Skid	Type	Sex	Age	Sev	Pupil	
Description: Ats Fail At Junction. V1 Trav Sw Queens Rd, Enters Cheetham Hill Rd At Speed, Hitting V2 Trav N Cheetham Hill Rd. V2 Spins And Collides With V3 Trav Sw Queens Rd										DefAT	VLike	V1								
										DFAst	Poss	V1	Car	Ahead	NE	SW	1 Drv	F	46	Slight
										DFLoo	VLike	V1	Car	Ahead	S	N	2 Drv	F	48	Slight
										DInVeh	VLike	V1					4 Pas	F	25	Slight
													Car	Ahead	NE	SW	3 Drv	F	27	Slight
Locational Details				Conditions		Accident Details														
Road:	A665/A6010		Junction Details: Xrds		Road Surface:	Wet	Severity:		Slight											
OSGR:	384419	400394	Junction Control: TS		Light Conditions:	Light	No. of Vehicles:		3											
Speed Limit:	30		Ped Crossing: TSX		Weather Conditions:	Rain	No. of Casualties:		4											

Accident Reference Number: A1075342			Day: Wednesday			Contributory Factors			Date: 16/09/2020			Time: 23:22		
Place Reported: Scene			District: Manchester			Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Cheetham Hill Road at junction with Queens Road						Type Move From To Skid			Type Sex Age Sev Pupil					
Description: V1 Trav E Queens Rd Crosses Jct. V2 (Taxi) Trav N Cheetham Hill Rd Enters Jct, V1 Collides With Front Of V2						DATS Poss V1			Car Ahead W E			1 Drv M 19 Slight		
						DGWor Poss V2			Taxi Ahead S N			2 Drv M 48 Slight		
Locational Details			Conditions			Accident Details								
Road:	A665/A6010	Junction Details: Xrds	Road Surface:	Dry		Severity:	Slight							
OSGR:	384421 400400	Junction Control: TS	Light Conditions:	Dark		No. of Vehicles:	2							
Speed Limit:	30	Ped Crossing: TSX	Weather Conditions:	Fine		No. of Casualties:	2							
Accident Reference Number: A2035277			Day: Friday			Contributory Factors			Date: 15/09/2017			Time: 22:48		
Place Reported: Scene			District: Manchester			Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Cheetham Hill Road at junction with Queens Road						Type Move From To Skid			Type Sex Age Sev Pupil					
Description: V2 Trav S Cheetham Hill Rd, Continues Through Green Ats. V1 Trav Sw Queens Rd Fails To Stop At Red Ats, Collides With V2. V1 Fts						DATS VLike V1			Car Ahead NE SW					
						DSpee Poss V1			Car Ahead N S			1 Drv F 36 Slight		
						DAIcoh Poss V1						2 Pas F 15 Slight		
						DDrugs VLike V1						3 Pas F 30 Slight		
Locational Details			Conditions			Accident Details						4 Pas M 30 Slight		
Road:	A665/A6010	Junction Details: Xrds	Road Surface:	Dry		Severity:	Slight							
OSGR:	384429 400394	Junction Control: TS	Light Conditions:	Dark		No. of Vehicles:	2							
Speed Limit:	30	Ped Crossing: TSX	Weather Conditions:	Fine		No. of Casualties:	4							
Accident Reference Number: A2053974			Day: Tuesday			Contributory Factors			Date: 08/01/2019			Time: 07:10		
Place Reported: Scene			District: Manchester			Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Cheetham Hill Road at junction with Queens Road						Type Move From To Skid			Type Sex Age Sev Pupil					
Description: V1 Trav W Queens Rd Entering Cheetham Hill Rd & Collides With V2 (Pedal Cycle) Trav S Cheetham Hill Rd									Car Ahead E W					
									p/c Ahead N S			1 Rid M 44 Slight		
Locational Details			Conditions			Accident Details								
Road:	A665/A6010	Junction Details: Xrds	Road Surface:	Dry		Severity:	Slight							
OSGR:	384430 400394	Junction Control: TS	Light Conditions:	Dark		No. of Vehicles:	2							
Speed Limit:	30	Ped Crossing: TSX	Weather Conditions:	Fine		No. of Casualties:	1							
Accident Reference Number: A2079048			Day: Wednesday			Contributory Factors			Date: 06/01/2021			Time: 01:45		
Place Reported: Else			District: Manchester			Factor Conf Ref			Vehicle Details			Casualty Details		
Location: Cheetham Hill Road at junction with Balmfield Street						Type Move From To Skid			Type Sex Age Sev Pupil					
Description: V2 (Motorcycle) Trav N Cheetham Hill Rd, V1 Trav S Cheetham Hill Rd Turns Right Onto Balmfield St. V2 Brakes To Avoid Collision, Skidded & Rider Falls Off. V1 Fts									Car TurnR N W					
									m/s Ahead S N Skid			1 Rid M 39 Serious		
Locational Details			Conditions			Accident Details								
Road:	A665/U	Junction Details: Tjun	Road Surface:	Wet		Severity:	Serious							
OSGR:	384433 400500	Junction Control: GW	Light Conditions:	Dark		No. of Vehicles:	2							
Speed Limit:	30	Ped Crossing:	Weather Conditions:	Fine		No. of Casualties:	1							

Accident Reference Number: A2019539					Day: Thursday		Contributory Factors			Date: 11/08/2016					Time: 15:44															
Place Reported: Scene					District: Manchester		Factor			Conf			Ref			Vehicle Details					Casualty Details									
Location: Cheetham Hill Road 35 metres North of Queens Road																Type					Move From To Skid					Type Sex Age Sev Pupil				
Description: C1 Crosses Road E-bound Over 4 Lanes Of Traffic and Is Hit By V1 Trav S Cheetham Hill Rd.																Car					Ahead N S					1 Ped F 14 Serious				
Locational Details					Conditions		Accident Details																							
Road: A665					Junction Details:		Road Surface: Dry			Severity:			Serious																	
OSGR: 384434 400442					Junction Control: n/a		Light Conditions: Light			No. of Vehicles: 1																				
Speed Limit: 30					Ped Crossing: TSX		Weather Conditions: Fine			No. of Casualties: 1																				

Accident Reference Number: A1049122					Day: Thursday		Contributory Factors			Date: 20/09/2018					Time: 10:30															
Place Reported: Else					District: Manchester		Factor			Conf			Ref			Vehicle Details					Casualty Details									
Location: Queens Road at junction with Cheetham Hill Road																Type					Move From To Skid					Type Sex Age Sev Pupil				
Description: Both Vehs Trav Sw Queens Rd, V1 Turning Right Onto Cheetham Hill Rd, V2 Collides Nearside Of V2																Car					TurnR NE N					1 Drv M 56 Slight				
Locational Details					Conditions		Accident Details									Car					Ahead NE SW									
Road: A6010/A665					Junction Details: Xrds		Road Surface: Dry			Severity:			Slight																	
OSGR: 384435 400399					Junction Control: TS		Light Conditions: Light			No. of Vehicles: 2																				
Speed Limit: 30					Ped Crossing: TSX		Weather Conditions: Fine			No. of Casualties: 1																				

Accident Reference Number: A2065786					Day: Friday		Contributory Factors			Date: 13/12/2019					Time: 14:30															
Place Reported: Scene					District: Manchester		Factor			Conf			Ref			Vehicle Details					Casualty Details									
Location: Cheetham Hill Road 25 metres N Of Balmfield Street																Type					Move From To Skid					Type Sex Age Sev Pupil				
Description: V1 Trav N Cheetham Hill Rd, C1 (Child Pedestrian) Location, Movement & Direction Unknown. Collision Occurs																Car					Ahead S N					1 Ped F 12 Slight				
Locational Details					Conditions		Accident Details																							
Road: A665					Junction Details:		Road Surface: Wet			Severity:			Slight																	
OSGR: 384435 400531					Junction Control: n/a		Light Conditions: Light			No. of Vehicles: 1																				
Speed Limit: 30					Ped Crossing:		Weather Conditions: Rain			No. of Casualties: 1																				

Accident Reference Number: A2036383					Day: Wednesday		Contributory Factors			Date: 25/10/2017					Time: 10:40																		
Place Reported: Scene					District: Manchester		Factor			Conf			Ref			Vehicle Details					Casualty Details												
Location: Cheetham Hill Road at junction with Balmfield Street																Type					Move From To Skid					Type Sex Age Sev Pupil							
Description: Both Vehs Trav S Cheetham Hill Rd. V2 Turns Right Into Balmfield St, V1 Begins To Overtake V2, Collides With V2, Leaves Cway To O/s Collides With C2 and C3 (Peds)										DSpee			VLike			V1			Car					O/Tkg N S					2 Ped F 8 Slight				
Locational Details					Conditions		Accident Details			DFLoo			VLike			V1								3 Ped F 20 Slight									
Road: A665/U					Junction Details: Tjun		Road Surface: Dry			Severity:			Slight			Car					TurnR N SW					1 Drv F 46 Slight							
OSGR: 384436 400504					Junction Control: GW		Light Conditions: Light			No. of Vehicles: 2																							
Speed Limit: 30					Ped Crossing:		Weather Conditions: Fine			No. of Casualties: 3																							

Accident Reference Number: A2034047				Day: Friday		Contributory Factors			Date: 11/08/2017				Time: 15:25				
Place Reported: Scene				District: Manchester													
Location: Cheetham Hill Road at junction with Balmfield Street						Factor Conf Ref			Vehicle Details				Casualty Details				
Description: V1 Trav S Cheetham Hill Rd. C1 Crosses Rd W-bound From Behind Vehs. V1 No Time To Stop And Collides With C1						PXMas Poss C1 PCare VLike C1			Type Move From To Skid				Type Sex Age Sev Pupil				
									Car Ahead N S				1 Ped M 9 Serious				
Locational Details				Conditions		Accident Details											
Road:		A665/U		Junction Details: Tjun		Road Surface: Wet		Severity: Serious									
OSGR:		384438 400495		Junction Control: GW		Light Conditions: Light		No. of Vehicles: 1									
Speed Limit: 30				Ped Crossing:		Weather Conditions: Fine		No. of Casualties: 1									

Accident Reference Number: A2044548				Day: Tuesday		Contributory Factors			Date: 05/06/2018				Time: 13:32				
Place Reported: Scene				District: Manchester													
Location: Cheetham Hill Road 10 metres South of Penrose Close						Factor Conf Ref			Vehicle Details				Casualty Details				
Description: V1 (PCV) Trav S Cheetham Hill Rd Pulls Into Bus Stop. C1 On Footpath Loses Balance & Collides With V1's Rear Tyre						PDang Poss C1			Type Move From To Skid				Type Sex Age Sev Pupil				
									PCV Stopg N S				1 Ped M 8 Slight				
Locational Details				Conditions		Accident Details											
Road:		A665/U		Junction Details: Tjun		Road Surface: Dry		Severity: Slight									
OSGR:		384447 400572		Junction Control: GW		Light Conditions: Light		No. of Vehicles: 1									
Speed Limit: 30				Ped Crossing:		Weather Conditions: Fine		No. of Casualties: 1									

Accident Reference Number: A2055106				Day: Friday		Contributory Factors			Date: 22/03/2019				Time: 09:24				
Place Reported: Scene				District: Manchester													
Location: Cheetham Hill Road at junction with Smedley Road (Huxley Avenue)						Factor Conf Ref			Vehicle Details				Casualty Details				
Description: V2 (Stolen) Trav S Cheetham Hill Rd With Speed & Collides With O/s Of V1 Trav W Smedley Rd Waiting To Turn Left Onto Cheetham Hill Rd. V2 FTS						DCare VLike V2 StoVeh VLike V2 DJudg VLike V1			Type Move From To Skid				Type Sex Age Sev Pupil				
									Car wtgTL E S Car Ahead N S				1 Drv M 47 Slight				
Locational Details				Conditions		Accident Details											
Road:		A665/U		Junction Details: Tjun		Road Surface: Dry		Severity: Slight									
OSGR:		384454 400641		Junction Control: GW		Light Conditions: Light		No. of Vehicles: 2									
Speed Limit: 30				Ped Crossing:		Weather Conditions: Wind		No. of Casualties: 1									

Accident Reference Number: A2035665				Day: Monday		Contributory Factors			Date: 07/08/2017				Time: 17:40				
Place Reported: Else				District: Manchester													
Location: Cheetham Hill Road at junction with Huxley Avenue						Factor Conf Ref			Vehicle Details				Casualty Details				
Description: All Vehs Trav S Cheetham Hill Rd. V3 Waiting To Turn Right, V2 Slowed Behind V3 (Taxi). V1 Did Not Slow & Collided With Rear of V2, Pushing V2 Into V3. V1 FTS									Type Move From To Skid				Type Sex Age Sev Pupil				
									LGV Ahead N S Car Waitg N S Taxi wtgTR N W				1 Drv M 24 Slight 2 Pas F 24 Slight				
Locational Details				Conditions		Accident Details											
Road:		A665/U		Junction Details: Tjun		Road Surface: Dry		Severity: Slight									
OSGR:		384455 400668		Junction Control: GW		Light Conditions: Light		No. of Vehicles: 3									
Speed Limit: 30				Ped Crossing: PelX		Weather Conditions: Fine		No. of Casualties: 2									

Abbreviations used in GMAXI Reports for New Contributory Factors - 2005/06

WARNING: Please note that -

Codes 101 to 999 only relate to accidents from 1 April 2005. - New National Factors introduced by DfT

Codes 1001 to 1154 relate to accidents from 1 April 1999 to 31 March 2005 only. - Local Factors introduced

Accidents before 1 April 1999 do not have contributory factors attached.

Code	ContribFactor1Name	ContribFactor1Abb
0	None	
101	Poor or defective road surface	Surf
102	Deposit on road (eg oil, mud, chippings)	Dposit
103	Slippery road (due to weather)	Slip
104	Inadequate/masked signs or road markings	Mark
105	Defective traffic signals	DefATS
106	Traffic calming (eg speed cushions, road humps, chicanes)	TCalm
107	Temporary road layout (eg contraflow)	TmpRd
108	Road layout (eg bend, hill, narrow carriageway)	RdLay
109	Animal or object in carriageway	ObjInC
201	Tyres illegal, defective or under inflated	VTyres
202	Defective lights or indicators	VLight
203	Defective brakes	VBrake
204	Defective steering or suspension	VSteer
205	Defective or missing mirrors	VMirr
206	Overloaded or poorly loaded vehicle or trailer	VLoad
301	Disobeyed automatic traffic signal	DATS
302	Disobeyed Give Way or Stop sign or markings	DGWorS
303	Disobeyed double white line	DWhite
304	Disobeyed pedestrian crossing facility	DPedX
305	Illegal turn or direction of travel	DITurn
306	Exceeding speed limit	DSpeed
307	Travelling too fast for conditions	DFast
308	Following too close	DTgate
309	Vehicle travelling along pavement	DPave
310	Cyclist entering road from pavement	DCPave
401	Junction overshoot	DJnOvr
402	Junction restart	DJnRst
403	Poor turn or manoeuvre	DTurn
404	Failed to signal/misleading signal	DSign
405	Failed to look properly	DFLook
406	Failed to judge other person's path or speed	DJudge
407	Passing too close to cyclist, horse rider or pedestrian	DClose
408	Sudden braking	DBrake
409	Swerved	DSwerv
410	Loss of control	DLossC
501	Impaired by alcohol	DAlcoh
502	Impaired by drugs (illicit or medicinal)	DDrugs
503	Fatigue	DTired
504	Uncorrected, defective eyesight	DEye
505	Illness or disability, mental or physical	DIllns
506	Not displaying lights at night or in poor visibility	DNoLit
507	Cyclist wearing dark clothing at night	DCDark
508	Driver using mobile phone	DMobPh
509	Distraction in vehicle	DDisIn
510	Distraction outside vehicle	DDisOu
601	Aggressive driving	DAggre
602	Careless/reckless/in a hurry	DCare

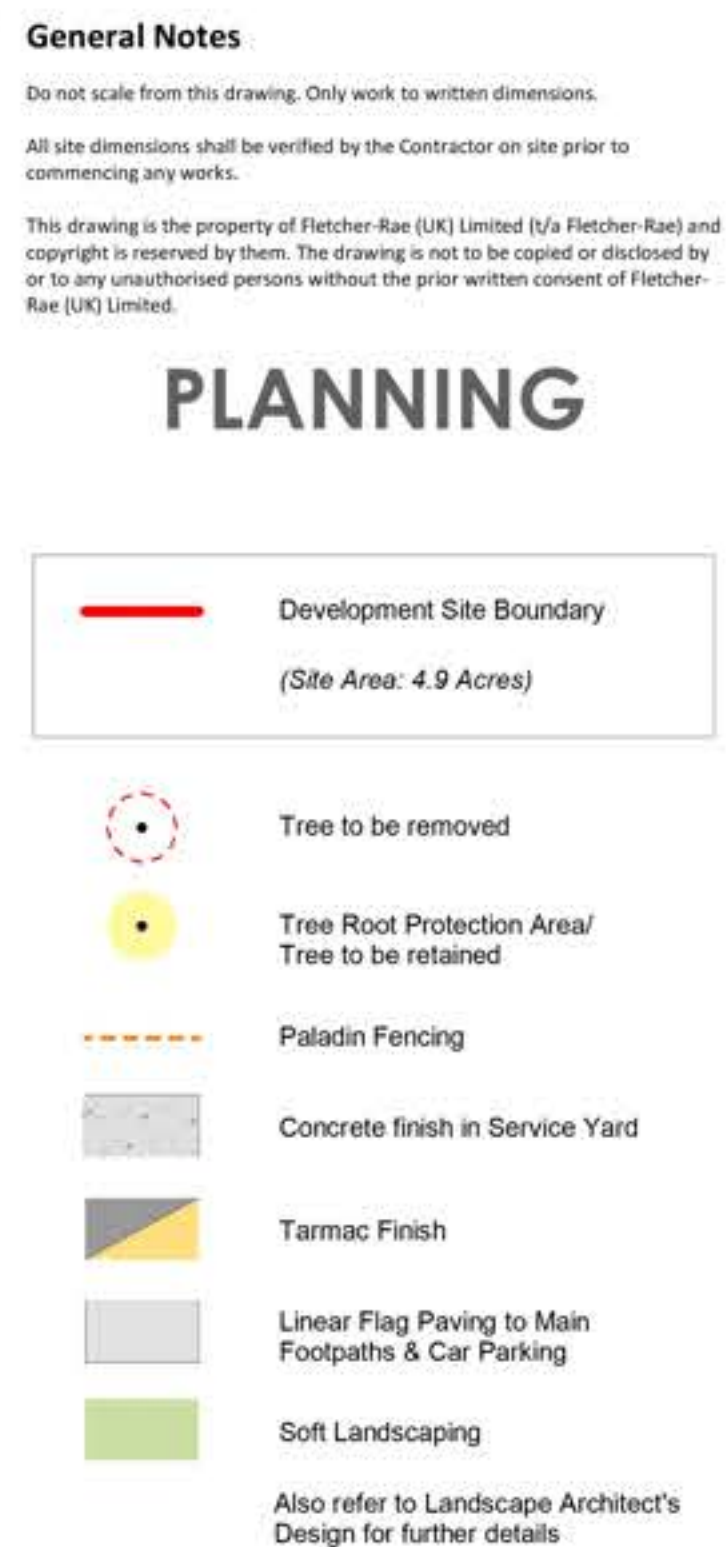
603	Nervous/uncertain/panic	DPanic
604	Driving too slow or conditions or slow vehicle (eg tractor)	DSlow
605	Learner or inexperienced driver/rider	DLearn
606	Inexperience of driving on the left	DInDrL
607	Inexperience with type of vehicle	DInVeh
701	Stationary or parked vehicle(s)	DStat
702	Vegetation	DVeg
703	Road layout (eg bend, winding road, hill crest)	DRdLay
704	Buildings, road signs, street furniture	DBuild
705	Dazzling headlights	DHLigt
706	Dazzling sun	DSun
707	Rain, sleet, snow, or fog	DRain
708	Spray from other vehicles	DFog
709	Visor or windscreen dirty or scratched	DSpray
710	Vehicle blind spot	DWscrn
801	Crossed road masked by stationary or parked vehicle	PXMask
802	Failed to look properly	PFLook
803	Failed to judge vehicle's path or speed	PJudge
804	Wrong use of pedestrian crossing facility	PPedX
805	Dangerous action in carriageway (eg playing)	PDange
806	Impaired by alcohol	PAlcoh
807	Impaired by drugs (illicit or medicinal)	PDrugs
808	Careless/reckless/in a hurry	PCare
809	Pedestrian wearing dark clothing at night	PCloth
810	Disability or illness, mental or physical	Pllns
901	Stolen vehicle	StoVeh
902	Vehicle in course of crime	VCrime
903	Emergency vehicle on call	EmVeh
904	Vehicle door opened or closed negligently	VDoor
999	Other	Other
1001	Failed to stop (mandatory sign)	Fstop
1002	Failed to give way	Fgive
1003	Failed to avoid pedestrian (pedestrian not to blame)	FAPed
1004	Failed to avoid vehicle or object in carriageway	FAObj
1005	Failure to signal/misleading signal	Fsig
1006	Loss of control of vehicle	Loss
1007	Pedestrian entered carriageway without due care	Ped
1008	Passenger fell in or near PSV	Pfell
1009	Swerved to avoid object in carriageway	Swerv
1010	Sudden braking	Brake
1011	Poor turn/manoeuvre	Turn
1012	Poor overtaking	Over
1013	Drove wrong way (e.g. 1-way street)	1Way
1014	Opening door carelessly	Door
1015	Other	Other
1101	Impairment alcohol	Alcoh
1102	Impairment drugs	Drugs
1103	Impairment fatigue	Tired
1104	Impairment illness	Ill
1105	Distraction stress/emotional state of mind	Stress
1106	Distraction physical in/on vehicle	DPhIn
1107	Distraction physical outside vehicle	DPhOut
1108	Behaviour panic	Panic
1109	Behaviour careless/thoughtless/reckless	Care
1110	Behaviour nervous/uncertain	Nerve
1111	Behaviour in a hurry	Hurry

1112	Failure to judge other person's path or speed	Fjudg
1113	Disability	Disab
1114	Failed to look	F2look
1115	Looked but did not see	Nsee
1116	Inattention	Inatt
1117	Person hit wore dark or inconspicuous clothing	Cloth
1118	Other (Personal details)	Pother
1119	Crossed from behind parked vehicle etc	Cross
1120	Ignored lights at crossing	Xlight
1121	Excessive Speed	Speed
1122	Following too close	Tgate
1123	Inexperience of driving	InDri
1124	Inexperience of vehicle	InVeh
1125	Interaction or competition with other road users	Users
1126	Aggressive driving	Aggr
1127	Lack of judgement of own path	Judge
1128	Tyres wrong pressure	Press
1129	Tyres deflation before impact	Deflat
1130	Tyres worn/insufficient tread	Tread
1131	Defective lights or signals	Signal
1132	Defective brakes	Brakes
1133	Other (Vehicle defects)	Vother
1134	Site details poor road surface	Surf
1135	Site details poor/no street lighting	Lightg
1136	Site details inadequate signing	Sign
1137	Site details steep hill	Hill
1138	Site details narrow road	Narr
1139	Site details bend/winding road	Rbend
1140	Site details roadworks	Works
1141	Slippery road	Slip
1142	High winds	Winds
1143	Earlier accident	Earli
1144	Other (Local conditions)	Lother
1145	View windows obscured	Obs
1146	View glare from sun	Glare
1147	View glare from headlights	Head
1148	Surroundings bend/winding road	Bend
1149	Surroundings stationary parked vehicle	Stat
1150	Surroundings moving vehicle	Move
1151	Surroundings buildings, fences, vegetation etc	Fence
1152	Weather (e.g. mist or sleet)	Weath
1153	Failed to see pedestrian or vehicle in blindspot	Blind
1154	Animal out of control	Animal
9999	GMP Out of Range	OoR

Appendix D – Site Masterplan

Schedule of Areas				
	GIA		GEA	
Unit 1	3,400 sqft	316 sqm	3,824 sqft	355 sqm
Total	3,400 sqft	316 sqm	3,824 sqft	355 sqm
Unit 2	14,000 sqft	1,301 sqm	14,680 sqft	1,364 sqm
FF Office @10%	1,400 sqft	130 sqm	1,532 sqft	142 sqm
Total	15,400 sqft	1,431 sqm	16,212 sqft	1,506 sqm
Unit 3	20,500 sqft	1,904 sqm	21,463 sqft	1,994 sqm
FF Office @10%	2,050 sqft	190 sqm	2,181 sqft	203 sqm
Total	22,550 sqft	2,905 sqm	23,644 sqft	2,197 sqm
Unit 4	4,844 sqft	450 sqm	5,206 sqft	484 sqm
Mezzanine	1,086 sqft	101 sqm	1,214 sqft	113 sqm
Total	5,930 sqft	551 sqm	6,420 sqft	596 sqm
Unit 5	4,844 sqft	450 sqm	5,080 sqft	472 sqm
Mezzanine	1,086 sqft	101 sqm	1,185 sqft	110 sqm
Total	5,930 sqft	551 sqm	6,265 sqft	582 sqm
Unit 6	7,000 sqft	650 sqm	7,311 sqft	679 sqm
Mezzanine	1,569 sqft	146 sqm	1,705 sqft	158 sqm
Total	8,569 sqft	796 sqm	9,016 sqft	838 sqm
Unit 7	5,500 sqft	511 sqm	5,813 sqft	540 sqm
Mezzanine	1,249 sqft	116 sqm	1,357 sqft	126 sqm
Total	6,749 sqft	627 sqm	7,170 sqft	666 sqm
Unit 8	5,500 sqft	511 sqm	5,974 sqft	555 sqm
Mezzanine	1,249 sqft	116 sqm	1,395 sqft	130 sqm
Total	6,749 sqft	627 sqm	7,369 sqft	685 sqm
Unit 9	11,000 sqft	1,022 sqm	11,743 sqft	1,091 sqm
FF Office @10%	1,100 sqft	102 sqm	1,231 sqft	114 sqm
Total	12,100 sqft	1,124 sqm	12,974 sqft	1,205 sqm
TOTAL	87,377 SQFT	8,118 SQM	92,893 SQFT	8,630 SQM
SITE AREA	4.9 ACRES	20,000 SQM		
DENSITY		40.6%		

Parking Allocation					
	Cycle Spaces	Sheffield Hoops	EV	Car Parking DDA	Standard
Unit 1	6	3	/	1	3
Unit 2	10	5	6	1	13
Unit 3	10	5	4	1	14
Unit 4	2	1	1	1	2
Unit 5	2	1	1	1	2
Unit 6	4	2	/	1	5
Unit 7	4	2	1	1	4
Unit 8	4	2	1	1	4
Unit 9	8	4	4	1	12
Total	50	25	18	9	59



Kier Property
Project:
Elizabeth Street, Cheetham Hill
Manchester
Sheet Name:
Proposed Site Plan

Project No. Orig. Zone Level Type Role Cls. Dwg No. Rev.
21039-FRA-XXXX-DR-A-10-0003-P1

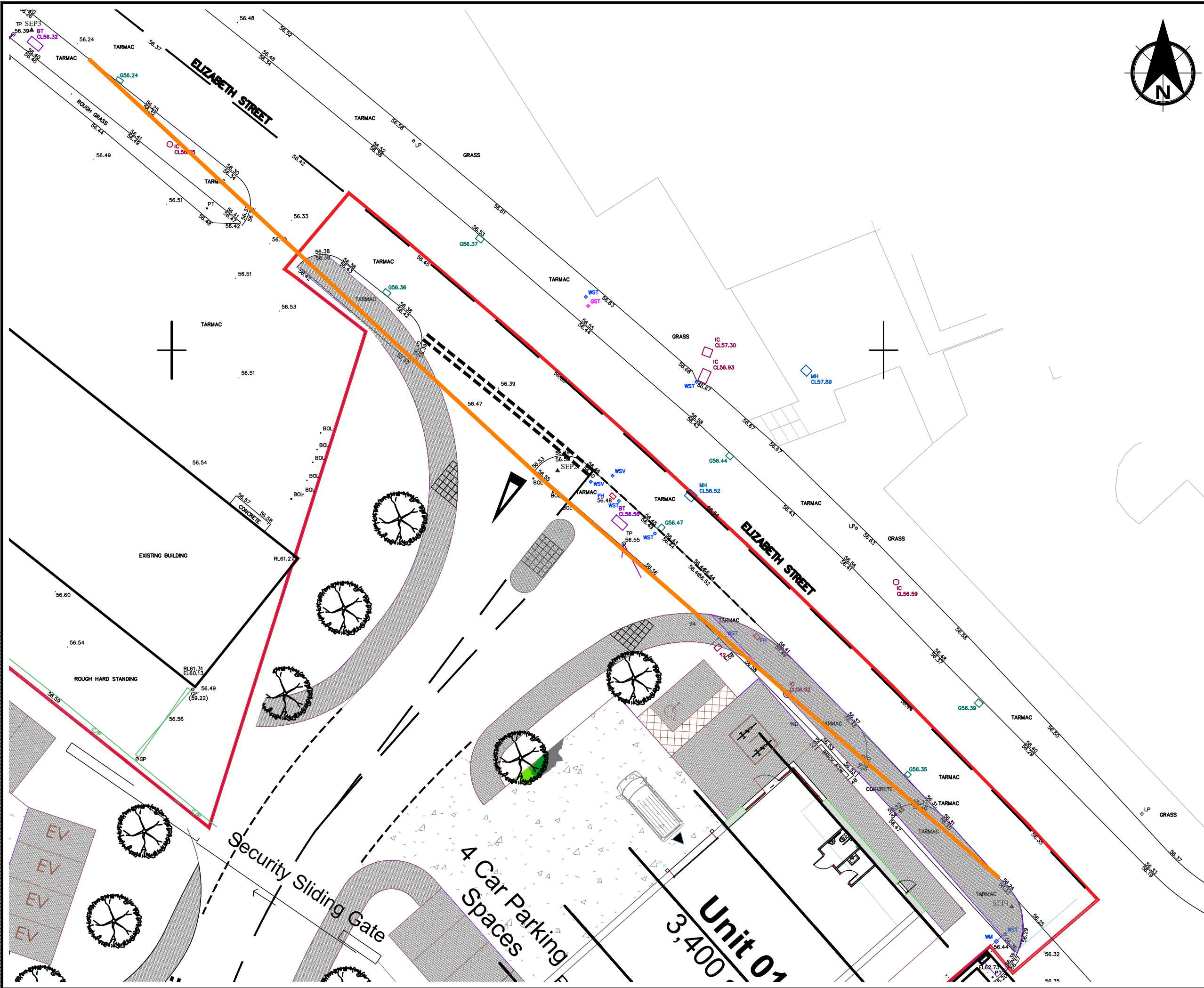
fletcher | rae

Architects | Master Planners | Designers

Hill Quays, 5 Jordan Street, Manchester, M15 4PY

t +44 (0) 161 242 1140
 f +44 (0) 161 242 1141
 w www.fletcher-rae.com
 e info@fletcher-rae.com

Appendix E – Site Access Junction



Appendix F – Stage 1 Road Safety Audit

REPORT

65204495

ELIZABETH STREET, MANCHESTER
STAGE 1 ROAD SAFETY AUDIT



P01

65204495/RA001

21 December 2021

Prepared by
SWECO UK LIMITED
GROVE HOUSE, MANSION GATE DRIVE
LEEDS

On behalf of
MANCHESTER CITY COUNCIL

Change list

VER.	DATE	STATUS	REVIEWED	APPROVED
P01	09/12/2021	FOR OVERSEEING ORGANISATION APPROVAL	AR	MG
P02	20/12/2021	DESIGNER RESPONSE ADDED	MD	MD

Project Details

Report Title	Stage 1 Road Safety Audit
Date	Tuesday, December 21, 2021
Document Reference	65204495/RA001
Revision	P02
Prepared by	Sweco
On behalf of	Manchester City Council

Key personnel

Client	Overseeing Organisation
Kier Trade City LLP 2nd Floor Optimum House Clippers Quay Salford M50 3XP	Manchester City Council Highways Service, Neighbourhoods Directorate 5th Floor Bridgewater House Whitworth Street Manchester M1 6LT <i>Contact: Andy Connell</i>
Designer	Road Safety Audit Team
Sweco Uk Limited Abbey House 4th Floor, 33 Booth Street Manchester M2 3LW <i>Contact: Ian Bullard</i>	Sweco UK Ltd Grove House, Mansion Gate Drive Leeds, LS7 4DN <i>Contact: Martin Magyar (Audit Team Leader)</i> <i>Andrew Russ (Audit Team Member)</i>

Police (<i>only required for Stage 3</i>) n/a	Maintaining Agent (<i>only required for Stage 3</i>) n/a
--	---

Table of contents

1	Introduction	5
1.1	Scheme Description	5
1.2	Road Safety Audit Report	5
1.3	Road Safety Audit Team	5
1.4	Road Safety Audit Brief	5
1.5	Terms of Reference	5
1.6	Road Safety Audit	5
1.7	Site Visit	7
2	Items raised in previous road safety audits	7
3	Items raised at this Stage 1 road safety audit.	8
3.1	General	8
3.2	Geometry	8
3.3	Pedestrians and cyclists	9
3.4	Street lighting	10
4	Audit team statement	12
	Appendix A – Documents forming the Audit Brief	13
	Appendix B – Annotated scheme drawing	14

1 Introduction

1.1 Scheme Description

The proposed scheme is a newly designed priority-controlled junction, with an uncontrolled pedestrian crossing and refuge at the location of the existing Elizabeth Street / Bridcam Street junction in Cheetham Hill, Manchester. The proposed scheme will serve a new industrial development.

The extent of the scheme requiring a road safety audit is the new junction, as far as its tie-ins on Elizabeth Street and to the back of the tangent points on Bridcam Street, including the pedestrian crossing.

Elizabeth Street is an urban single carriageway road that is lit and subject to a 30mph speed limit. Bridcam Street is a private road and does not provide a through-route for vehicles or pedestrians.

1.2 Road Safety Audit Report

This report results from a Stage 1 Road Safety Audit carried out on the Scheme proposed by the Overseeing Organisation Manchester City Council and designed by Sweco UK Limited, at the request of Andy Connell, the Highway Authority Project Sponsor. The Road Safety Audit was carried out during December 2021.

1.3 Road Safety Audit Team

The Road Safety Audit Team membership approved by Andy Connell, from the Overseeing Organisation, was as follows:

Team Leader	Martin Magyar
Team Member	Andrew Russ

1.4 Road Safety Audit Brief

The Road Safety Audit Brief comprised the documents listed in Appendix A. The Road Safety Audit Brief was accepted by the Road Safety Audit Team.

1.5 Terms of Reference

The terms of reference of the audit are as described in GG 119 Rev.2. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria. This Road Safety Audit has been undertaken based on the Road Safety Audit Team's previous experience and knowledge in undertaking Collision Investigation, Road Safety Engineering and Road Safety Audits.

1.6 Road Safety Audit

The Road Safety Audit took place at the Leeds Office of Sweco Ltd during December 2021. The Road Safety Audit was undertaken in accordance with the Road Safety Audit Brief prepared by Sweco.

The scheme has been examined, and this report compiled, only with regards to the safety implications for road users of the scheme as presented. It has not been examined or verified for compliance with any other Standards or criteria. However, to clearly explain a safety problem or the recommendation to resolve a problem, the Audit Team may on occasion have referred to a design standard for information only. Any audit comments should not be construed as implying that a technical audit has been undertaken in any respect.

Any recommendations included within this report should not be regarded as being prescriptive design solutions to the problems raised. They are intended only to indicate a proportionate and viable means of eliminating or mitigating the identified problem, in accordance with GG 119, and in no way, imply that a formal design process has been undertaken. There may be alternative methods of addressing a problem which would be equally acceptable in achieving the desired elimination or mitigation and these should be considered when responding to this report.

All comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan supplied with the Road Safety Audit Brief in Appendix B.

1.7 Site Visit

The site was visited by all Road Safety Audit Team members as detailed below:

Day/Date	Time from	Time to	Light Conditions	Weather	Surface	Traffic
Friday, 03 December 2021	09:45 am	10:30 am	Daylight	Fine	Wet / Damp	Motor Moderate Cyclist Light Pedestrian Light

Notes:

The levels of traffic observed are relative to the average traffic flows expected on the site.

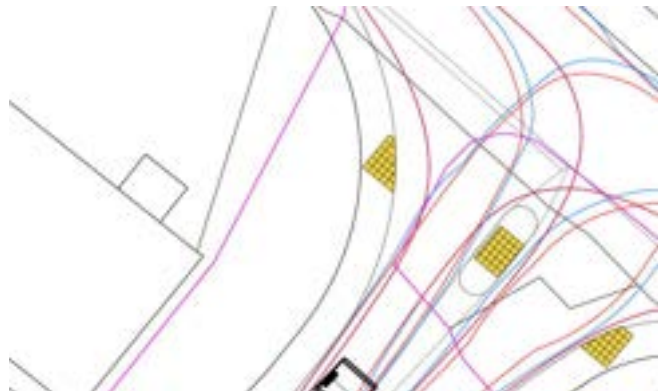
The on-going coronavirus pandemic may have had a limited influence on traffic flows at the time of the site visit, though no specific restrictions on workplace attendance or shopping were in place at the time.

2 Items raised in previous road safety audits

There have been no previous road safety audits of this scheme.

3 Items raised at this Stage 1 road safety audit.

Ref	Location	Summary	Description	Recommendation	Photographs / Plans
3.1	General				
3.1.1	Elizabeth Street	Parked vehicles cause head-on vehicle collisions.	There are currently no parking restrictions on the southern side of Elizabeth Street, in the vicinity of the Bridcam Street junction. The re-designed junction will generate a significant increase in turning movements in and out of Bridcam Street. If vehicles are parked in the vicinity of the junction, vehicles negotiating the junction may be forced to move into the opposing lane, with the potential for head-on collisions.	It is recommended that measures to deter parking on the southern side of Elizabeth Street, in the vicinity of the proposed access are implemented.	 <i>Southern side of Elizabeth Street</i>
	Designer Response: In liaison with MCC, a TRO will be implemented by MCC and funded by the developer which provides no waiting at any time on the southern frontage of Elizabeth Street. This measure will mitigate the issue raised in 3.1.1				
3.2	Geometry				
3.2.1	Elizabeth Street / Bridcam Street junction	Restricted side road visibility causes side-on and restart collisions.	Drawing PR1398_SK10 shows a 2.4 by 43m visibility splay for the side road of the proposed junction. The visibility splay to the right appears to dissect a small section of land that is not part of the footway, and presumably not highway land. This land could be built on, or fenced off, in the future, so restricting visibility for vehicles exiting the side road. Restricted visibility could lead to vehicle-to-vehicle collisions.	It is recommended that unrestricted visibility is provided in both directions from the side road.	 <i>Extract from visibility splay drawing</i>
	Designer Response: The section of land dissected by the visibility splay is within the developers control and the landscape plan for the site shows this area is proposed to be grassed with no vertical planting to obstruct visibility. The footway adjacent to this section of land is proposed to be improved to provide a new and level surface along the site frontage. As part of the detailed design process, to be undertaken as part of a Section 278 agreement, the section of land behind the footway could be hard landscaped as part of the footway resurfacing works and offered for adoption (under Section 38) if the Highway Authority (MCC) deem it necessary to prevent obstruction in the future.				

Ref	Location	Summary	Description	Recommendation	Photographs / Plans
3.2.2	Elizabeth Street / Bridcam Street junction	Large junction radius encourages vehicles to enter the main road without yielding	The exit taper for the side road has a large radius This could encourage vehicles exiting the side road to proceed into the main road without slowing and checking for oncoming vehicles.	Design the junction such that it encourages all vehicle types to slow down before entering the main road.	 Extract from swept path drawing
Designer Response: The large exit radius at the junction is proposed to reduce the potential for large HGVs to encroach into the opposing traffic lane when turning left out of the site. Also, in the designer's view, vehicles exiting the site are likely to be slow moving given the shortness of the access road. On balance, it is considered that the geometry of the junction is appropriate for the types of vehicles most likely to use it.					
3.3	Pedestrians and cyclists				
3.3.1	Elizabeth Street	Pedestrians crossing Elizabeth Street come into conflict with vehicles.	The development of the land to the south of Elizabeth Street into an industrial site will create a pedestrian desire line between it and the existing retail park on the north side of Elizabeth Street. This will likely result in a greater number of pedestrians wishing to cross Elizabeth Street in the vicinity of Bridcam Street where there is no pedestrian crossing facility to use. The likelihood of pedestrian-vehicle conflicts will be exacerbated by the additional vehicular movements created by the new access. This could result in vehicle / pedestrian collisions.	It is recommended that a pedestrian crossing is provided on Elizabeth Street that is suitable for the anticipated number of pedestrians.	 Steps into retail park, opposite location of new junction
Designer Response: The Department for Transport Note LTN1/95 suggest factors which should be examined when considering the need for a new pedestrian crossing. Although the document focuses on the provision of zebra crossings and signalised crossings, it also notes consideration of do-nothing and the use of localised traffic management as a feasible option.. The principal elements to be considered are noted as: 85 th percentile traffic speeds, traffic flows, pedestrian flows, difficulty of crossing, historic accident records, types of users and proximity to junctions. The 7-day traffic survey identified that Elizabeth Street experiences daily traffic flows of 7,018 (AADT). Although no existing pedestrian flow data are available, the site is currently vacant and it is therefore expected that minimal pedestrian demand currently exists at the noted desire line. The Transport Assessment identifies the daily total of pedestrians which are likely to arrive on foot within Section 5.4 – Modal Split. The assessment identifies that the proposed development is anticipated to generate 85 bus trips; 18 train trips; 10 tram trips; and 79 pedestrian trips, all of which are expected to access the site on foot via the proposed access, a daily total of 192 two-way pedestrian movements. Given the locations of the closest bus stops, the railway station and the configuration of the highway network in the vicinity of the site, it is expected that the majority of these walking trips will arrive from either the east					

Ref	Location	Summary	Description	Recommendation	Photographs / Plans
		or west, and utilise the existing crossing points at the two junctions either end of Elizabeth Street and the footway along the southern frontage of Elizabeth Street. Therefore only a very small number of pedestrian crossing movements are anticipated at the noted desire line, the majority of which are likely to be limited to future occupants of the site accessing the facilities provided within the adjacent retail park. Difficulty of crossing is determined by the width of the road, prevailing traffic speed and the effect of adjacent junctions. Elizabeth Street is only around 7.0m wide and the signal controlled junction at its eastern end means that gaps in passing traffic are frequently available. The 85%ile traffic speeds are also measured at well below the prevailing speed limit of 30mph. A review of the personal injury accident records has also demonstrated that there are no historical road safety concerns involving pedestrians in the vicinity of the site. Overall, given the very low anticipated crossing demand between the site and the retail park and the other factors outlined above, there is no justification for the provision of a pedestrian crossing facility on Elizabeth Street at the location identified. In addition, the desire line leads to a set of steps to access the retail park which means that wheelchair, pushchair and otherwise ambulatory limited pedestrians are unlikely to utilise the potential crossing point. Therefore, the provision of dropped kerbs at this location are not considered necessary.			
3.3.2	Elizabeth Street	Pedestrians crossing Elizabeth Street may slip, trip or fall.	The development of the land to the south of Elizabeth Street into an industrial site will create a pedestrian desire line between it and the existing retail park on the north side of Elizabeth Street. This will likely result in a number of pedestrians wishing to cross Elizabeth Street where there is no pedestrian crossing facility to use. This could result in slips, trips and falls due to the raised kerbs.	It is recommended that a pedestrian crossing is provided on the desire line between the retail park and proposed development on the south side of Elizabeth Street that is accessible by all pedestrians, including the elderly and those with walking difficulties.	 <i>View from the retail park steps across the Elizabeth Street desire line to the proposed development</i>
	Designer Response: See response to 3.3.1. There is no justification for the provision of dropped kerbs on Elizabeth Street at the location identified.				
3.4	Street lighting				

Ref	Location	Summary	Description	Recommendation	Photographs / Plans
3.4.1	Elizabeth Street	Reduced visibility causes vehicle-vehicle and vehicle-pedestrian collisions.	The existing street lighting along Elizabeth Street does not appear to be evenly spaced along the road, with a gap in provision along the southern side of the road where it passes Bridcam Street and the proposed development access. Sudden changes in the intensity of lighting can affect people with poor night vision, including older drivers, and the reduced visibility of vehicles exiting the development or pedestrians crossing the access could result in vehicle-vehicle and vehicle-pedestrian collisions.	Ensure the street lighting provision is adequate for the safe use of the new junction in all light conditions.	 <i>Southern side of Elizabeth Street, showing gap in street lighting provision</i>
Designer Response: The adequacy of the existing street lighting will be examined as part of detailed design in liaison with the highway authority (MCC).					

4 Audit team statement

We certify that this Road Safety Audit has been carried out in accordance with GG 119 Revision 2.

Road Safety Audit Team Leader

Name	Martin Magyar
Signed	
Qualification	BEng, MSc (Eng), CEng MICE, MSoRSA Certificate of Competence
Position	Principal Engineer, Sweco
Date:	09/12/2021

Road Safety Audit Team Member

Name	Andrew Russ
Signed	
Qualification	EngTech MCIHT MSoRSA Certificate of Competence
Position	Senior Engineer, Sweco
Date:	09/12/2021

Appendix A – Documents forming the Audit Brief

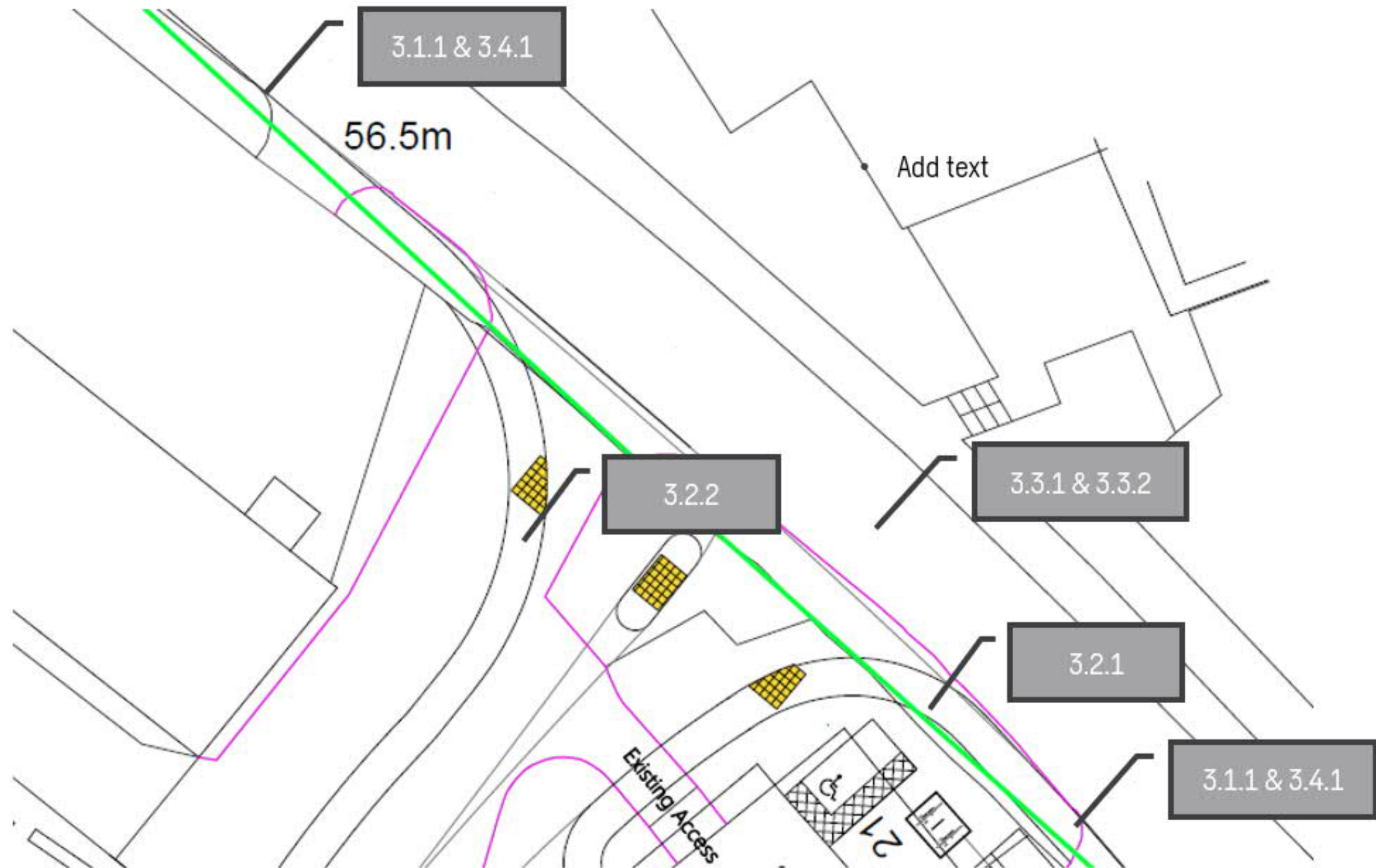
Documents

Ref	Title	Date
-	Elizabeth Street RSA1 – GG119 Road Safety Audit Brief	02/12/2021
12220	Manchester Speed Survey Report November 2021	23/11/2021
12220	Manchester – ATC Survey Results – Site 4 Elizabeth Street	-
12220	Manchester Speed Survey	-
-	Reported Injury Accidents in specified area of Cheetham Hill Road, Manchester, 01/05/2016 to 30/04/2021	11/11/2021
-	Elizabeth Street – Development Flows	-

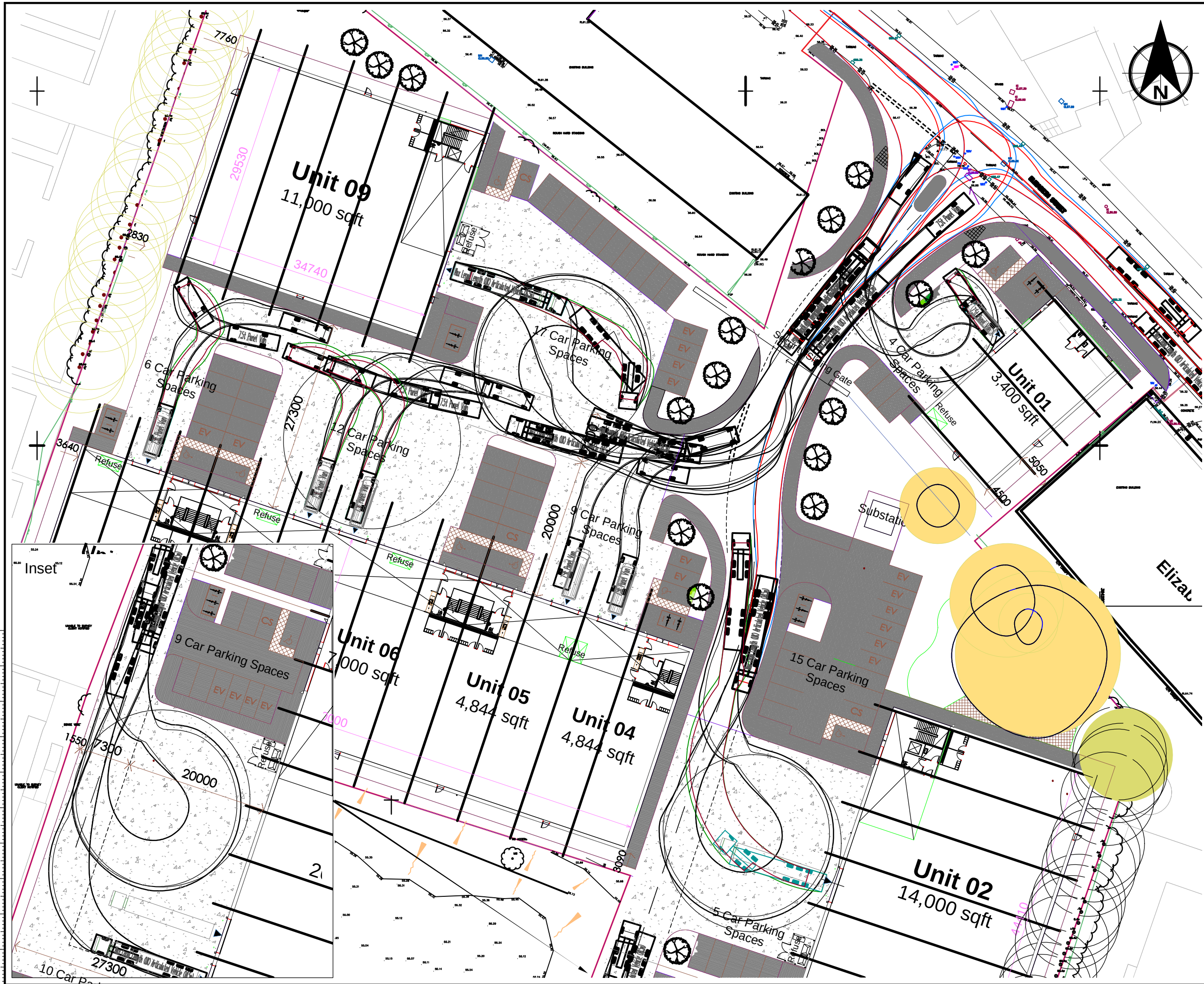
Drawings

Drawing Number	Title
PR1398_SK10_Rev E	Proposed Site Plan Option 7 – Existing Layout
PR1398_SK10_Rev E	Proposed Site Plan Option 7 – Swept Paths
PR1398_SK10_Rev E	Proposed Site Plan Option 7 – 2.4m x 43m Visibility

Appendix B – Annotated scheme drawing

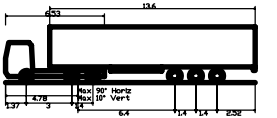


Appendix G – Swept Paths to Service Yards

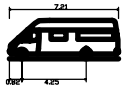


NOTES

1. NOTES



Max Legal Length (UK) Articulated Vehicle (16.5m)
Overall Length 16.50m
Overall Width 2.55m
Overall Body Height 3.96m
Min Body Ground Clearance 0.41m
Max Track Width 2.50m
Lock to lock time 6.80s
Kerb to Kerb Turning Radius 5.50m



7.5t Panel Van
Overall Length 7.21m
Overall Width 2.21m
Overall Body Height 2.21m
Min Body Ground Clearance 0.31m
Track Width 1.80m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 7.40m

Rev.	Date	Amendment Details	Drawn	Chk'd	App'd

This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which Sweco UK Limited was commissioned. Sweco UK Limited accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify Sweco UK Limited for all loss or damage arising therefrom.

Choose office address from drop down



Client
Kier Property Ltd

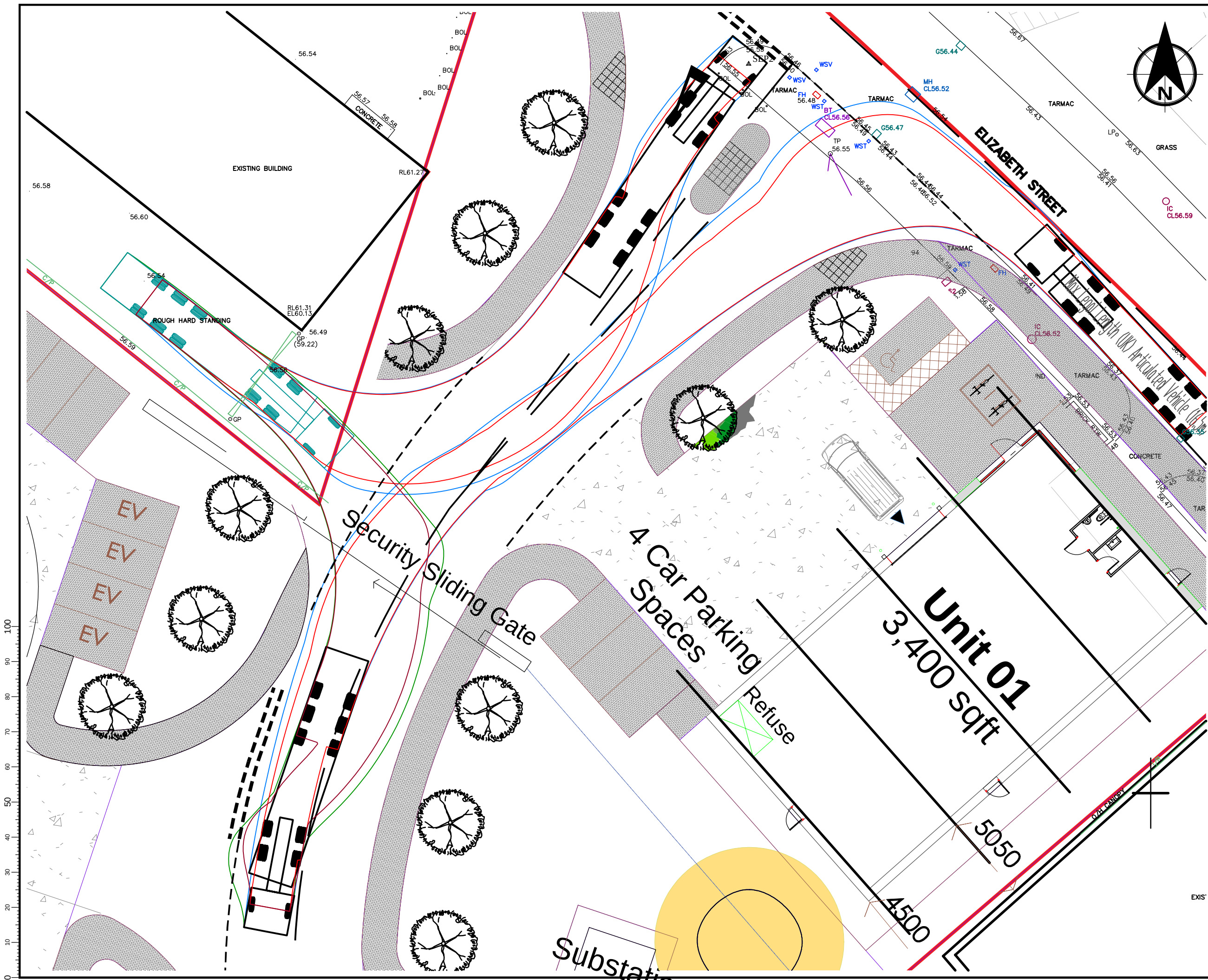
Drawing Status
FOR PLANNING

Project Title
LAND OFF ELIZABETH STREET
CHEETHAM HILL

Drawing Title
SITE LAYOUT
SWEEP PATH ANALYSIS

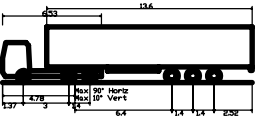
Scale	Designed	Drawn	Checked	Approved
1:500	IB	IB	NJR	NJR
Original Size	Date	Date	Date	Date
A3	17/01/22	17/01/22	17/01/22	17/01/22
Drawing Number	Revision			
65204495_SK_002	/			

Appendix H – Swept Path to 23a Service Area



NOTES

1. NOTES



Max Legal Length (UK) Articulated Vehicle (16.5m)	
Overall Length	16.500m
Overall Width	2.550m
Overall Body Height	3.681m
Min Body Ground Clearance	0.411m
Max Track Width	2.500m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	6.530m

Rev.	Date	Amendment Details	Drawn	Chk'd	App'd

This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which Sweco UK Limited was commissioned. Sweco UK Limited accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify Sweco UK Limited for all loss or damage arising therefrom.

Choose office address from drop down

SWECO 

Client

Kier Property Ltd

Drawing Status

FOR PLANNING

Project Title

LAND OFF ELIZABETH STREET
CHEETHAM HILL

Drawing Title

SERVICE ACCESS TO 23a
SWEPT PATH ANALYSIS

Scale 1:200	Designed IB	Drawn IB	Checked NJR	Approved NJR
Original Size A3	Date 17/01/22	Date 17/01/22	Date 17/01/22	Date 17/01/22
Drawing Number 65204495 SK 003				Revision /

Appendix I – Swept Paths to Substation

Appendix J – MCC Applicable Parking Standards

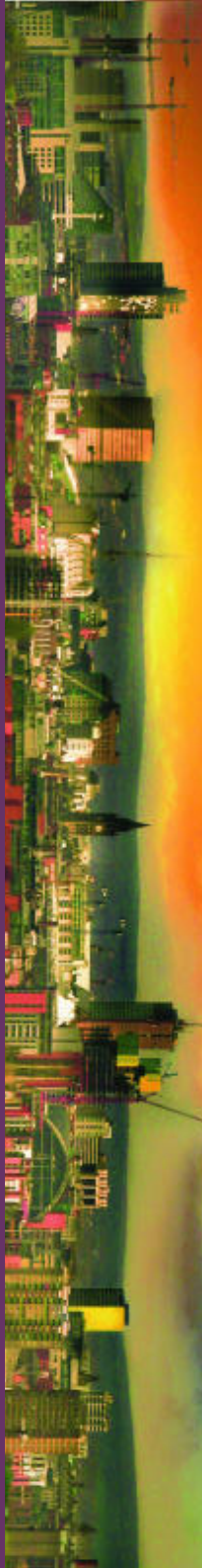


15 Appendix B Parking Standards

All development must provide the appropriate parking standards as highlighted below. Standards for disabled people, cycle and motorcycle parking are minimums. Standards for car parking are maximums and may be subject to a further reduction when consideration is given to accessibility of the particular site.

Maximum standards for car parking do not apply to the City Centre as each development in the City Centre will be considered on a case by case basis. The standards for the rest of the City are given for two different areas:-

- District Centres
- Areas not within the City Centre or District Centres



Land Use	Maximum number of car parking spaces		Minimum number of spaces required for:-		
	District Centres	Areas not within the City Centre or District Centres	Disabled people's parking as percentage of total (Citywide)		Cycles (Citywide)
			Up to 200 in total	Over 200 in total	
B1: Business					
Stand alone offices	1 space per 35sqm	1 space per 30sqm	Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1 space per 200sqm minimum of 2 spaces
Business Parks	1 space per 40sqm	1 space per 35sqm	Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1 space per 200sqm minimum of 2 spaces
B2: General Industry					
General Industry	1 space per 60sqm	1 space per 45sqm	Individual bays for each disabled employee plus 2	6 bays plus 2% of total capacity	1 space per 450sqm minimum of 2 spaces

Land Use	Maximum number of car parking spaces		Minimum number of spaces required for:-		
	District Centres	Areas not within the City Centre or District Centres	Disabled people's parking as percentage of total (Citywide)		Cycles (Citywide)
			Up to 200 in total	Over 200 in total	
			bays or 5% of total capacity whichever is greater		
B8 Storage and Distribution					
Storage and Distribution	1 space per 100sqm		Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1 space per 850sqm minimum of 2 spaces
C1: Hotels					
Hotels	1 space per bedroom including staff		3 bays or 6% of total capacity whichever is greater	4 bays plus 4% of total capacity	1 space per 10 guest rooms minimum of 2 spaces
D1: Non-Residential Institutions					

Appendix K – TRICs Data

TRICS 7.8.3

Trip Rate Parameter: Gross

Filtering Summary

Land Use	02/C	EMPLOY MENT/IN DUSTRIAL UNIT
----------	------	---------------------------------------

Selected Trip Rate Calculation 690-

Actual Trip Rate Calculation 690-

	Minimum	Maximum
	:	:
Date Range	01/01/13	14/11/19

Parking Spaces Range All

Days of the week selected	Tuesday	2
	Wednesd	1
	Thursday	4

Main Location Types selected	Suburban	3
	Edge of	2
	Neighbou	1
	Free	1

Population within 500m All

	000 or		
Population <1 Mile ranges selected	1 Less	2	
	5 001 to 10	0	1
	10 001 to 15	0	1
	15 001 to 20	0	1
	25 001 to 50	0	2

	001 to		
Population <5 Mile ranges selected	5 25	0	1
	25 001 to 50	0	1
	50 001 to 75	0	2
	001 to		
	125 250	0	2
	001 to		
	250 500	0	1

Car Ownership <5 Mile ranges	0.6 to 1.0	2
	1.1 to 1.5	3
	1.6 to 2.0	2

PTAL Rating	No PTAL	7
-------------	---------	---

Filter by Site Operations All

TRIP RATE CALCULATION

Land Use	02 -
Category	C -
MULTI-MODAL TOTAL VEHICLES	

Selected regions and areas:

2 SOUTH			
HC	HAMPSHI RE WEST	1 days	
WS	SUSSEX	1 days	
3 SOUTH			
DV	DEVON	1 days	
4 EAST			
NF	NORFOLK	1 days	
6 WEST			
	HEREFOR DSHIRE	1 days	
9 NORTH			
	CB	CUMBRIA	1 days
10 WALES			
CF	CARDIFF	1 days	

This section displays the number of

Primary Filtering selection:

This data displays the chosen trip

Parameter:	Gross
Actual Range:	690 to
Range Selected by User:	690 to

Public Transport Provision:

Selection by:	Include all
---------------	-------------

Date Range:	01/01/13
-------------	----------

This data displays the range of

Selected survey days:

Tuesday	2 days
Wednesday	1 days
Thursday	4 days

This data displays the number of

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

the total
adding up whilst
to the ATC
overall surveys
number are
of surveys undertaki
in the ng using
selected machines.

Selected Locations:

Town Centre	0
Edge of Town Centre	0
Suburban Area (PPS6 Out of	3
Edge of Town	2
Neighbourhood Centre (PPS6 Local	1
Free Standing (PPS6 Out of Town)	1
Not Known	0

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free

	Edge of Town	Suburban Area	Neighbourhood Centre	Edge of Town Centre	Town Centre and Not Known.
--	--------------	---------------	----------------------	---------------------	----------------------------

Selected Location Sub Categories:

Industrial Zone	4
Commercial Zone	1
Development Zone	0
Residential Zone	0
Retail Zone	0
Built-Up Zone	0
Village	1
Out of Town	1
High Street	0
No Sub Category	0

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of

	Industrial Zone	Development Zone	Residential Zone	Retail Zone	Built-Up Zone	Village	Out of Town	High Street and No Sub Category.
--	-----------------	------------------	------------------	-------------	---------------	---------	-------------	----------------------------------

Secondary Filtering selection:

Use Class:

Not Known 7 days

This data displays the number of which

Filter by Site Operations

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	2 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	2 days

This data displays the number of

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	1 days

This data displays the number of

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	3 days
1.6 to 2.0	2 days

This data displays the number of within a

Travel Plan:

Yes 1 days

No 6 days

This data displays the number of and the

PTAL Rating:

No PTAL Present 7 days

This data displays the number of

LIST OF SITES relevant to selection

Site(1):	CB-02-C-	Site area: 0.79 hect
		Gross
Development Name:	DOMINO' S PIZZA	floor area: 2950 sqm
Location:	PENRITH	Parking spaces: 48
		No of Employee
Postcode:	CA11 9BN	s: 70
Main Location Type:	Edge of Town	Survey Date: 10/06/2014
	Industrial	Survey
Sub-Location Type:	Zone	Day: Tuesday
PTAL:	n/a	
Site(2):	CF-02-C-	Site area: 2.67 hect
		Gross
Development Name:	BAKERY	floor area: 14125 sqm
Location:	CARDIFF	Parking spaces: 147
		No of Employee
Postcode:	CF14 4UZ	s: 225
	Suburban Area	
Main Location Type:	(PPS6 Out of Centre)	Survey Date: 06/10/2016
	Industrial	Survey
Sub-Location Type:	Zone	Day: Thursday
PTAL:	n/a	
Site(3):	DV-02-C-ENERGY RECOVER	Site area: 0.95 hect
	Y	Gross floor area: 3513 sqm
Development Name:		Parking
Location:	EXETER	spaces: 42
		No of Employee
Postcode:	EX2 8QE	s: 17
	Suburban Area	
Main Location Type:	(PPS6 Out of Centre)	Survey Date: 06/07/2017
	Industrial	Survey
Sub-Location Type:	Zone	Day: Thursday
PTAL:	n/a	
Site(4):	HC-02-C-GIN	Site area: 2.10 hect
		Gross
Development Name:	DISTILLER Y	floor area: 8000 sqm
Location:	LAVERST OKE	Parking spaces: 126
		No of Employee
Postcode:	RG28 7NR	s: 75

	Neighbourhood Centre (PPS6 Local Centre)	Survey Date:	09/05/2018
Main Location Type:		Survey Day:	Wednesday
Sub-Location Type:	Village		
PTAL:	n/a		
Site(5):	HE-02-C-THERMAL PROCESSING NG	Site area: Gross floor area:	0.63 hect 1880 sqm
Development Name:	HEREFORD	Parking spaces:	27
Location:	D	No of Employee	
Postcode:	HR1 1JR	s:	15
	Edge of Town	Survey Date:	22/10/2013
Main Location Type:	Commercial Zone	Survey Day:	Tuesday
Sub-Location Type:	n/a		
PTAL:	n/a		
Site(6):	NF-02-C-EXHIBITION DESIGN &	Site area: Gross floor area:	0.09 hect 690 sqm
Development Name:		Parking spaces:	7
Location:	NORWICH	No of Employee	
Postcode:	NR3 3ST	s:	9

	Suburban Area (PPS6 Out of Centre)	Survey Date:	14/11/2019
Main Location Type:	Industrial Zone	Survey Day:	Thursday
Sub-Location Type:	n/a		
PTAL:	n/a		
Site(7):	WS-02-C-AVIATION COMPANY	Site area: Gross floor area:	3.72 hect 11375 sqm
Development Name:	NEAR HORSHA	Parking spaces:	441
Location:		No of Employee	
Postcode:	RH13 0AS	s:	372
	Free Standing (PPS6 Out of Town)	Survey Date:	23/01/2014
Main Location Type:	Out of Town	Survey Day:	Thursday
Sub-Location Type:	n/a		
PTAL:	n/a		

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 the selected trip rate calculation the day of the week and date of the survey and whether the survey

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: TOTAL VEHICLES

Time Range	ARRIVALS				DEPARTU				TOTALS
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0.102	1	2950	0	1	2950	0.102
06:00-06:30	2	7163	0.028	2	7163	0	2	7163	0.028
06:30-07:00	2	7163	0.119	2	7163	0.042	2	7163	0.161
07:00-07:30	7	6076	0.075	7	6076	0.014	7	6076	0.089
07:30-08:00	7	6076	0.122	7	6076	0.021	7	6076	0.143
08:00-08:30	7	6076	0.374	7	6076	0.028	7	6076	0.402
08:30-09:00	7	6076	0.181	7	6076	0.045	7	6076	0.226
09:00-09:30	7	6076	0.085	7	6076	0.033	7	6076	0.118
09:30-10:00	7	6076	0.12	7	6076	0.061	7	6076	0.181
10:00-10:30	7	6076	0.103	7	6076	0.061	7	6076	0.164
10:30-11:00	7	6076	0.108	7	6076	0.063	7	6076	0.171
11:00-11:30	7	6076	0.052	7	6076	0.068	7	6076	0.12
11:30-12:00	7	6076	0.04	7	6076	0.042	7	6076	0.082
12:00-12:30	7	6076	0.066	7	6076	0.085	7	6076	0.151
12:30-13:00	7	6076	0.073	7	6076	0.106	7	6076	0.179
13:00-13:30	7	6076	0.075	7	6076	0.092	7	6076	0.167
13:30-14:00	7	6076	0.042	7	6076	0.061	7	6076	0.103
14:00-14:30	7	6076	0.047	7	6076	0.045	7	6076	0.092
14:30-15:00	7	6076	0.045	7	6076	0.045	7	6076	0.09
15:00-15:30	7	6076	0.045	7	6076	0.073	7	6076	0.118
15:30-16:00	7	6076	0.016	7	6076	0.054	7	6076	0.07
16:00-16:30	7	6076	0.031	7	6076	0.082	7	6076	0.113
16:30-17:00	7	6076	0.026	7	6076	0.12	7	6076	0.146
17:00-17:30	7	6076	0.047	7	6076	0.066	7	6076	0.113
17:30-18:00	7	6076	0.073	7	6076	0.343	7	6076	0.416
18:00-18:30	7	6076	0.059	7	6076	0.158	7	6076	0.217
18:30-19:00	7	6076	0.033	7	6076	0.059	7	6076	0.092
19:00-19:30	3	7442	0.04	3	7442	0.036	3	7442	0.076
19:30-20:00	3	7442	0.018	3	7442	0.063	3	7442	0.081
20:00-20:30	2	5475	0.018	2	5475	0.119	2	5475	0.137
20:30-21:00	2	5475	0.018	2	5475	0.046	2	5475	0.064
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			2.281			2.131			4.412

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: TAXIS

Time Range	ARRIVALS					DEPARTURES			TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	
00:00-00:30										
00:30-01:00										
01:00-01:30										
01:30-02:00										
02:00-02:30										
02:30-03:00										
03:00-03:30										
03:30-04:00										
04:00-04:30										
04:30-05:00										
05:00-05:30		1	2950	0	1	2950	0	1	2950	0
05:30-06:00		1	2950	0	1	2950	0	1	2950	0
06:00-06:30		2	7163	0	2	7163	0	2	7163	0
06:30-07:00		2	7163	0	2	7163	0	2	7163	0
07:00-07:30		7	6076	0	7	6076	0	7	6076	0
07:30-08:00		7	6076	0	7	6076	0	7	6076	0
08:00-08:30		7	6076	0	7	6076	0	7	6076	0
08:30-09:00		7	6076	0	7	6076	0	7	6076	0
09:00-09:30		7	6076	0	7	6076	0	7	6076	0
09:30-10:00		7	6076	0.002	7	6076	0.002	7	6076	0.004
10:00-10:30		7	6076	0	7	6076	0	7	6076	0
10:30-11:00		7	6076	0	7	6076	0	7	6076	0
11:00-11:30		7	6076	0	7	6076	0	7	6076	0
11:30-12:00		7	6076	0	7	6076	0	7	6076	0
12:00-12:30		7	6076	0	7	6076	0	7	6076	0
12:30-13:00		7	6076	0.002	7	6076	0.002	7	6076	0.004
13:00-13:30		7	6076	0	7	6076	0	7	6076	0
13:30-14:00		7	6076	0	7	6076	0	7	6076	0
14:00-14:30		7	6076	0	7	6076	0	7	6076	0
14:30-15:00		7	6076	0	7	6076	0	7	6076	0
15:00-15:30		7	6076	0.009	7	6076	0.009	7	6076	0.018
15:30-16:00		7	6076	0	7	6076	0	7	6076	0
16:00-16:30		7	6076	0.002	7	6076	0.002	7	6076	0.004
16:30-17:00		7	6076	0.002	7	6076	0.002	7	6076	0.004
17:00-17:30		7	6076	0	7	6076	0	7	6076	0
17:30-18:00		7	6076	0	7	6076	0	7	6076	0
18:00-18:30		7	6076	0	7	6076	0	7	6076	0
18:30-19:00		7	6076	0	7	6076	0	7	6076	0
19:00-19:30		3	7442	0	3	7442	0	3	7442	0
19:30-20:00		3	7442	0	3	7442	0	3	7442	0
20:00-20:30		2	5475	0	2	5475	0	2	5475	0
20:30-21:00		2	5475	0	2	5475	0	2	5475	0
21:00-21:30		1	8000	0	1	8000	0	1	8000	0
21:30-22:00		1	8000	0	1	8000	0	1	8000	0
22:00-22:30										
22:30-23:00										
23:00-23:30										
23:30-24:00										
Daily Trip Rates:			0.017			0.017				0.034

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: OGVS

Time Range	ARRIVALS			DEPARTU RES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0	1	2950	0
06:00-06:30	2	7163	0.007	2	7163	0	2	7163	0.007
06:30-07:00	2	7163	0.007	2	7163	0	2	7163	0.007
07:00-07:30	7	6076	0.014	7	6076	0.005	7	6076	0.019
07:30-08:00	7	6076	0.012	7	6076	0.012	7	6076	0.024
08:00-08:30	7	6076	0.019	7	6076	0.012	7	6076	0.031
08:30-09:00	7	6076	0.033	7	6076	0.016	7	6076	0.049
09:00-09:30	7	6076	0.031	7	6076	0.014	7	6076	0.045
09:30-10:00	7	6076	0.038	7	6076	0.021	7	6076	0.059
10:00-10:30	7	6076	0.031	7	6076	0.007	7	6076	0.038
10:30-11:00	7	6076	0.033	7	6076	0.016	7	6076	0.049
11:00-11:30	7	6076	0.026	7	6076	0.021	7	6076	0.047
11:30-12:00	7	6076	0.021	7	6076	0.021	7	6076	0.042
12:00-12:30	7	6076	0.038	7	6076	0.024	7	6076	0.062
12:30-13:00	7	6076	0.016	7	6076	0.024	7	6076	0.04
13:00-13:30	7	6076	0.024	7	6076	0.012	7	6076	0.036
13:30-14:00	7	6076	0.014	7	6076	0.014	7	6076	0.028
14:00-14:30	7	6076	0.007	7	6076	0.012	7	6076	0.019
14:30-15:00	7	6076	0.009	7	6076	0.009	7	6076	0.018
15:00-15:30	7	6076	0.012	7	6076	0.012	7	6076	0.024
15:30-16:00	7	6076	0.007	7	6076	0.009	7	6076	0.016
16:00-16:30	7	6076	0.014	7	6076	0.007	7	6076	0.021
16:30-17:00	7	6076	0.002	7	6076	0.009	7	6076	0.011
17:00-17:30	7	6076	0.005	7	6076	0.002	7	6076	0.007
17:30-18:00	7	6076	0.002	7	6076	0.002	7	6076	0.004
18:00-18:30	7	6076	0	7	6076	0	7	6076	0
18:30-19:00	7	6076	0.002	7	6076	0.002	7	6076	0.004
19:00-19:30	3	7442	0	3	7442	0.013	3	7442	0.013
19:30-20:00	3	7442	0.004	3	7442	0.013	3	7442	0.017
20:00-20:30	2	5475	0	2	5475	0.018	2	5475	0.018
20:30-21:00	2	5475	0	2	5475	0.018	2	5475	0.018
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			0.428			0.345			0.773

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: CYCLISTS

Time Range	ARRIVALS					DEPARTURES			TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	
00:00-00:30										
00:30-01:00										
01:00-01:30										
01:30-02:00										
02:00-02:30										
02:30-03:00										
03:00-03:30										
03:30-04:00										
04:00-04:30										
04:30-05:00										
05:00-05:30		1	2950	0	1	2950	0	1	2950	0
05:30-06:00		1	2950	0	1	2950	0	1	2950	0
06:00-06:30		2	7163	0	2	7163	0	2	7163	0
06:30-07:00		2	7163	0.007	2	7163	0	2	7163	0.007
07:00-07:30		7	6076	0.002	7	6076	0.005	7	6076	0.007
07:30-08:00		7	6076	0	7	6076	0	7	6076	0
08:00-08:30		7	6076	0.007	7	6076	0	7	6076	0.007
08:30-09:00		7	6076	0.002	7	6076	0	7	6076	0.002
09:00-09:30		7	6076	0.002	7	6076	0	7	6076	0.002
09:30-10:00		7	6076	0	7	6076	0	7	6076	0
10:00-10:30		7	6076	0	7	6076	0	7	6076	0
10:30-11:00		7	6076	0	7	6076	0.002	7	6076	0.002
11:00-11:30		7	6076	0.002	7	6076	0	7	6076	0.002
11:30-12:00		7	6076	0	7	6076	0	7	6076	0
12:00-12:30		7	6076	0	7	6076	0	7	6076	0
12:30-13:00		7	6076	0	7	6076	0	7	6076	0
13:00-13:30		7	6076	0.007	7	6076	0.002	7	6076	0.009
13:30-14:00		7	6076	0.002	7	6076	0	7	6076	0.002
14:00-14:30		7	6076	0	7	6076	0.007	7	6076	0.007
14:30-15:00		7	6076	0	7	6076	0.002	7	6076	0.002
15:00-15:30		7	6076	0	7	6076	0	7	6076	0
15:30-16:00		7	6076	0	7	6076	0	7	6076	0
16:00-16:30		7	6076	0.002	7	6076	0	7	6076	0.002
16:30-17:00		7	6076	0	7	6076	0.007	7	6076	0.007
17:00-17:30		7	6076	0.012	7	6076	0.007	7	6076	0.019
17:30-18:00		7	6076	0.002	7	6076	0.002	7	6076	0.004
18:00-18:30		7	6076	0	7	6076	0.005	7	6076	0.005
18:30-19:00		7	6076	0	7	6076	0.005	7	6076	0.005
19:00-19:30		3	7442	0	3	7442	0	3	7442	0
19:30-20:00		3	7442	0	3	7442	0	3	7442	0
20:00-20:30		2	5475	0	2	5475	0	2	5475	0
20:30-21:00		2	5475	0	2	5475	0	2	5475	0
21:00-21:30		1	8000	0	1	8000	0	1	8000	0
21:30-22:00		1	8000	0	1	8000	0	1	8000	0
22:00-22:30										
22:30-23:00										
23:00-23:30										
23:30-24:00										
Daily Trip Rates:			0.047			0.044				0.091

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: VEHICLE OCCUPANTS

Time Range	ARRIVALS					DEPARTU RES		TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0.136	1	2950	0	1	2950	0.136
06:00-06:30	2	7163	0.035	2	7163	0	2	7163	0.035
06:30-07:00	2	7163	0.161	2	7163	0.049	2	7163	0.21
07:00-07:30	7	6076	0.089	7	6076	0.014	7	6076	0.103
07:30-08:00	7	6076	0.129	7	6076	0.024	7	6076	0.153
08:00-08:30	7	6076	0.426	7	6076	0.028	7	6076	0.454
08:30-09:00	7	6076	0.202	7	6076	0.045	7	6076	0.247
09:00-09:30	7	6076	0.089	7	6076	0.033	7	6076	0.122
09:30-10:00	7	6076	0.176	7	6076	0.075	7	6076	0.251
10:00-10:30	7	6076	0.146	7	6076	0.061	7	6076	0.207
10:30-11:00	7	6076	0.143	7	6076	0.066	7	6076	0.209
11:00-11:30	7	6076	0.068	7	6076	0.071	7	6076	0.139
11:30-12:00	7	6076	0.059	7	6076	0.056	7	6076	0.115
12:00-12:30	7	6076	0.101	7	6076	0.115	7	6076	0.216
12:30-13:00	7	6076	0.096	7	6076	0.15	7	6076	0.246
13:00-13:30	7	6076	0.082	7	6076	0.15	7	6076	0.232
13:30-14:00	7	6076	0.073	7	6076	0.103	7	6076	0.176
14:00-14:30	7	6076	0.052	7	6076	0.054	7	6076	0.106
14:30-15:00	7	6076	0.073	7	6076	0.059	7	6076	0.132
15:00-15:30	7	6076	0.059	7	6076	0.106	7	6076	0.165
15:30-16:00	7	6076	0.021	7	6076	0.073	7	6076	0.094
16:00-16:30	7	6076	0.04	7	6076	0.122	7	6076	0.162
16:30-17:00	7	6076	0.031	7	6076	0.148	7	6076	0.179
17:00-17:30	7	6076	0.049	7	6076	0.075	7	6076	0.124
17:30-18:00	7	6076	0.096	7	6076	0.397	7	6076	0.493
18:00-18:30	7	6076	0.066	7	6076	0.181	7	6076	0.247
18:30-19:00	7	6076	0.047	7	6076	0.063	7	6076	0.11
19:00-19:30	3	7442	0.045	3	7442	0.036	3	7442	0.081
19:30-20:00	3	7442	0.022	3	7442	0.076	3	7442	0.098
20:00-20:30	2	5475	0.018	2	5475	0.219	2	5475	0.237
20:30-21:00	2	5475	0.018	2	5475	0.055	2	5475	0.073
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			2.848			2.704			5.552

TRIP RATE for Land Use 02 -
Calculation Factor: 100 sqm
Count Type: PEDESTRIANS

Time Range	ARRIVALS				DEPARTURES				TOTALS
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0.068	1	2950	0	1	2950	0.068
06:00-06:30	2	7163	0	2	7163	0	2	7163	0
06:30-07:00	2	7163	0.014	2	7163	0	2	7163	0.014
07:00-07:30	7	6076	0.014	7	6076	0.007	7	6076	0.021
07:30-08:00	7	6076	0.005	7	6076	0	7	6076	0.005
08:00-08:30	7	6076	0.002	7	6076	0.002	7	6076	0.004
08:30-09:00	7	6076	0.009	7	6076	0.005	7	6076	0.014
09:00-09:30	7	6076	0.005	7	6076	0.002	7	6076	0.007
09:30-10:00	7	6076	0.009	7	6076	0.005	7	6076	0.014
10:00-10:30	7	6076	0.002	7	6076	0.002	7	6076	0.004
10:30-11:00	7	6076	0.012	7	6076	0.014	7	6076	0.026
11:00-11:30	7	6076	0.005	7	6076	0.005	7	6076	0.01
11:30-12:00	7	6076	0.007	7	6076	0.007	7	6076	0.014
12:00-12:30	7	6076	0.009	7	6076	0.009	7	6076	0.018
12:30-13:00	7	6076	0.002	7	6076	0.002	7	6076	0.004
13:00-13:30	7	6076	0.009	7	6076	0.009	7	6076	0.018
13:30-14:00	7	6076	0.016	7	6076	0.019	7	6076	0.035
14:00-14:30	7	6076	0.009	7	6076	0.009	7	6076	0.018
14:30-15:00	7	6076	0.007	7	6076	0.009	7	6076	0.016
15:00-15:30	7	6076	0.009	7	6076	0.007	7	6076	0.016
15:30-16:00	7	6076	0.009	7	6076	0.009	7	6076	0.018
16:00-16:30	7	6076	0.002	7	6076	0.005	7	6076	0.007
16:30-17:00	7	6076	0.024	7	6076	0.028	7	6076	0.052
17:00-17:30	7	6076	0.021	7	6076	0.012	7	6076	0.033
17:30-18:00	7	6076	0.019	7	6076	0.007	7	6076	0.026
18:00-18:30	7	6076	0.014	7	6076	0.014	7	6076	0.028
18:30-19:00	7	6076	0.007	7	6076	0	7	6076	0.007
19:00-19:30	3	7442	0	3	7442	0	3	7442	0
19:30-20:00	3	7442	0	3	7442	0	3	7442	0
20:00-20:30	2	5475	0	2	5475	0	2	5475	0
20:30-21:00	2	5475	0	2	5475	0	2	5475	0
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			0.309			0.188			0.497

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: BUS/TRAM

Time Range	ARRIVALS					DEPARTU		TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0	2	7163	0
06:30-07:00	2	7163	0	2	7163	0	2	7163	0
07:00-07:30	7	6076	0.005	7	6076	0.002	7	6076	0.007
07:30-08:00	7	6076	0.012	7	6076	0.005	7	6076	0.017
08:00-08:30	7	6076	0.012	7	6076	0	7	6076	0.012
08:30-09:00	7	6076	0.031	7	6076	0	7	6076	0.031
09:00-09:30	7	6076	0.009	7	6076	0.002	7	6076	0.011
09:30-10:00	7	6076	0.005	7	6076	0	7	6076	0.005
10:00-10:30	7	6076	0.016	7	6076	0.009	7	6076	0.025
10:30-11:00	7	6076	0.016	7	6076	0.009	7	6076	0.025
11:00-11:30	7	6076	0.005	7	6076	0.005	7	6076	0.01
11:30-12:00	7	6076	0.009	7	6076	0.009	7	6076	0.018
12:00-12:30	7	6076	0.009	7	6076	0.012	7	6076	0.021
12:30-13:00	7	6076	0.019	7	6076	0.019	7	6076	0.038
13:00-13:30	7	6076	0.005	7	6076	0.002	7	6076	0.007
13:30-14:00	7	6076	0.014	7	6076	0.014	7	6076	0.028
14:00-14:30	7	6076	0.007	7	6076	0.019	7	6076	0.026
14:30-15:00	7	6076	0.007	7	6076	0.005	7	6076	0.012
15:00-15:30	7	6076	0.007	7	6076	0.007	7	6076	0.014
15:30-16:00	7	6076	0	7	6076	0.007	7	6076	0.007
16:00-16:30	7	6076	0.005	7	6076	0	7	6076	0.005
16:30-17:00	7	6076	0.012	7	6076	0.026	7	6076	0.038
17:00-17:30	7	6076	0.005	7	6076	0.009	7	6076	0.014
17:30-18:00	7	6076	0.028	7	6076	0.005	7	6076	0.033
18:00-18:30	7	6076	0.002	7	6076	0.014	7	6076	0.016
18:30-19:00	7	6076	0.012	7	6076	0.014	7	6076	0.026
19:00-19:30	3	7442	0	3	7442	0	3	7442	0
19:30-20:00	3	7442	0	3	7442	0.004	3	7442	0.004
20:00-20:30	2	5475	0.009	2	5475	0.201	2	5475	0.21
20:30-21:00	2	5475	0.009	2	5475	0.027	2	5475	0.036
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0.013	1	8000	0	1	8000	0.013
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			0.283			0.426			0.709

TRIP RATE for Land Use 02 -
Calculation Factor: 100 sqm
Count Type: TOTAL RAIL

Time Range	ARRIVALS					DEPARTURES			TOTALS
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0	2	7163	0
06:30-07:00	2	7163	0	2	7163	0	2	7163	0
07:00-07:30	7	6076	0.002	7	6076	0	7	6076	0.002
07:30-08:00	7	6076	0	7	6076	0	7	6076	0
08:00-08:30	7	6076	0	7	6076	0	7	6076	0
08:30-09:00	7	6076	0.002	7	6076	0	7	6076	0.002
09:00-09:30	7	6076	0	7	6076	0	7	6076	0
09:30-10:00	7	6076	0	7	6076	0	7	6076	0
10:00-10:30	7	6076	0	7	6076	0	7	6076	0
10:30-11:00	7	6076	0	7	6076	0	7	6076	0
11:00-11:30	7	6076	0	7	6076	0	7	6076	0
11:30-12:00	7	6076	0	7	6076	0	7	6076	0
12:00-12:30	7	6076	0	7	6076	0	7	6076	0
12:30-13:00	7	6076	0	7	6076	0	7	6076	0
13:00-13:30	7	6076	0	7	6076	0	7	6076	0
13:30-14:00	7	6076	0	7	6076	0	7	6076	0
14:00-14:30	7	6076	0	7	6076	0	7	6076	0
14:30-15:00	7	6076	0	7	6076	0	7	6076	0
15:00-15:30	7	6076	0	7	6076	0.002	7	6076	0.002
15:30-16:00	7	6076	0	7	6076	0.007	7	6076	0.007
16:00-16:30	7	6076	0	7	6076	0	7	6076	0
16:30-17:00	7	6076	0	7	6076	0	7	6076	0
17:00-17:30	7	6076	0	7	6076	0.002	7	6076	0.002
17:30-18:00	7	6076	0	7	6076	0	7	6076	0
18:00-18:30	7	6076	0.002	7	6076	0	7	6076	0.002
18:30-19:00	7	6076	0	7	6076	0	7	6076	0
19:00-19:30	3	7442	0	3	7442	0	3	7442	0
19:30-20:00	3	7442	0	3	7442	0	3	7442	0
20:00-20:30	2	5475	0	2	5475	0	2	5475	0
20:30-21:00	2	5475	0	2	5475	0	2	5475	0
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			0.006			0.011			0.017

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: COACH PASSENGERS

Time Range	ARRIVALS					DEPARTURES			TOTALS
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0	2	7163	0
06:30-07:00	2	7163	0	2	7163	0	2	7163	0
07:00-07:30	7	6076	0	7	6076	0	7	6076	0
07:30-08:00	7	6076	0	7	6076	0	7	6076	0
08:00-08:30	7	6076	0	7	6076	0	7	6076	0
08:30-09:00	7	6076	0	7	6076	0	7	6076	0
09:00-09:30	7	6076	0	7	6076	0	7	6076	0
09:30-10:00	7	6076	0.061	7	6076	0	7	6076	0.061
10:00-10:30	7	6076	0	7	6076	0	7	6076	0
10:30-11:00	7	6076	0.066	7	6076	0.061	7	6076	0.127
11:00-11:30	7	6076	0.052	7	6076	0.002	7	6076	0.054
11:30-12:00	7	6076	0.066	7	6076	0	7	6076	0.066
12:00-12:30	7	6076	0	7	6076	0.066	7	6076	0.066
12:30-13:00	7	6076	0.078	7	6076	0	7	6076	0.078
13:00-13:30	7	6076	0	7	6076	0.052	7	6076	0.052
13:30-14:00	7	6076	0.054	7	6076	0	7	6076	0.054
14:00-14:30	7	6076	0	7	6076	0.141	7	6076	0.141
14:30-15:00	7	6076	0	7	6076	0	7	6076	0
15:00-15:30	7	6076	0.075	7	6076	0.054	7	6076	0.129
15:30-16:00	7	6076	0.08	7	6076	0	7	6076	0.08
16:00-16:30	7	6076	0	7	6076	0	7	6076	0
16:30-17:00	7	6076	0	7	6076	0.075	7	6076	0.075
17:00-17:30	7	6076	0.132	7	6076	0.08	7	6076	0.212
17:30-18:00	7	6076	0	7	6076	0	7	6076	0
18:00-18:30	7	6076	0	7	6076	0.061	7	6076	0.061
18:30-19:00	7	6076	0.056	7	6076	0	7	6076	0.056
19:00-19:30	3	7442	0.094	3	7442	0.134	3	7442	0.228
19:30-20:00	3	7442	0	3	7442	0	3	7442	0
20:00-20:30	2	5475	0	2	5475	0.228	2	5475	0.228
20:30-21:00	2	5475	0.009	2	5475	0.192	2	5475	0.201
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			0.823			1.146			1.969

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: PUBLIC TRANSPORT

Time Range	ARRIVALS					DEPARTURES			TOTALS
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0	2	7163	0
06:30-07:00	2	7163	0	2	7163	0	2	7163	0
07:00-07:30	7	6076	0.007	7	6076	0.002	7	6076	0.009
07:30-08:00	7	6076	0.012	7	6076	0.005	7	6076	0.017
08:00-08:30	7	6076	0.012	7	6076	0	7	6076	0.012
08:30-09:00	7	6076	0.033	7	6076	0	7	6076	0.033
09:00-09:30	7	6076	0.009	7	6076	0.002	7	6076	0.011
09:30-10:00	7	6076	0.066	7	6076	0	7	6076	0.066
10:00-10:30	7	6076	0.016	7	6076	0.009	7	6076	0.025
10:30-11:00	7	6076	0.082	7	6076	0.071	7	6076	0.153
11:00-11:30	7	6076	0.056	7	6076	0.007	7	6076	0.063
11:30-12:00	7	6076	0.075	7	6076	0.009	7	6076	0.084
12:00-12:30	7	6076	0.009	7	6076	0.078	7	6076	0.087
12:30-13:00	7	6076	0.096	7	6076	0.019	7	6076	0.115
13:00-13:30	7	6076	0.005	7	6076	0.054	7	6076	0.059
13:30-14:00	7	6076	0.068	7	6076	0.014	7	6076	0.082
14:00-14:30	7	6076	0.007	7	6076	0.16	7	6076	0.167
14:30-15:00	7	6076	0.007	7	6076	0.005	7	6076	0.012
15:00-15:30	7	6076	0.082	7	6076	0.063	7	6076	0.145
15:30-16:00	7	6076	0.08	7	6076	0.014	7	6076	0.094
16:00-16:30	7	6076	0.005	7	6076	0	7	6076	0.005
16:30-17:00	7	6076	0.012	7	6076	0.101	7	6076	0.113
17:00-17:30	7	6076	0.136	7	6076	0.092	7	6076	0.228
17:30-18:00	7	6076	0.028	7	6076	0.005	7	6076	0.033
18:00-18:30	7	6076	0.005	7	6076	0.075	7	6076	0.08
18:30-19:00	7	6076	0.068	7	6076	0.014	7	6076	0.082
19:00-19:30	3	7442	0.094	3	7442	0.134	3	7442	0.228
19:30-20:00	3	7442	0	3	7442	0.004	3	7442	0.004
20:00-20:30	2	5475	0.009	2	5475	0.429	2	5475	0.438
20:30-21:00	2	5475	0.018	2	5475	0.219	2	5475	0.237
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0.013	1	8000	0	1	8000	0.013
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			1.11			1.585			2.695

TRIP RATE for Land Use 02 -
Calculation Factor: 100 sqm
Count Type: TOTAL PEOPLE

Time Range	ARRIVALS		DEPARTU RES		TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30						
00:30-01:00						
01:00-01:30						
01:30-02:00						
02:00-02:30						
02:30-03:00						
03:00-03:30						
03:30-04:00						
04:00-04:30						
04:30-05:00						
05:00-05:30	1	2950	0	1	2950	0
05:30-06:00	1	2950	0.203	1	2950	0.203
06:00-06:30	2	7163	0.035	2	7163	0.035
06:30-07:00	2	7163	0.182	2	7163	0.049
07:00-07:30	7	6076	0.113	7	6076	0.028
07:30-08:00	7	6076	0.146	7	6076	0.028
08:00-08:30	7	6076	0.447	7	6076	0.031
08:30-09:00	7	6076	0.247	7	6076	0.049
09:00-09:30	7	6076	0.106	7	6076	0.038
09:30-10:00	7	6076	0.252	7	6076	0.08
10:00-10:30	7	6076	0.165	7	6076	0.073
10:30-11:00	7	6076	0.237	7	6076	0.153
11:00-11:30	7	6076	0.132	7	6076	0.082
11:30-12:00	7	6076	0.141	7	6076	0.073
12:00-12:30	7	6076	0.12	7	6076	0.202
12:30-13:00	7	6076	0.195	7	6076	0.172
13:00-13:30	7	6076	0.103	7	6076	0.216
13:30-14:00	7	6076	0.16	7	6076	0.136
14:00-14:30	7	6076	0.068	7	6076	0.23
14:30-15:00	7	6076	0.087	7	6076	0.075
15:00-15:30	7	6076	0.15	7	6076	0.176
15:30-16:00	7	6076	0.111	7	6076	0.096
16:00-16:30	7	6076	0.049	7	6076	0.127
16:30-17:00	7	6076	0.066	7	6076	0.284
17:00-17:30	7	6076	0.219	7	6076	0.186
17:30-18:00	7	6076	0.146	7	6076	0.411
18:00-18:30	7	6076	0.085	7	6076	0.275
18:30-19:00	7	6076	0.122	7	6076	0.082
19:00-19:30	3	7442	0.139	3	7442	0.17
19:30-20:00	3	7442	0.022	3	7442	0.081
20:00-20:30	2	5475	0.027	2	5475	0.648
20:30-21:00	2	5475	0.037	2	5475	0.274
21:00-21:30	1	8000	0	1	8000	0
21:30-22:00	1	8000	0.013	1	8000	0
22:00-22:30						
22:30-23:00						
23:00-23:30						
23:30-24:00						
Daily Trip Rates:			4.325			4.525
						8.85

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: CARS

Time Range	ARRIVALS			DEPARTU RES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30									
00:30-01:00									
01:00-01:30									
01:30-02:00									
02:00-02:30									
02:30-03:00									
03:00-03:30									
03:30-04:00									
04:00-04:30									
04:30-05:00									
05:00-05:30	1	2950	0	1	2950	0	1	2950	0
05:30-06:00	1	2950	0.102	1	2950	0	1	2950	0.102
06:00-06:30	2	7163	0.021	2	7163	0	2	7163	0.021
06:30-07:00	2	7163	0.105	2	7163	0.042	2	7163	0.147
07:00-07:30	7	6076	0.059	7	6076	0.009	7	6076	0.068
07:30-08:00	7	6076	0.101	7	6076	0.009	7	6076	0.11
08:00-08:30	7	6076	0.348	7	6076	0.012	7	6076	0.36
08:30-09:00	7	6076	0.136	7	6076	0.019	7	6076	0.155
09:00-09:30	7	6076	0.042	7	6076	0.012	7	6076	0.054
09:30-10:00	7	6076	0.063	7	6076	0.028	7	6076	0.091
10:00-10:30	7	6076	0.054	7	6076	0.035	7	6076	0.089
10:30-11:00	7	6076	0.054	7	6076	0.033	7	6076	0.087
11:00-11:30	7	6076	0.016	7	6076	0.033	7	6076	0.049
11:30-12:00	7	6076	0.014	7	6076	0.019	7	6076	0.033
12:00-12:30	7	6076	0.016	7	6076	0.054	7	6076	0.07
12:30-13:00	7	6076	0.038	7	6076	0.068	7	6076	0.106
13:00-13:30	7	6076	0.04	7	6076	0.071	7	6076	0.111
13:30-14:00	7	6076	0.021	7	6076	0.035	7	6076	0.056
14:00-14:30	7	6076	0.031	7	6076	0.021	7	6076	0.052
14:30-15:00	7	6076	0.026	7	6076	0.024	7	6076	0.05
15:00-15:30	7	6076	0.016	7	6076	0.04	7	6076	0.056
15:30-16:00	7	6076	0.002	7	6076	0.038	7	6076	0.04
16:00-16:30	7	6076	0.007	7	6076	0.059	7	6076	0.066
16:30-17:00	7	6076	0.009	7	6076	0.089	7	6076	0.098
17:00-17:30	7	6076	0.035	7	6076	0.047	7	6076	0.082
17:30-18:00	7	6076	0.071	7	6076	0.334	7	6076	0.405
18:00-18:30	7	6076	0.054	7	6076	0.155	7	6076	0.209
18:30-19:00	7	6076	0.028	7	6076	0.054	7	6076	0.082
19:00-19:30	3	7442	0.036	3	7442	0.022	3	7442	0.058
19:30-20:00	3	7442	0.013	3	7442	0.045	3	7442	0.058
20:00-20:30	2	5475	0.009	2	5475	0.091	2	5475	0.1
20:30-21:00	2	5475	0.018	2	5475	0.018	2	5475	0.036
21:00-21:30	1	8000	0	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0	1	8000	0
22:00-22:30									
22:30-23:00									
23:00-23:30									
23:30-24:00									
Daily Trip Rates:			1.585			1.516			3.101

TRIP RATE for Land Use 02 -
 Calculation Factor: 100 sqm
 Count Type: LGVS

Time Range	ARRIVALS		DEPARTU RES		TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30						
00:30-01:00						
01:00-01:30						
01:30-02:00						
02:00-02:30						
02:30-03:00						
03:00-03:30						
03:30-04:00						
04:00-04:30						
04:30-05:00						
05:00-05:30	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0
06:30-07:00	2	7163	0.007	2	7163	0.007
07:00-07:30	7	6076	0.002	7	6076	0.002
07:30-08:00	7	6076	0.005	7	6076	0.005
08:00-08:30	7	6076	0.007	7	6076	0.005
08:30-09:00	7	6076	0.009	7	6076	0.009
09:00-09:30	7	6076	0.012	7	6076	0.007
09:30-10:00	7	6076	0.016	7	6076	0.009
10:00-10:30	7	6076	0.019	7	6076	0.019
10:30-11:00	7	6076	0.021	7	6076	0.014
11:00-11:30	7	6076	0.009	7	6076	0.014
11:30-12:00	7	6076	0.005	7	6076	0.002
12:00-12:30	7	6076	0.012	7	6076	0.007
12:30-13:00	7	6076	0.016	7	6076	0.012
13:00-13:30	7	6076	0.012	7	6076	0.009
13:30-14:00	7	6076	0.007	7	6076	0.012
14:00-14:30	7	6076	0.009	7	6076	0.012
14:30-15:00	7	6076	0.009	7	6076	0.012
15:00-15:30	7	6076	0.007	7	6076	0.009
15:30-16:00	7	6076	0.007	7	6076	0.005
16:00-16:30	7	6076	0.007	7	6076	0.014
16:30-17:00	7	6076	0.012	7	6076	0.016
17:00-17:30	7	6076	0.007	7	6076	0.014
17:30-18:00	7	6076	0	7	6076	0.007
18:00-18:30	7	6076	0.005	7	6076	0.002
18:30-19:00	7	6076	0.002	7	6076	0.002
19:00-19:30	3	7442	0.004	3	7442	0
19:30-20:00	3	7442	0	3	7442	0
20:00-20:30	2	5475	0.009	2	5475	0.009
20:30-21:00	2	5475	0	2	5475	0.009
21:00-21:30	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0
22:00-22:30						
22:30-23:00						
23:00-23:30						
23:30-24:00						
Daily Trip Rates:			0.237			0.23
						0.467

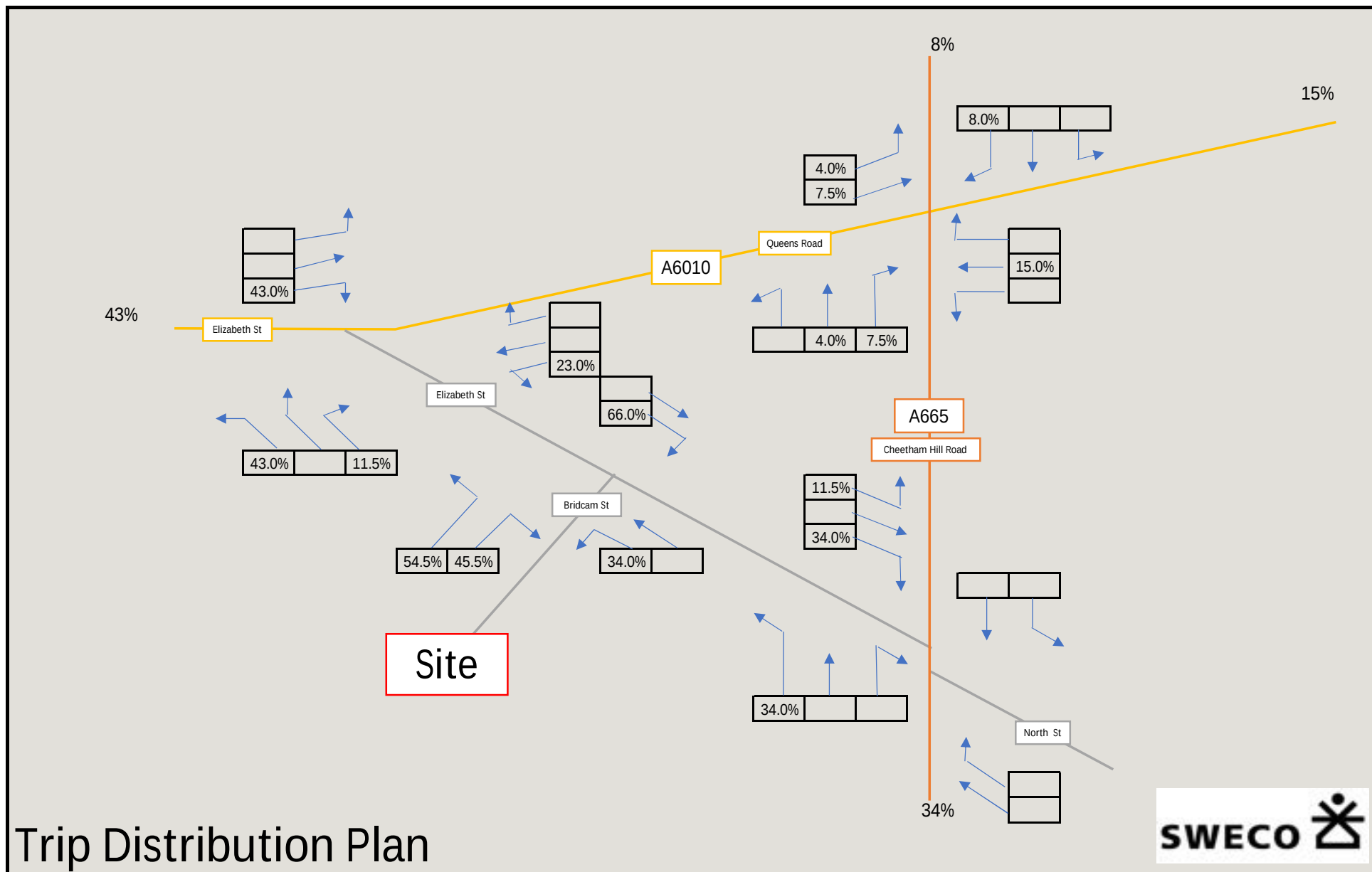
TRIP RATE for Land Use 02 -
Calculation Factor: 100 sqm
Count Type: MOTOR CYCLES

Time Range	ARRIVALS		DEPARTURES		TOTALS	
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00-00:30						
00:30-01:00						
01:00-01:30						
01:30-02:00						
02:00-02:30						
02:30-03:00						
03:00-03:30						
03:30-04:00						
04:00-04:30						
04:30-05:00						
05:00-05:30	1	2950	0	1	2950	0
05:30-06:00	1	2950	0	1	2950	0
06:00-06:30	2	7163	0	2	7163	0
06:30-07:00	2	7163	0	2	7163	0
07:00-07:30	7	6076	0	7	6076	0
07:30-08:00	7	6076	0.005	7	6076	0
08:00-08:30	7	6076	0	7	6076	0
08:30-09:00	7	6076	0.002	7	6076	0
09:00-09:30	7	6076	0	7	6076	0
09:30-10:00	7	6076	0	7	6076	0
10:00-10:30	7	6076	0	7	6076	0
10:30-11:00	7	6076	0	7	6076	0
11:00-11:30	7	6076	0	7	6076	0
11:30-12:00	7	6076	0	7	6076	0
12:00-12:30	7	6076	0	7	6076	0
12:30-13:00	7	6076	0	7	6076	0
13:00-13:30	7	6076	0	7	6076	0
13:30-14:00	7	6076	0	7	6076	0
14:00-14:30	7	6076	0	7	6076	0
14:30-15:00	7	6076	0	7	6076	0
15:00-15:30	7	6076	0	7	6076	0.002
15:30-16:00	7	6076	0	7	6076	0.002
16:00-16:30	7	6076	0	7	6076	0
16:30-17:00	7	6076	0	7	6076	0.002
17:00-17:30	7	6076	0	7	6076	0.002
17:30-18:00	7	6076	0	7	6076	0
18:00-18:30	7	6076	0	7	6076	0
18:30-19:00	7	6076	0	7	6076	0
19:00-19:30	3	7442	0	3	7442	0
19:30-20:00	3	7442	0	3	7442	0.004
20:00-20:30	2	5475	0	2	5475	0
20:30-21:00	2	5475	0	2	5475	0
21:00-21:30	1	8000	0	1	8000	0
21:30-22:00	1	8000	0	1	8000	0
22:00-22:30						
22:30-23:00						
23:00-23:30						
23:30-24:00						
Daily Trip Rates:			0.007			0.012
						0.019

Parameter summary

Trip rate parameter range selected: 690 -
Survey date date range: 01/01/13 -

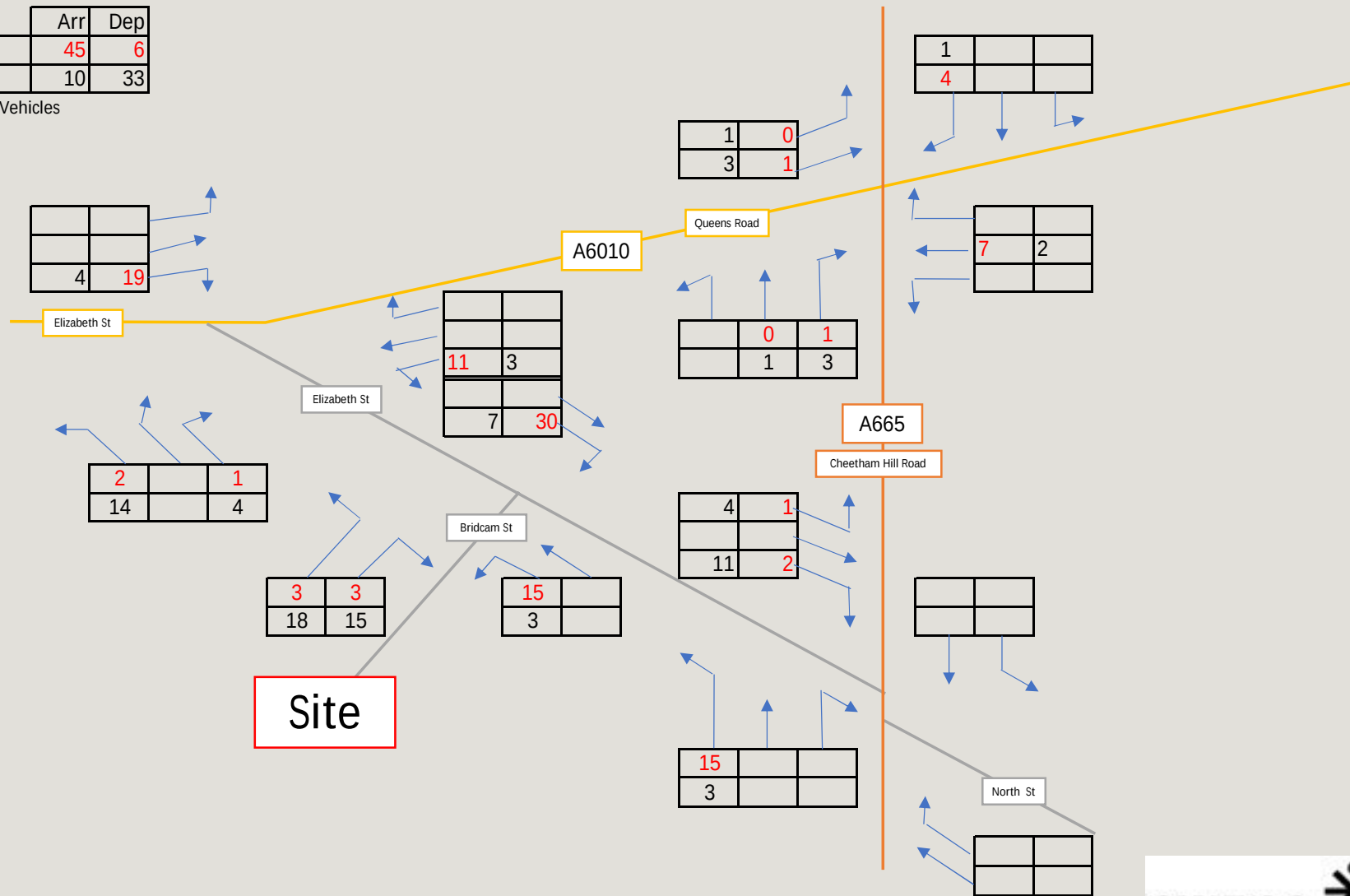
Appendix L – Trip Distribution Plan



Appendix M – Development Traffic Flows (Vehicles)

		Arr	Dep
AM	xx	45	6
PM	xx	10	33

All flows in Vehicles

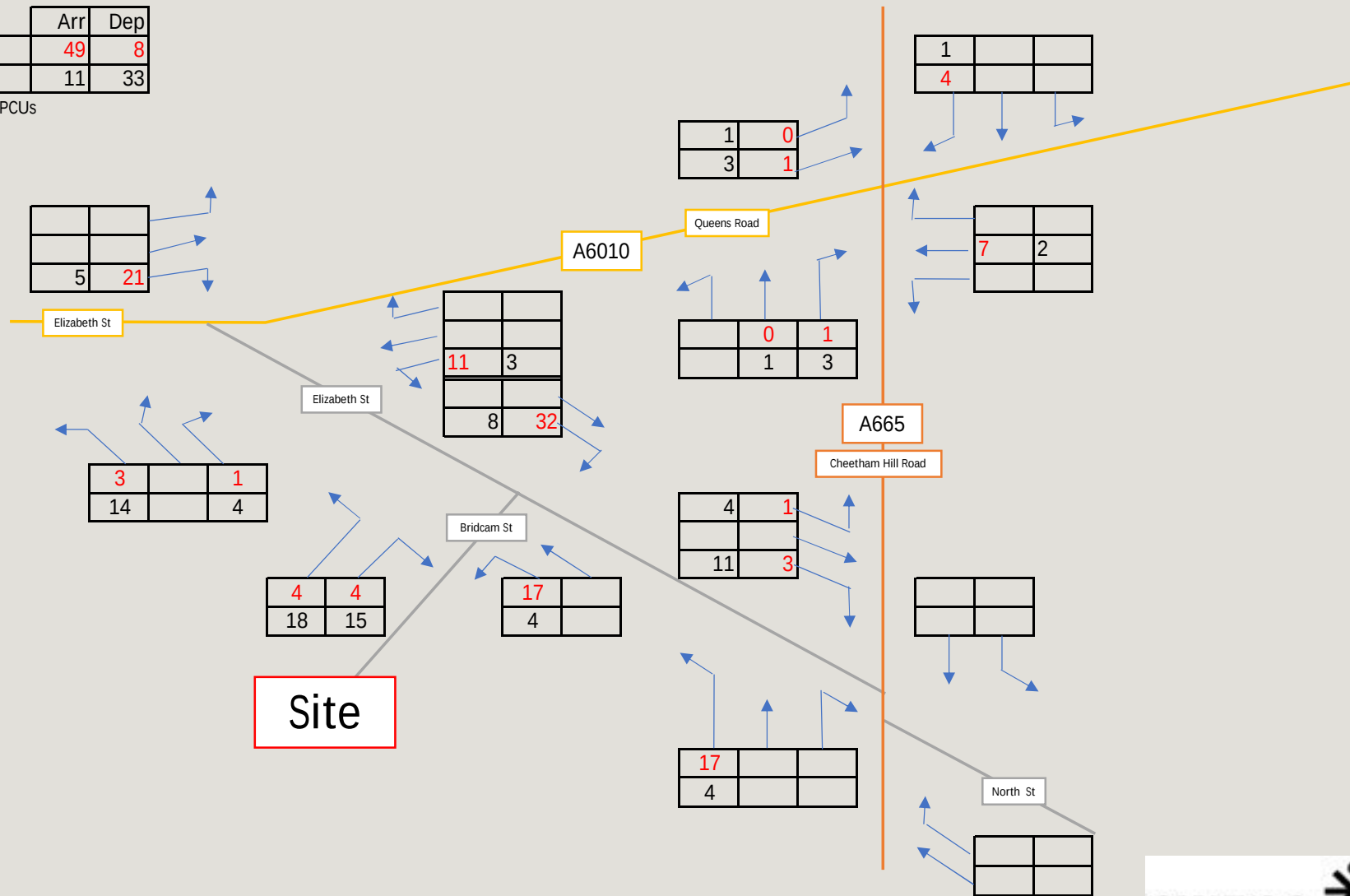


Development Traffic Flows (Vehicles)

Appendix N – Development Traffic Flows (PCUs)

		Arr	Dep
AM	xx	49	8
PM	xx	11	33

All flows in PCUs



Development Traffic Flows (PCUs)

Appendix O – 2021 Background Traffic Flows

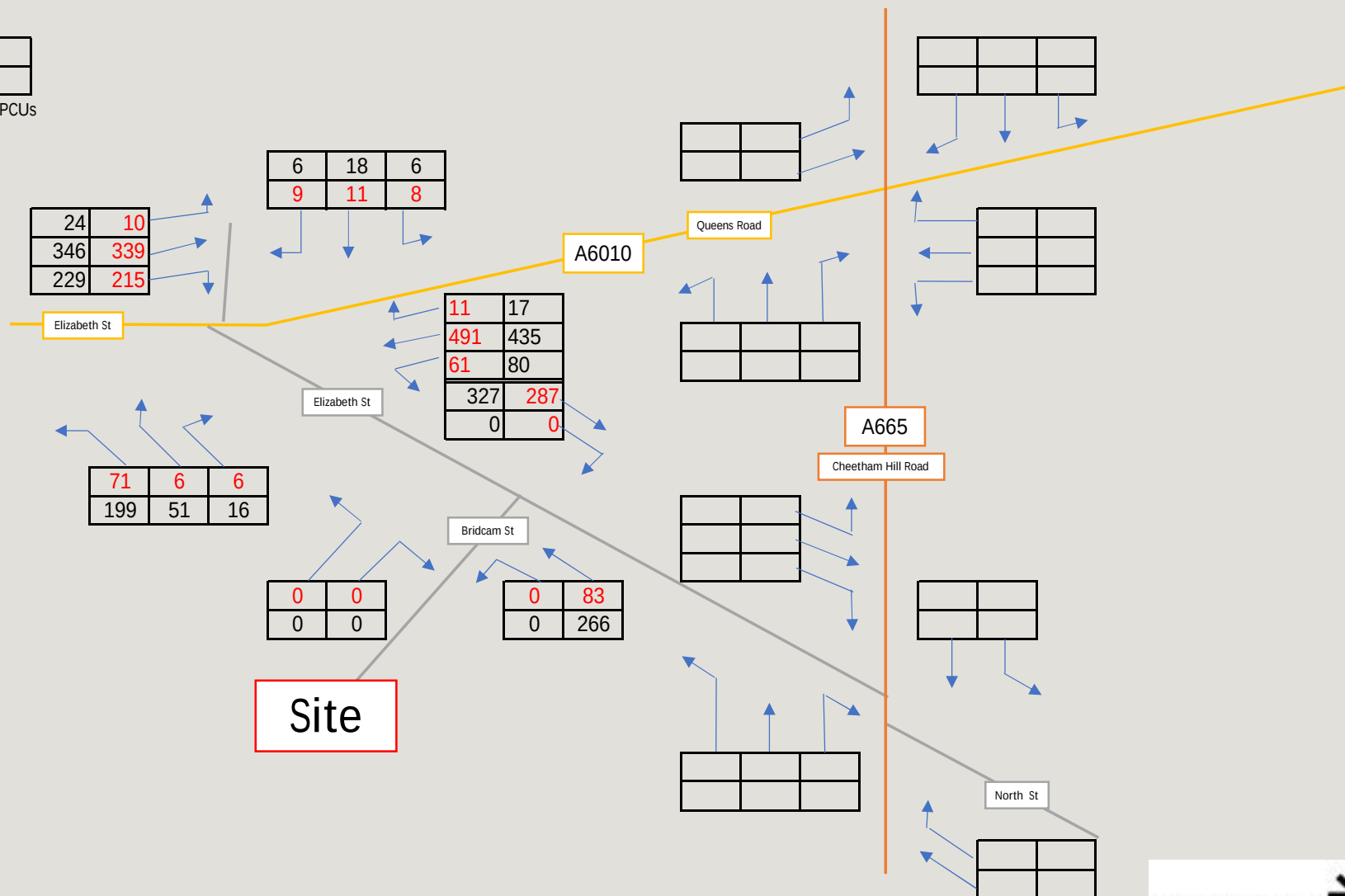
AM

xx

 PM

xx

 All flows in PCUs



2021 Background Flows

Appendix P – 2023 Base Traffic Flows

TEMPRO 2021 to 2023 - AM 1.0292

TEMPRO 2021 to 2023 - PM 1.0286

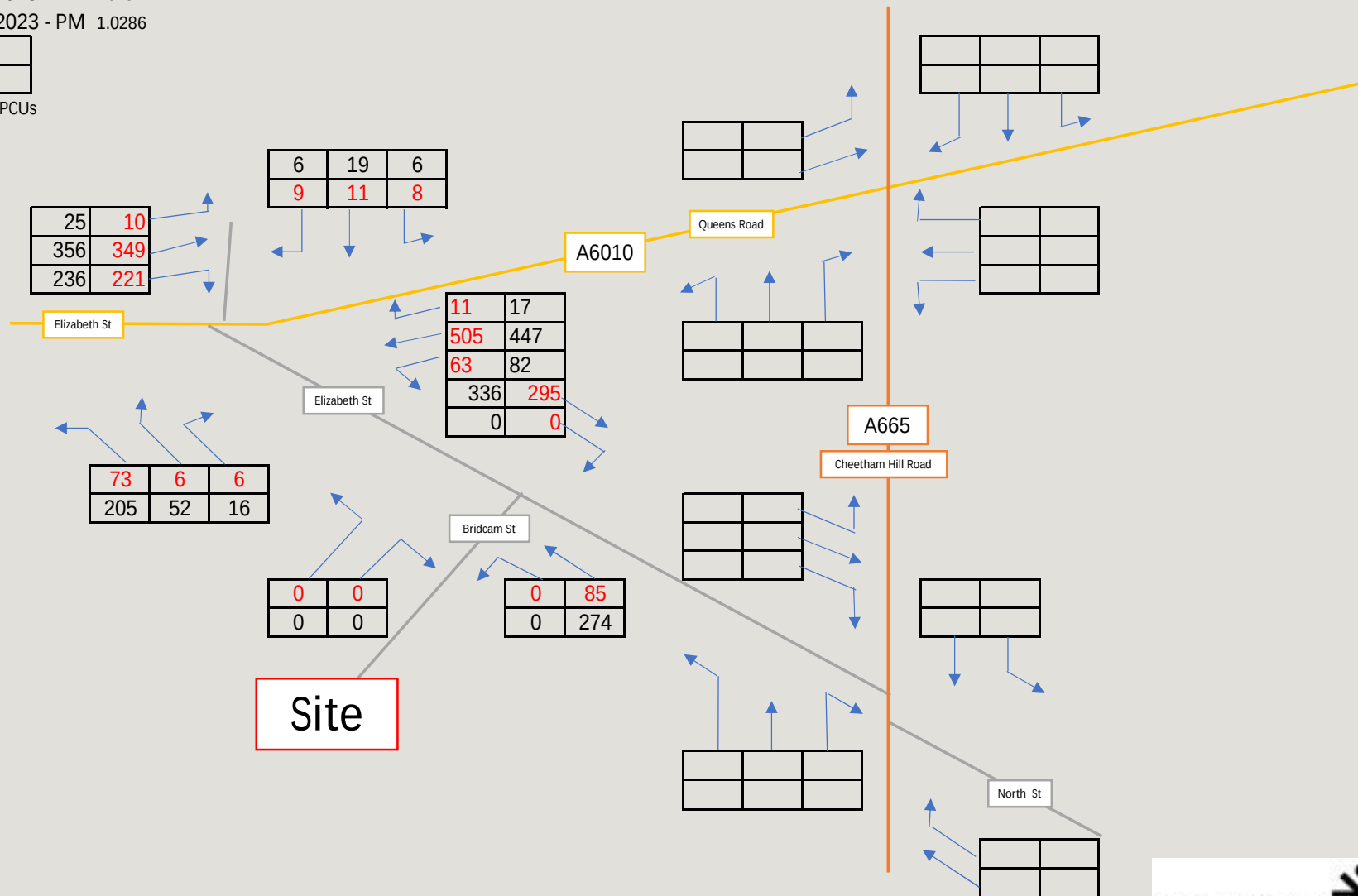
AM

xx

PM

xx

All flows in PCUs



2023 Base Traffic Flows

Appendix Q – 2028 Base Traffic Flows

TEMPRO 2021 to 2028 - AM 1.0943

TEMPRO 2021 to 2028 - PM 1.0919

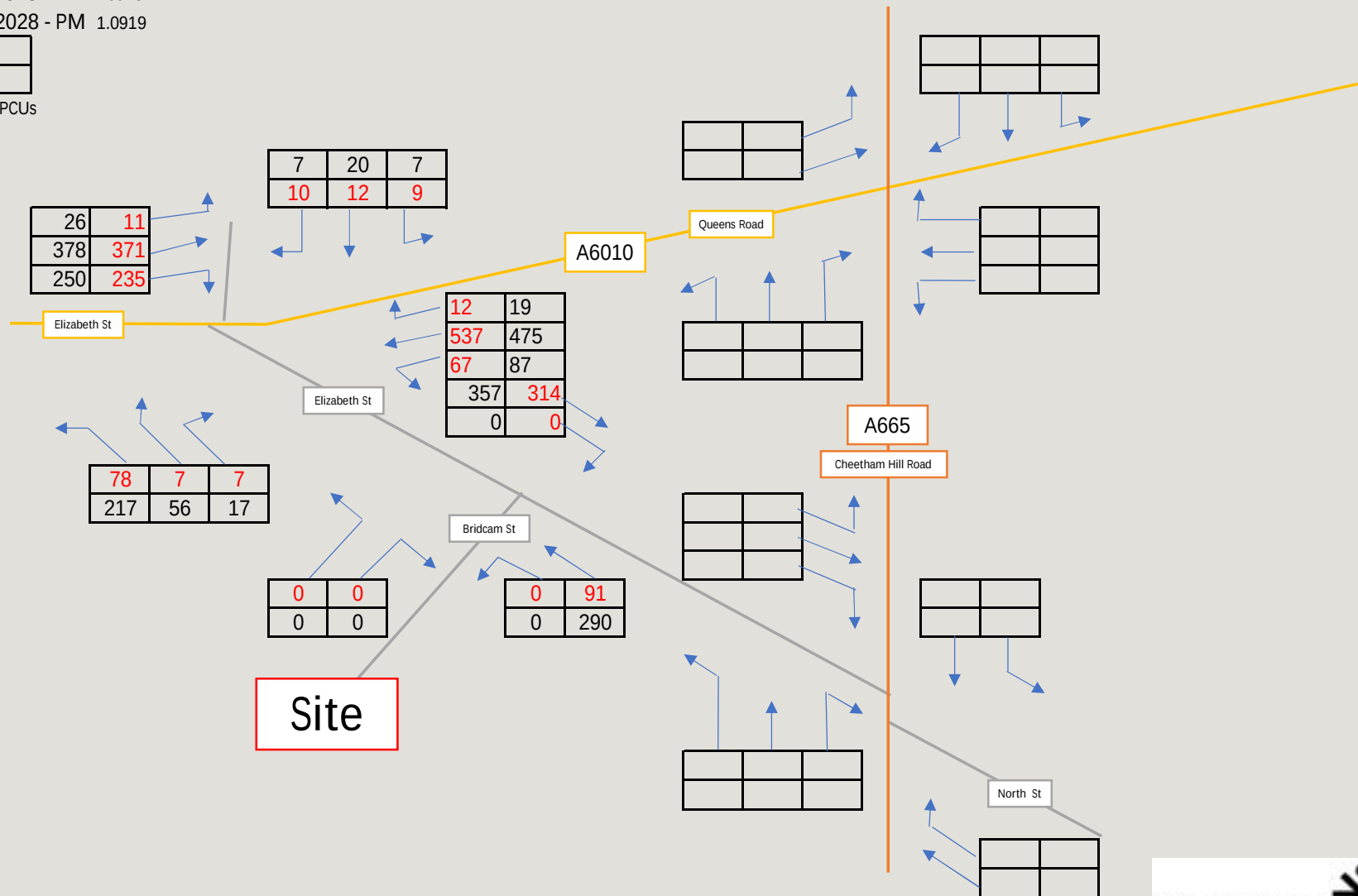
AM

xx

PM

xx

All flows in PCUs



2028 Base Traffic Flows

Appendix R – 2023 Assessment Traffic Flows

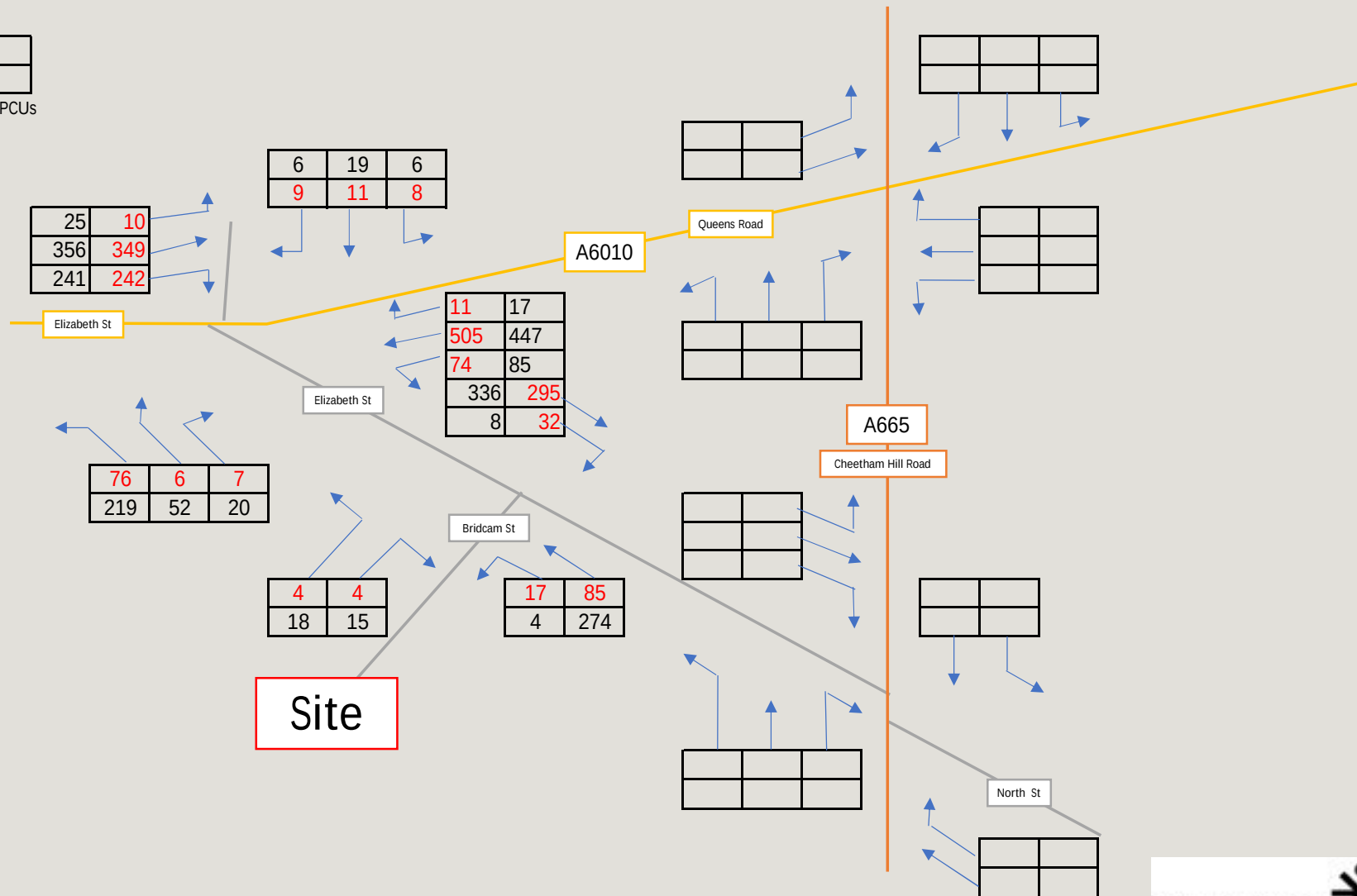
AM

xx

 PM

xx

 All flows in PCUs



2023 Assessment Traffic Flows

Appendix S – 2028 Assessment Traffic Flows

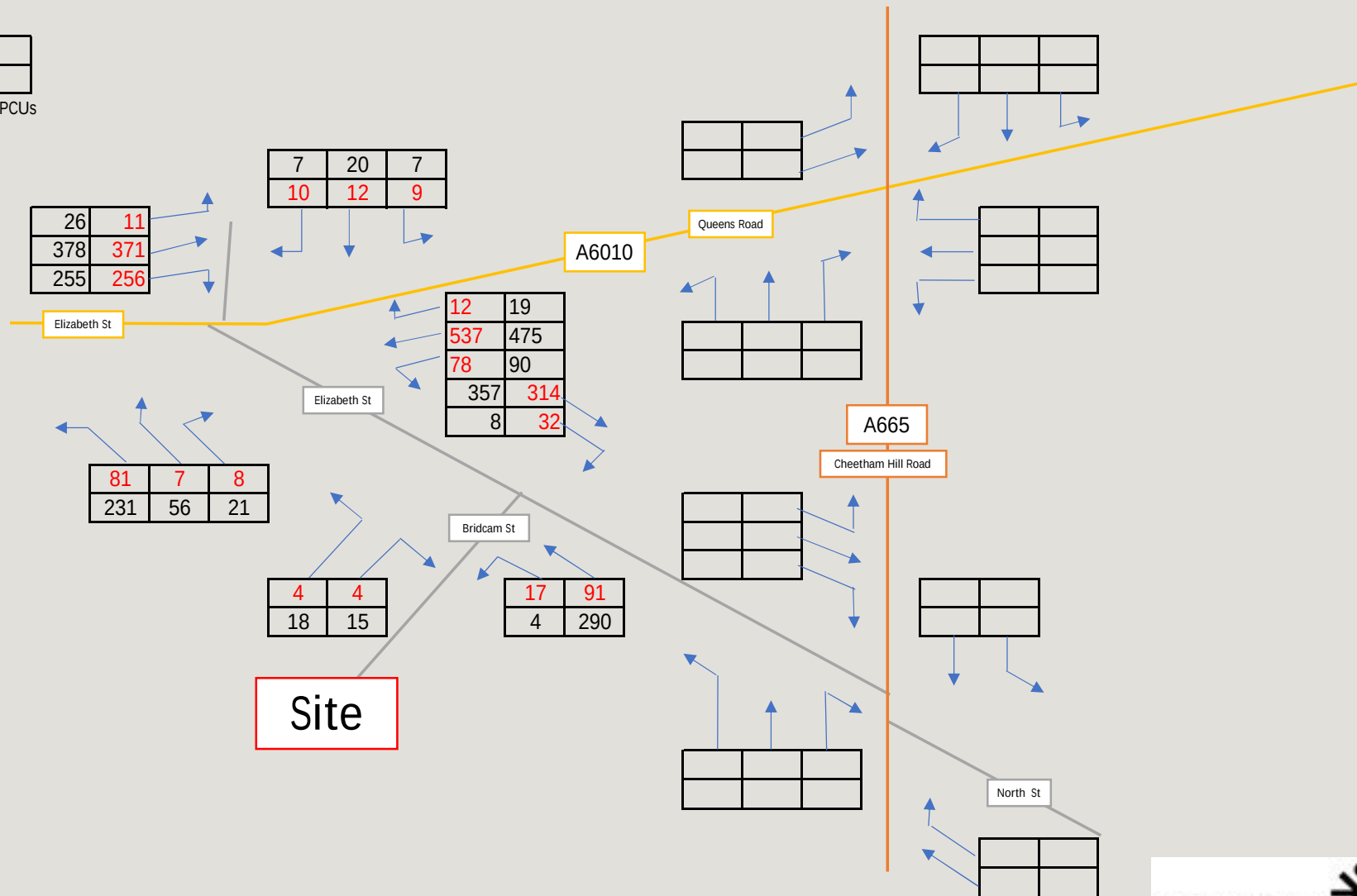
AM

xx

 PM

xx

 All flows in PCUs



2028 Assessment Traffic Flows

Appendix T – Elizabeth St / Queens Rd PICADY Output

Junctions 9	
PICADY 9 - Priority Intersection Module	
Version: 9.0.2.5947 © Copyright TRL Limited, 2017	
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk	
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution	

Filename: Elizabeth Street - Queens Road.j9

Path: \\sweco.se\gb\LDS01\Project\6535\65204495_19-21_Elizabeth_Street\000\04 Deliverables

Management\Analysis\Junction Models

Report generation date: 02/12/2021 14:02:12

-
- »Background, AM
 - »Background, PM
 - »2023 Base, AM
 - »2023 Base, PM
 - »2028 Base, AM
 - »2028 Base, PM
 - »2023 Assessment, AM
 - »2023 Assessment, PM
 - »2028 Assessment, AM
 - »2028 Assessment, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Background								
Stream B-C	0.2	7.21	0.13	A	0.6	10.51	0.38	B
Stream B-AD	0.0	13.47	0.05	B	0.4	17.31	0.26	C
Stream A-BCD	0.0	6.96	0.02	A	0.0	7.32	0.04	A
Stream D-ABC	0.1	10.92	0.08	B	0.1	11.70	0.09	B
Stream C-ABD	1.1	11.89	0.47	B	1.2	11.96	0.49	B
2023 Base								
Stream B-C	0.2	7.31	0.14	A	0.7	10.91	0.40	B
Stream B-AD	0.1	13.89	0.05	B	0.4	18.19	0.27	C
Stream A-BCD	0.0	6.99	0.02	A	0.0	7.37	0.04	A
Stream D-ABC	0.1	11.07	0.08	B	0.1	11.96	0.10	B
Stream C-ABD	1.2	12.20	0.49	B	1.3	12.30	0.51	B
2028 Base								
Stream B-C	0.2	7.58	0.15	A	0.8	11.98	0.44	B
Stream B-AD	0.1	15.14	0.06	C	0.5	20.84	0.31	C
Stream A-BCD	0.0	7.10	0.02	A	0.0	7.51	0.04	A
Stream D-ABC	0.1	11.55	0.10	B	0.1	12.49	0.11	B
Stream C-ABD	1.4	12.99	0.53	B	1.6	13.08	0.55	B
2023 Assessment								
Stream B-C	0.2	7.39	0.14	A	0.8	11.57	0.43	B
Stream B-AD	0.1	14.50	0.05	B	0.4	18.99	0.29	C
Stream A-BCD	0.0	7.00	0.02	A	0.0	7.38	0.04	A
Stream D-ABC	0.1	11.13	0.08	B	0.1	12.02	0.10	B
Stream C-ABD	1.4	13.15	0.54	B	1.4	12.52	0.52	B
2028 Assessment								
Stream B-C	0.2	7.67	0.16	A	0.9	12.82	0.47	B
Stream B-AD	0.1	15.86	0.07	C	0.5	21.96	0.33	C
Stream A-BCD	0.0	7.10	0.02	A	0.0	7.53	0.04	A
Stream D-ABC	0.1	11.62	0.10	B	0.1	12.55	0.11	B
Stream C-ABD	1.8	14.13	0.58	B	1.7	13.34	0.56	B

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

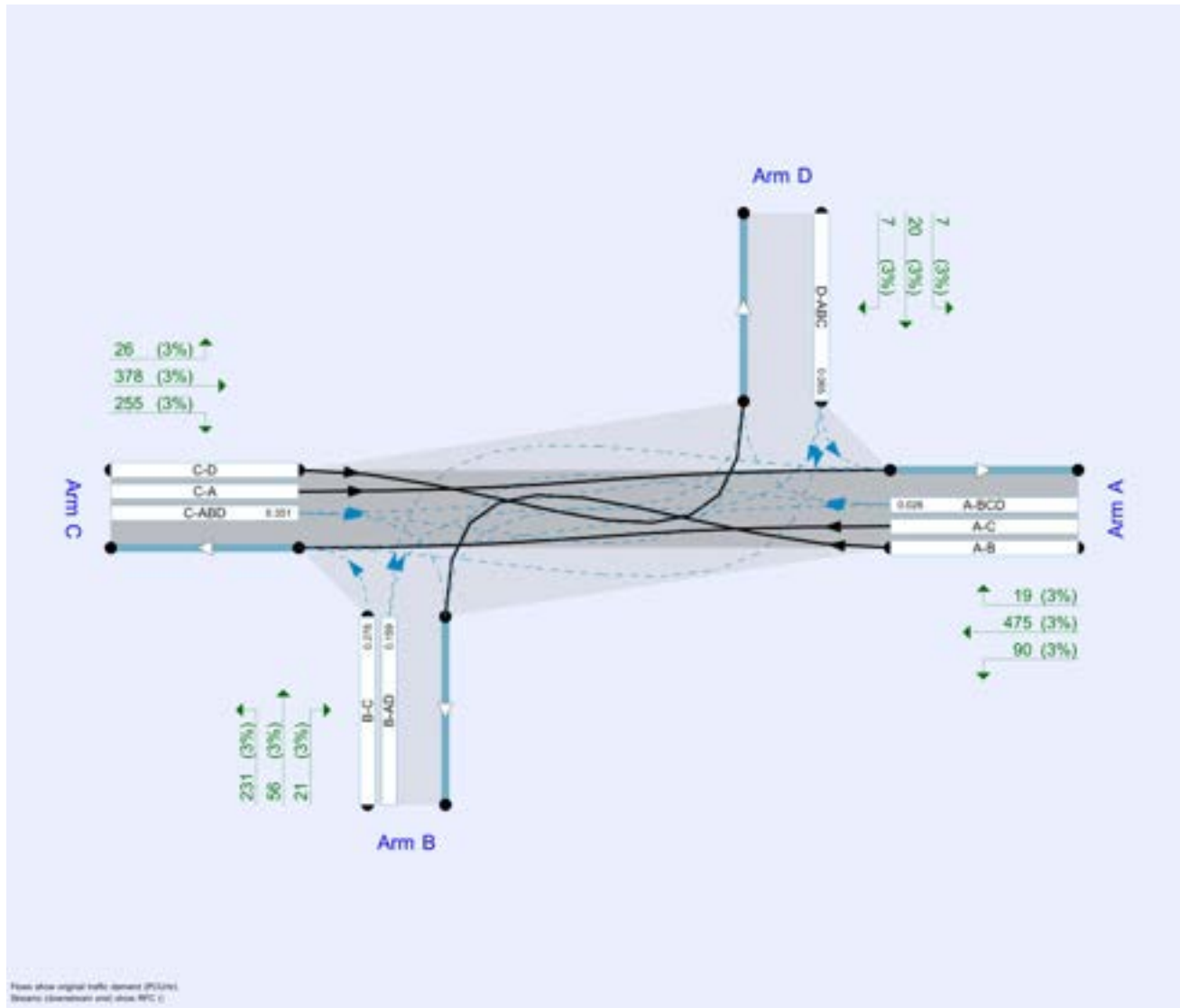
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	02/12/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SWECO\GBDEPS
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Background	AM	ONE HOUR	08:00	09:30	15
D2	Background	PM	ONE HOUR	17:00	18:30	15
D3	2023 Base	AM	ONE HOUR	08:00	09:30	15
D4	2023 Base	PM	ONE HOUR	17:00	18:30	15
D5	2028 Base	AM	ONE HOUR	08:00	09:30	15
D6	2028 Base	PM	ONE HOUR	17:00	18:30	15
D7	2023 Assessment	AM	ONE HOUR	08:00	09:30	15
D8	2023 Assessment	PM	ONE HOUR	17:00	18:30	15
D9	2028 Assessment	AM	ONE HOUR	08:00	09:30	15
D10	2028 Assessment	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Background, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	3.15	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Queens Road (E)		Major
B	Elizabeth Street		Minor
C	Queens Road (W)		Major
D	Larch Gardens		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	7.30		✓	2.50	75.0	✓	3.00
C	7.30		✓	2.50	100.0	✓	2.00

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)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare		9.00	8.20	4.30	3.40	3.20		2.00	90	90
D	One lane	3.00								35	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	638	-	-	-	0.233	0.233	0.233	-	0.233	-	-
1	B-AD	585	0.101	0.254	-	-	-	0.160	0.363	0.160	0.101	0.254
1	B-C	761	0.110	0.278	-	-	-	-	-	-	0.110	0.278
1	C-B	653	0.239	0.239	-	-	-	-	-	-	0.239	0.239
1	D-A	637	-	-	-	0.233	0.092	0.233	-	0.092	-	-
1	D-BC	499	0.136	0.136	0.309	0.217	0.086	0.217	-	0.086	-	-

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	Background	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	563	100.000
B		✓	83	100.000
C		✓	564	100.000
D		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	61	491	11
	B	6	0	71	6
	C	339	215	0	10
	D	8	11	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	7.21	0.2	A
B-AD	0.05	13.47	0.0	B
ABCD	0.02	6.96	0.0	A
A-B				
A-C				
D-ABC	0.08	10.92	0.1	B
C-ABD	0.47	11.89	1.1	B
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53	646	0.083	53	0.1	6.244	A
B-AD	9	383	0.024	9	0.0	9.901	A
ABCD	8	574	0.014	8	0.0	6.551	A
A-B	46			46			
A-C	370			370			
D-ABC	21	423	0.050	21	0.1	9.222	A
C-ABD	169	574	0.294	167	0.4	9.077	A
C-D	7			7			
C-A	248			248			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64	624	0.102	64	0.1	6.620	A
B-AD	11	343	0.031	11	0.0	11.142	B
ABCD	10	562	0.018	10	0.0	6.716	A
A-B	55			55			
A-C	441			441			
D-ABC	25	401	0.063	25	0.1	9.864	A
C-ABD	209	574	0.365	209	0.6	10.135	B
C-D	9			9			
C-A	289			289			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	78	592	0.132	78	0.2	7.210	A
B-AD	13	289	0.046	13	0.0	13.439	B
ABCD	12	545	0.022	12	0.0	6.959	A
A-B	67			67			
A-C	541			541			
D-ABC	31	371	0.083	31	0.1	10.909	B
C-ABD	279	591	0.471	277	1.0	11.774	B
C-D	10			10			
C-A	332			332			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	78	592	0.132	78	0.2	7.213	A
B-AD	13	288	0.046	13	0.0	13.469	B
ABCD	12	545	0.022	12	0.0	6.960	A
A-B	67			67			
A-C	541			541			
D-ABC	31	370	0.083	31	0.1	10.917	B
C-ABD	279	591	0.471	279	1.1	11.894	B
C-D	10			10			
C-A	332			332			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	64	624	0.102	64	0.1	6.627	A
B-AD	11	343	0.031	11	0.0	11.175	B
A-BCD	10	562	0.018	10	0.0	6.718	A
A-B	55			55			
A-C	441			441			
D-ABC	25	401	0.063	25	0.1	9.875	A
C-ABD	209	574	0.365	211	0.7	10.272	B
C-D	9			9			
C-A	289			289			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	53	646	0.083	54	0.1	6.255	A
B-AD	9	382	0.024	9	0.0	9.932	A
A-BCD	8	574	0.014	8	0.0	6.552	A
A-B	46			46			
A-C	370			370			
D-ABC	21	423	0.050	21	0.1	9.237	A
C-ABD	169	574	0.294	170	0.5	9.191	A
C-D	7			7			
C-A	248			248			

Background, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	4.78	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	Background	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	532	100.000
B		✓	266	100.000
C		✓	599	100.000
D		✓	30	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	80	435	17
	B	16	0	199	51
	C	346	229	0	24
	D	6	18	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.38	10.51	0.6	B
B-AD	0.26	17.31	0.4	C
A-BCD	0.04	7.32	0.0	A
A-B				
A-C				
D-ABC	0.09	11.70	0.1	B
C-ABD	0.49	11.96	1.2	B
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	150	639	0.235	149	0.3	7.548	A
B-AD	50	385	0.131	50	0.2	11.028	B
A-BCD	13	561	0.023	13	0.0	6.764	A
A-B	60			60			
A-C	327			327			
D-ABC	23	405	0.056	22	0.1	9.680	A
C-ABD	181	584	0.310	179	0.5	9.117	A
C-D	17			17			
C-A	252			252			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	179	612	0.292	178	0.4	8.541	A
B-AD	60	345	0.175	60	0.2	12.995	B
A-BCD	15	546	0.028	15	0.0	6.987	A
A-B	72			72			
A-C	391			391			
D-ABC	27	382	0.071	27	0.1	10.436	B
C-ABD	226	589	0.383	225	0.7	10.183	B
C-D	20			20			
C-A	293			293			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	219	572	0.383	218	0.6	10.452	B
B-AD	74	289	0.256	73	0.3	17.180	C
A-BCD	19	525	0.036	19	0.0	7.320	A
A-B	88			88			
A-C	479			479			
D-ABC	33	350	0.094	33	0.1	11.690	B
C-ABD	303	614	0.494	301	1.2	11.826	B
C-D	23			23			
C-A	333			333			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	219	572	0.383	219	0.6	10.513	B
B-AD	74	288	0.256	74	0.4	17.313	C
A-BCD	19	525	0.036	19	0.0	7.323	A
A-B	88			88			
A-C	479			479			
D-ABC	33	350	0.094	33	0.1	11.704	B
C-ABD	303	614	0.494	303	1.2	11.964	B
C-D	23			23			
C-A	333			333			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	179	612	0.292	180	0.4	8.600	A
B-AD	60	344	0.175	61	0.2	13.108	B
A-BCD	15	546	0.028	15	0.0	6.993	A
A-B	72			72			
A-C	391			391			
D-ABC	27	382	0.071	27	0.1	10.457	B
C-ABD	226	589	0.383	228	0.7	10.336	B
C-D	20			20			
C-A	293			293			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	150	638	0.235	150	0.3	7.608	A
B-AD	50	384	0.131	51	0.2	11.122	B
A-BCD	13	561	0.023	13	0.0	6.768	A
A-B	60			60			
A-C	327			327			
D-ABC	23	405	0.056	23	0.1	9.702	A
C-ABD	181	584	0.310	182	0.5	9.246	A
C-D	17			17			
C-A	252			252			

2023 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	3.23	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2023 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	579	100.000
B		✓	85	100.000
C		✓	580	100.000
D		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	A	B	C	D	
From	A	0	63	505	11
	B	6	0	73	6
	C	349	221	0	10
	D	8	11	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	A	B	C	D	
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.14	7.31	0.2	A
B-AD	0.05	13.89	0.1	B
A-BCD	0.02	6.99	0.0	A
A-B				
A-C				
D-ABC	0.08	11.07	0.1	B
C-ABD	0.49	12.20	1.2	B
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55	643	0.085	55	0.1	6.293	A
B-AD	9	378	0.024	9	0.0	10.053	B
A-BCD	8	572	0.014	8	0.0	6.571	A
A-B	47			47			
A-C	380			380			
D-ABC	21	420	0.050	21	0.1	9.294	A
C-ABD	175	574	0.304	173	0.5	9.208	A
C-D	7			7			
C-A	255			255			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	620	0.106	66	0.1	6.687	A
B-AD	11	337	0.032	11	0.0	11.375	B
A-BCD	10	560	0.018	10	0.0	6.742	A
A-B	57			57			
A-C	454			454			
D-ABC	25	397	0.063	25	0.1	9.964	A
C-ABD	217	575	0.377	216	0.7	10.322	B
C-D	8			8			
C-A	296			296			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	80	587	0.137	80	0.2	7.308	A
B-AD	13	281	0.047	13	0.1	13.859	B
A-BCD	12	542	0.022	12	0.0	6.993	A
A-B	69			69			
A-C	556			556			
D-ABC	31	366	0.084	31	0.1	11.060	B
C-ABD	291	596	0.489	290	1.1	12.060	B
C-D	10			10			
C-A	338			338			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	80	587	0.137	80	0.2	7.311	A
B-AD	13	280	0.047	13	0.1	13.894	B
A-BCD	12	542	0.022	12	0.0	6.994	A
A-B	69			69			
A-C	556			556			
D-ABC	31	366	0.084	31	0.1	11.071	B
C-ABD	291	596	0.489	291	1.2	12.200	B
C-D	10			10			
C-A	338			338			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	66	620	0.106	66	0.1	6.691	A
B-AD	11	336	0.032	11	0.0	11.412	B
A-BCD	10	560	0.018	10	0.0	6.744	A
A-B	57			57			
A-C	454			454			
D-ABC	25	397	0.063	25	0.1	9.978	A
C-ABD	217	575	0.377	219	0.7	10.478	B
C-D	8			8			
C-A	296			296			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	55	643	0.085	55	0.1	6.307	A
B-AD	9	377	0.024	9	0.0	10.089	B
A-BCD	8	572	0.014	8	0.0	6.575	A
A-B	47			47			
A-C	380			380			
D-ABC	21	420	0.050	21	0.1	9.309	A
C-ABD	175	574	0.304	175	0.5	9.336	A
C-D	7			7			
C-A	255			255			

2023 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	4.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2023 Base	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	546	100.000
B		✓	273	100.000
C		✓	617	100.000
D		✓	31	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	82	447	17
	B	16	0	205	52
	C	356	236	0	25
	D	6	19	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.40	10.91	0.7	B
B-AD	0.27	18.19	0.4	C
A-BCD	0.04	7.37	0.0	A
A-B				
A-C				
D-ABC	0.10	11.96	0.1	B
C-ABD	0.51	12.30	1.3	B
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	154	635	0.243	153	0.3	7.667	A
B-AD	51	380	0.135	51	0.2	11.249	B
A-BCD	13	559	0.023	13	0.0	6.790	A
A-B	62			62			
A-C	337			337			
D-ABC	23	401	0.058	23	0.1	9.804	A
C-ABD	188	585	0.321	186	0.5	9.256	A
C-D	18			18			
C-A	259			259			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	184	608	0.303	184	0.4	8.734	A
B-AD	61	338	0.181	61	0.2	13.374	B
A-BCD	15	543	0.028	15	0.0	7.021	A
A-B	74			74			
A-C	402			402			
D-ABC	28	377	0.074	28	0.1	10.605	B
C-ABD	235	591	0.398	234	0.7	10.378	B
C-D	21			21			
C-A	299			299			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	226	566	0.399	225	0.7	10.834	B
B-AD	75	279	0.268	74	0.4	18.029	C
A-BCD	19	522	0.036	19	0.0	7.365	A
A-B	90			90			
A-C	492			492			
D-ABC	34	344	0.099	34	0.1	11.942	B
C-ABD	319	622	0.513	316	1.3	12.133	B
C-D	24			24			
C-A	337			337			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	226	566	0.399	226	0.7	10.906	B
B-AD	75	279	0.269	75	0.4	18.189	C
A-BCD	19	522	0.036	19	0.0	7.369	A
A-B	90			90			
A-C	492			492			
D-ABC	34	344	0.099	34	0.1	11.959	B
C-ABD	319	622	0.513	318	1.3	12.297	B
C-D	24			24			
C-A	337			337			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	184	607	0.303	185	0.5	8.803	A
B-AD	61	337	0.182	62	0.2	13.504	B
A-BCD	15	543	0.028	15	0.0	7.030	A
A-B	74			74			
A-C	402			402			
D-ABC	28	377	0.074	28	0.1	10.625	B
C-ABD	235	591	0.398	237	0.8	10.561	B
C-D	21			21			
C-A	299			299			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	154	635	0.243	155	0.3	7.734	A
B-AD	51	378	0.135	51	0.2	11.350	B
A-BCD	13	558	0.023	13	0.0	6.794	A
A-B	62			62			
A-C	337			337			
D-ABC	23	401	0.058	23	0.1	9.824	A
C-ABD	188	585	0.321	189	0.5	9.397	A
C-D	18			18			
C-A	259			259			

2028 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	3.52	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2028 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	616	100.000
B		✓	92	100.000
C		✓	617	100.000
D		✓	31	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	67	537	12
	B	7	0	78	7
	C	371	235	0	11
	D	9	12	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.15	7.58	0.2	A
B-AD	0.06	15.14	0.1	C
A-BCD	0.02	7.10	0.0	A
A-B				
A-C				
D-ABC	0.10	11.55	0.1	B
C-ABD	0.53	12.99	1.4	B
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	635	0.092	58	0.1	6.423	A
B-AD	11	364	0.029	10	0.0	10.472	B
A-BCD	9	568	0.016	9	0.0	6.631	A
A-B	50			50			
A-C	404			404			
D-ABC	23	413	0.057	23	0.1	9.507	A
C-ABD	188	573	0.328	186	0.5	9.526	A
C-D	8			8			
C-A	269			269			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	70	610	0.115	70	0.1	6.861	A
B-AD	13	321	0.039	13	0.0	12.030	B
A-BCD	11	555	0.019	11	0.0	6.818	A
A-B	60			60			
A-C	483			483			
D-ABC	28	389	0.072	28	0.1	10.264	B
C-ABD	236	578	0.408	235	0.8	10.778	B
C-D	9			9			
C-A	310			310			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	86	575	0.149	86	0.2	7.576	A
B-AD	15	261	0.059	15	0.1	15.086	C
A-BCD	13	536	0.025	13	0.0	7.093	A
A-B	74			74			
A-C	591			591			
D-ABC	34	355	0.096	34	0.1	11.535	B
C-ABD	324	611	0.530	321	1.4	12.790	B
C-D	10			10			
C-A	345			345			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	86	575	0.149	86	0.2	7.579	A
B-AD	15	260	0.059	15	0.1	15.140	C
A-BCD	13	536	0.025	13	0.0	7.096	A
A-B	74			74			
A-C	591			591			
D-ABC	34	355	0.096	34	0.1	11.549	B
C-ABD	324	611	0.530	324	1.4	12.995	B
C-D	10			10			
C-A	345			345			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	70	610	0.115	70	0.1	6.872	A
B-AD	13	320	0.039	13	0.0	12.085	B
A-BCD	11	554	0.019	11	0.0	6.822	A
A-B	60			60			
A-C	483			483			
D-ABC	28	389	0.072	28	0.1	10.285	B
C-ABD	236	578	0.408	238	0.8	10.999	B
C-D	9			9			
C-A	310			310			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	59	635	0.092	59	0.1	6.434	A
B-AD	11	363	0.029	11	0.0	10.517	B
A-BCD	9	568	0.016	9	0.0	6.633	A
A-B	50			50			
A-C	404			404			
D-ABC	23	413	0.057	23	0.1	9.527	A
C-ABD	188	573	0.328	189	0.5	9.686	A
C-D	8			8			
C-A	269			269			

2028 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	5.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2028 Base	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	581	100.000
B		✓	290	100.000
C		✓	654	100.000
D		✓	34	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	87	475	19
	B	17	0	217	56
	C	378	250	0	26
	D	7	20	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.44	11.98	0.8	B
B-AD	0.31	20.84	0.5	C
A-BCD	0.04	7.51	0.0	A
A-B				
A-C				
D-ABC	0.11	12.49	0.1	B
C-ABD	0.55	13.08	1.6	B
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	163	626	0.261	162	0.4	7.958	A
B-AD	55	367	0.150	54	0.2	11.840	B
A-BCD	14	554	0.026	14	0.0	6.868	A
A-B	65			65			
A-C	358			358			
D-ABC	26	395	0.065	25	0.1	10.019	B
C-ABD	201	585	0.344	199	0.6	9.560	A
C-D	19			19			
C-A	272			272			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	195	596	0.327	195	0.5	9.216	A
B-AD	66	322	0.204	65	0.3	14.422	B
A-BCD	17	537	0.032	17	0.0	7.124	A
A-B	78			78			
A-C	427			427			
D-ABC	31	370	0.083	30	0.1	10.923	B
C-ABD	254	596	0.427	253	0.8	10.814	B
C-D	21			21			
C-A	312			312			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	239	549	0.435	238	0.8	11.864	B
B-AD	80	259	0.310	80	0.4	20.567	C
A-BCD	21	515	0.041	21	0.0	7.505	A
A-B	96			96			
A-C	523			523			
D-ABC	37	335	0.112	37	0.1	12.462	B
C-ABD	353	639	0.553	350	1.5	12.845	B
C-D	24			24			
C-A	343			343			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	239	548	0.436	239	0.8	11.977	B
B-AD	80	258	0.311	80	0.5	20.843	C
A-BCD	21	514	0.041	21	0.0	7.511	A
A-B	96			96			
A-C	523			523			
D-ABC	37	334	0.112	37	0.1	12.487	B
C-ABD	353	639	0.553	353	1.6	13.081	B
C-D	24			24			
C-A	343			343			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	195	596	0.328	196	0.5	9.308	A
B-AD	66	321	0.205	66	0.3	14.618	B
A-BCD	17	537	0.032	17	0.0	7.133	A
A-B	78			78			
A-C	427			427			
D-ABC	31	369	0.083	31	0.1	10.952	B
C-ABD	254	596	0.427	257	0.9	11.067	B
C-D	21			21			
C-A	312			312			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	163	626	0.261	164	0.4	8.037	A
B-AD	55	365	0.150	55	0.2	11.973	B
A-BCD	14	554	0.026	14	0.0	6.876	A
A-B	65			65			
A-C	358			358			
D-ABC	26	395	0.065	26	0.1	10.047	B
C-ABD	201	585	0.344	203	0.6	9.735	A
C-D	19			19			
C-A	272			272			

2023 Assessment, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	3.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D7	2023 Assessment	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	590	100.000
B		✓	89	100.000
C		✓	601	100.000
D		✓	28	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
From		A	B	C	D
	A	0	74	505	11
	B	7	0	76	6
	C	349	242	0	10
	D	8	11	9	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
From		A	B	C	D
	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.14	7.39	0.2	A
B-AD	0.05	14.50	0.1	B
A-BCD	0.02	7.00	0.0	A
A-B				
A-C				
D-ABC	0.08	11.13	0.1	B
C-ABD	0.54	13.15	1.4	B
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	57	642	0.089	57	0.1	6.332	A
B-AD	10	371	0.026	10	0.0	10.255	B
A-BCD	8	572	0.014	8	0.0	6.573	A
A-B	56			56			
A-C	380			380			
D-ABC	21	418	0.050	21	0.1	9.321	A
C-ABD	193	577	0.334	191	0.5	9.553	A
C-D	7			7			
C-A	252			252			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	618	0.110	68	0.1	6.737	A
B-AD	12	329	0.036	12	0.0	11.692	B
A-BCD	10	560	0.018	10	0.0	6.744	A
A-B	67			67			
A-C	454			454			
D-ABC	25	396	0.064	25	0.1	10.002	B
C-ABD	242	583	0.415	241	0.8	10.835	B
C-D	8			8			
C-A	290			290			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	84	585	0.143	84	0.2	7.388	A
B-AD	14	271	0.053	14	0.1	14.444	B
A-BCD	12	542	0.022	12	0.0	6.996	A
A-B	81			81			
A-C	556			556			
D-ABC	31	364	0.085	31	0.1	11.119	B
C-ABD	330	614	0.538	328	1.4	12.937	B
C-D	9			9			
C-A	322			322			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	84	585	0.143	84	0.2	7.392	A
B-AD	14	270	0.053	14	0.1	14.495	B
A-BCD	12	542	0.022	12	0.0	6.999	A
A-B	81			81			
A-C	556			556			
D-ABC	31	364	0.085	31	0.1	11.132	B
C-ABD	330	614	0.538	330	1.4	13.151	B
C-D	9			9			
C-A	322			322			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	68	618	0.111	68	0.1	6.747	A
B-AD	12	328	0.036	12	0.0	11.742	B
A-BCD	10	559	0.018	10	0.0	6.748	A
A-B	67			67			
A-C	454			454			
D-ABC	25	396	0.064	25	0.1	10.018	B
C-ABD	242	583	0.415	244	0.8	11.063	B
C-D	8			8			
C-A	290			290			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	57	642	0.089	57	0.1	6.345	A
B-AD	10	370	0.026	10	0.0	10.299	B
A-BCD	8	572	0.014	8	0.0	6.577	A
A-B	56			56			
A-C	380			380			
D-ABC	21	418	0.050	21	0.1	9.338	A
C-ABD	193	577	0.334	194	0.6	9.716	A
C-D	7			7			
C-A	252			252			

2023 Assessment, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	5.27	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D8	2023 Assessment	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	549	100.000
B		✓	291	100.000
C		✓	622	100.000
D		✓	31	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	85	447	17
	B	20	0	219	52
	C	356	241	0	25
	D	6	19	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.43	11.57	0.8	B
B-AD	0.29	18.99	0.4	C
A-BCD	0.04	7.38	0.0	A
A-B				
A-C				
D-ABC	0.10	12.02	0.1	B
C-ABD	0.52	12.52	1.4	B
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	165	634	0.260	163	0.4	7.863	A
B-AD	54	378	0.144	54	0.2	11.415	B
A-BCD	13	558	0.023	13	0.0	6.799	A
A-B	64			64			
A-C	337			337			
D-ABC	23	400	0.058	23	0.1	9.828	A
C-ABD	192	585	0.328	190	0.5	9.337	A
C-D	18			18			
C-A	258			258			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	197	605	0.325	196	0.5	9.051	A
B-AD	65	335	0.193	64	0.2	13.676	B
A-BCD	15	542	0.028	15	0.0	7.032	A
A-B	76			76			
A-C	402			402			
D-ABC	28	376	0.074	28	0.1	10.640	B
C-ABD	241	593	0.406	240	0.8	10.499	B
C-D	21			21			
C-A	297			297			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	241	562	0.429	240	0.8	11.476	B
B-AD	79	275	0.288	79	0.4	18.789	C
A-BCD	19	521	0.036	19	0.0	7.380	A
A-B	94			94			
A-C	492			492			
D-ABC	34	343	0.100	34	0.1	11.997	B
C-ABD	328	626	0.524	326	1.3	12.337	B
C-D	23			23			
C-A	333			333			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	241	561	0.429	241	0.8	11.571	B
B-AD	79	274	0.289	79	0.4	18.986	C
A-BCD	19	521	0.036	19	0.0	7.385	A
A-B	94			94			
A-C	492			492			
D-ABC	34	343	0.100	34	0.1	12.016	B
C-ABD	328	626	0.524	328	1.4	12.518	B
C-D	23			23			
C-A	333			333			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	197	605	0.326	198	0.5	9.136	A
B-AD	65	334	0.194	65	0.3	13.832	B
A-BCD	15	542	0.028	15	0.0	7.039	A
A-B	76			76			
A-C	402			402			
D-ABC	28	376	0.074	28	0.1	10.664	B
C-ABD	241	593	0.406	243	0.8	10.696	B
C-D	21			21			
C-A	297			297			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	165	633	0.260	165	0.4	7.938	A
B-AD	54	376	0.144	55	0.2	11.530	B
A-BCD	13	558	0.023	13	0.0	6.803	A
A-B	64			64			
A-C	337			337			
D-ABC	23	400	0.058	23	0.1	9.850	A
C-ABD	192	585	0.328	193	0.5	9.487	A
C-D	18			18			
C-A	258			258			

2028 Assessment, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	4.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D9	2028 Assessment	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	627	100.000
B		✓	96	100.000
C		✓	638	100.000
D		✓	31	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	78	537	12
	B	8	0	81	7
	C	371	256	0	11
	D	9	12	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.16	7.67	0.2	A
B-AD	0.07	15.86	0.1	C
A-BCD	0.02	7.10	0.0	A
A-B				
A-C				
D-ABC	0.10	11.62	0.1	B
C-ABD	0.58	14.13	1.8	B
C-D				
C-A				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61	634	0.096	61	0.1	6.463	A
B-AD	11	358	0.032	11	0.0	10.693	B
A-BCD	9	568	0.016	9	0.0	6.634	A
A-B	59			59			
A-C	404			404			
D-ABC	23	412	0.057	23	0.1	9.536	A
C-ABD	207	577	0.358	204	0.6	9.889	A
C-D	8			8			
C-A	266			266			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	73	609	0.120	73	0.1	6.917	A
B-AD	13	313	0.043	13	0.0	12.387	B
A-BCD	11	554	0.019	11	0.0	6.821	A
A-B	70			70			
A-C	483			483			
D-ABC	28	387	0.072	28	0.1	10.305	B
C-ABD	262	588	0.446	261	0.9	11.333	B
C-D	9			9			
C-A	302			302			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	89	573	0.156	89	0.2	7.659	A
B-AD	17	251	0.066	16	0.1	15.785	C
A-BCD	13	536	0.025	13	0.0	7.097	A
A-B	86			86			
A-C	591			591			
D-ABC	34	354	0.097	34	0.1	11.601	B
C-ABD	367	632	0.581	364	1.7	13.807	B
C-D	10			10			
C-A	326			326			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	89	573	0.156	89	0.2	7.667	A
B-AD	17	250	0.066	17	0.1	15.863	C
A-BCD	13	535	0.025	13	0.0	7.101	A
A-B	86			86			
A-C	591			591			
D-ABC	34	353	0.097	34	0.1	11.618	B
C-ABD	367	632	0.581	367	1.8	14.131	B
C-D	10			10			
C-A	326			326			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	73	608	0.120	73	0.1	6.929	A
B-AD	13	311	0.043	14	0.0	12.460	B
A-BCD	11	554	0.019	11	0.0	6.829	A
A-B	70			70			
A-C	483			483			
D-ABC	28	387	0.072	28	0.1	10.327	B
C-ABD	262	587	0.446	265	1.0	11.658	B
C-D	9			9			
C-A	302			302			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	61	634	0.096	61	0.1	6.475	A
B-AD	11	356	0.032	11	0.0	10.747	B
A-BCD	9	568	0.016	9	0.0	6.636	A
A-B	59			59			
A-C	404			404			
D-ABC	23	412	0.057	23	0.1	9.556	A
C-ABD	207	577	0.358	208	0.6	10.094	B
C-D	8			8			
C-A	266			266			

2028 Assessment, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way	5.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D10	2028 Assessment	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	584	100.000
B		✓	308	100.000
C		✓	659	100.000
D		✓	34	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A	B	C	D
From	A	0	90	475	19
	B	21	0	231	56
	C	378	255	0	26
	D	7	20	7	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A	B	C	D
From	A	3	3	3	3
	B	3	3	3	3
	C	3	3	3	3
	D	3	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.47	12.82	0.9	B
B-AD	0.33	21.96	0.5	C
A-BCD	0.04	7.53	0.0	A
A-B				
A-C				
D-ABC	0.11	12.55	0.1	B
C-ABD	0.56	13.34	1.7	B
C-D				
C-A				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	174	625	0.278	172	0.4	8.171	A
B-AD	58	365	0.159	57	0.2	12.028	B
A-BCD	14	553	0.026	14	0.0	6.877	A
A-B	68			68			
A-C	358			358			
D-ABC	26	394	0.065	25	0.1	10.045	B
C-ABD	206	586	0.351	204	0.6	9.645	A
C-D	19			19			
C-A	271			271			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	208	594	0.350	207	0.5	9.572	A
B-AD	69	319	0.217	69	0.3	14.784	B
A-BCD	17	537	0.032	17	0.0	7.136	A
A-B	81			81			
A-C	427			427			
D-ABC	31	369	0.083	30	0.1	10.961	B
C-ABD	261	598	0.436	260	0.9	10.945	B
C-D	21			21			
C-A	310			310			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	254	544	0.467	253	0.9	12.665	B
B-AD	85	255	0.333	84	0.5	21.611	C
A-BCD	21	514	0.041	21	0.0	7.521	A
A-B	99			99			
A-C	523			523			
D-ABC	37	333	0.112	37	0.1	12.523	B
C-ABD	364	644	0.565	361	1.6	13.078	B
C-D	23			23			
C-A	339			339			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	254	543	0.468	254	0.9	12.818	B
B-AD	85	254	0.334	85	0.5	21.955	C
A-BCD	21	513	0.041	21	0.0	7.528	A
A-B	99			99			
A-C	523			523			
D-ABC	37	333	0.112	37	0.1	12.550	B
C-ABD	364	644	0.565	363	1.7	13.344	B
C-D	23			23			
C-A	339			339			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	208	593	0.350	209	0.6	9.691	A
B-AD	69	318	0.218	70	0.3	15.017	C
A-BCD	17	536	0.032	17	0.0	7.146	A
A-B	81			81			
A-C	427			427			
D-ABC	31	368	0.083	31	0.1	10.989	B
C-ABD	261	598	0.436	264	0.9	11.224	B
C-D	21			21			
C-A	310			310			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	174	624	0.279	175	0.4	8.264	A
B-AD	58	363	0.160	58	0.2	12.172	B
A-BCD	14	553	0.026	14	0.0	6.888	A
A-B	68			68			
A-C	358			358			
D-ABC	26	394	0.065	26	0.1	10.071	B
C-ABD	206	586	0.352	207	0.6	9.831	A
C-D	19			19			
C-A	271			271			

Appendix U – Site Access PICADY Output

Junctions 9							
PICADY 9 - Priority Intersection Module							
Version: 9.0.2.5947 © Copyright TRL Limited, 2017							
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk							
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution							

Filename: Site Access.j9

Path: \\sweco.se\gb\LDS01\Project\6535\65204495_19-21_Elizabeth_Street\000\04 Deliverables

Management\Analysis\Junction Models

Report generation date: 02/12/2021 14:04:12

- »Background, AM
- »Background, PM
- »2023 Base, AM
- »2023 Base, PM
- »2028 Base, AM
- »2028 Base, PM
- »2023 Assessment, AM
- »2023 Assessment, PM
- »2028 Assessment, AM
- »2028 Assessment, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Background								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
2023 Base								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
2028 Base								
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
2023 Assessment								
Stream B-AC	0.0	7.15	0.02	A	0.1	8.19	0.07	A
Stream C-AB	0.1	5.05	0.07	A	0.0	4.92	0.02	A
2028 Assessment								
Stream B-AC	0.0	7.20	0.02	A	0.1	8.30	0.08	A
Stream C-AB	0.1	5.00	0.07	A	0.0	4.87	0.02	A

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

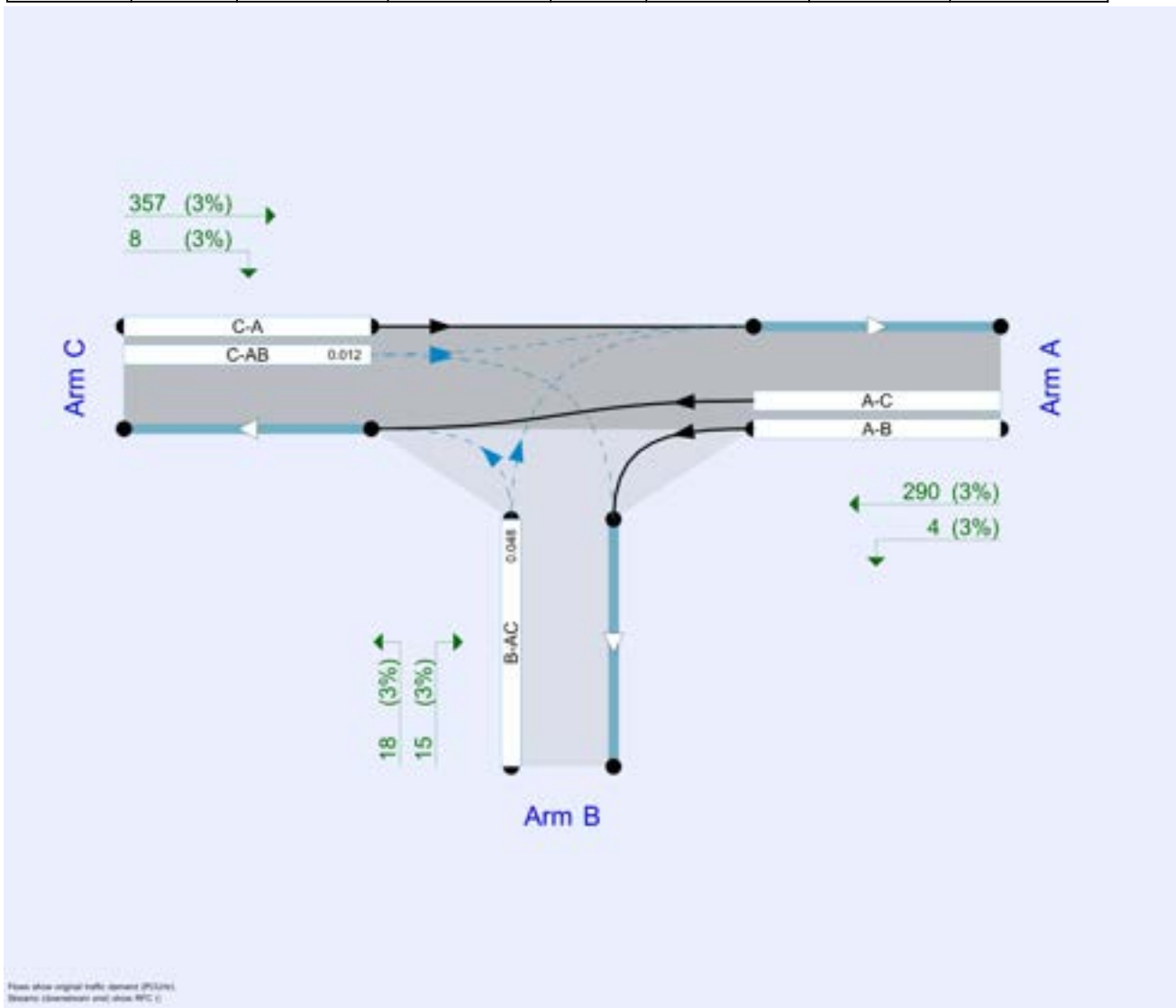
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	02/12/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SWECO\GBDEPS
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	Background	AM	ONE HOUR	08:00	09:30	15
D2	Background	PM	ONE HOUR	17:00	18:30	15
D3	2023 Base	AM	ONE HOUR	08:00	09:30	15
D4	2023 Base	PM	ONE HOUR	17:00	18:30	15
D5	2028 Base	AM	ONE HOUR	08:00	09:30	15
D6	2028 Base	PM	ONE HOUR	17:00	18:30	15
D7	2023 Assessment	AM	ONE HOUR	08:00	09:30	15
D8	2023 Assessment	PM	ONE HOUR	17:00	18:30	15
D9	2028 Assessment	AM	ONE HOUR	08:00	09:30	15
D10	2028 Assessment	PM	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

Background, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Elizabeth Street (E)		Major
B	Site Access		Minor
C	Elizabeth Street (W)		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	7.60			116.0	✓	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	3.40	36	33

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	526	0.089	0.225	0.142	0.322
1	B-C	671	0.096	0.242	-	-
1	C-B	641	0.231	0.231	-	-

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	Background	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	83	100.000
B		✓	0	100.000
C		✓	287	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	83
	B	0	0	0
	C	287	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	555	0.000	0	0.0	0.000	A
C-AB	0	627	0.000	0	0.0	0.000	A
C-A	216			216			
A-B	0			0			
A-C	62			62			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	548	0.000	0	0.0	0.000	A
C-AB	0	624	0.000	0	0.0	0.000	A
C-A	258			258			
A-B	0			0			
A-C	75			75			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	538	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	316			316			
A-B	0			0			
A-C	91			91			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	538	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	316			316			
A-B	0			0			
A-C	91			91			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	548	0.000	0	0.0	0.000	A
C-AB	0	624	0.000	0	0.0	0.000	A
C-A	258			258			
A-B	0			0			
A-C	75			75			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	555	0.000	0	0.0	0.000	A
C-AB	0	627	0.000	0	0.0	0.000	A
C-A	216			216			
A-B	0			0			
A-C	62			62			

Background, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	Background	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	266	100.000
B		✓	0	100.000
C		✓	327	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	266
	B	0	0	0
	C	327	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	519	0.000	0	0.0	0.000	A
C-AB	0	595	0.000	0	0.0	0.000	A
C-A	246			246			
A-B	0			0			
A-C	200			200			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	506	0.000	0	0.0	0.000	A
C-AB	0	586	0.000	0	0.0	0.000	A
C-A	294			294			
A-B	0			0			
A-C	239			239			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	486	0.000	0	0.0	0.000	A
C-AB	0	573	0.000	0	0.0	0.000	A
C-A	360			360			
A-B	0			0			
A-C	293			293			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	486	0.000	0	0.0	0.000	A
C-AB	0	573	0.000	0	0.0	0.000	A
C-A	360			360			
A-B	0			0			
A-C	293			293			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	506	0.000	0	0.0	0.000	A
C-AB	0	586	0.000	0	0.0	0.000	A
C-A	294			294			
A-B	0			0			
A-C	239			239			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	519	0.000	0	0.0	0.000	A
C-AB	0	595	0.000	0	0.0	0.000	A
C-A	246			246			
A-B	0			0			
A-C	200			200			

2023 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2023 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	85	100.000
B		✓	0	100.000
C		✓	295	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	85
	B	0	0	0
	C	295	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	554	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	222			222			
A-B	0			0			
A-C	64			64			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	547	0.000	0	0.0	0.000	A
C-AB	0	623	0.000	0	0.0	0.000	A
C-A	265			265			
A-B	0			0			
A-C	76			76			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	537	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	325			325			
A-B	0			0			
A-C	94			94			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	537	0.000	0	0.0	0.000	A
C-AB	0	620	0.000	0	0.0	0.000	A
C-A	325			325			
A-B	0			0			
A-C	94			94			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	547	0.000	0	0.0	0.000	A
C-AB	0	623	0.000	0	0.0	0.000	A
C-A	265			265			
A-B	0			0			
A-C	76			76			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	554	0.000	0	0.0	0.000	A
C-AB	0	626	0.000	0	0.0	0.000	A
C-A	222			222			
A-B	0			0			
A-C	64			64			

2023 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2023 Base	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	274	100.000
B		✓	0	100.000
C		✓	336	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	274
	B	0	0	0
	C	336	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	517	0.000	0	0.0	0.000	A
C-AB	0	593	0.000	0	0.0	0.000	A
C-A	253			253			
A-B	0			0			
A-C	206			206			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	503	0.000	0	0.0	0.000	A
C-AB	0	584	0.000	0	0.0	0.000	A
C-A	302			302			
A-B	0			0			
A-C	246			246			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	483	0.000	0	0.0	0.000	A
C-AB	0	571	0.000	0	0.0	0.000	A
C-A	370			370			
A-B	0			0			
A-C	302			302			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	483	0.000	0	0.0	0.000	A
C-AB	0	571	0.000	0	0.0	0.000	A
C-A	370			370			
A-B	0			0			
A-C	302			302			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	503	0.000	0	0.0	0.000	A
C-AB	0	584	0.000	0	0.0	0.000	A
C-A	302			302			
A-B	0			0			
A-C	246			246			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	517	0.000	0	0.0	0.000	A
C-AB	0	593	0.000	0	0.0	0.000	A
C-A	253			253			
A-B	0			0			
A-C	206			206			

2028 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2028 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	91	100.000
B		✓	0	100.000
C		✓	314	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	91
	B	0	0	0
	C	314	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	552	0.000	0	0.0	0.000	A
C-AB	0	625	0.000	0	0.0	0.000	A
C-A	236			236			
A-B	0			0			
A-C	69			69			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	544	0.000	0	0.0	0.000	A
C-AB	0	622	0.000	0	0.0	0.000	A
C-A	282			282			
A-B	0			0			
A-C	82			82			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	533	0.000	0	0.0	0.000	A
C-AB	0	618	0.000	0	0.0	0.000	A
C-A	346			346			
A-B	0			0			
A-C	100			100			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	533	0.000	0	0.0	0.000	A
C-AB	0	618	0.000	0	0.0	0.000	A
C-A	346			346			
A-B	0			0			
A-C	100			100			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	544	0.000	0	0.0	0.000	A
C-AB	0	622	0.000	0	0.0	0.000	A
C-A	282			282			
A-B	0			0			
A-C	82			82			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	552	0.000	0	0.0	0.000	A
C-AB	0	625	0.000	0	0.0	0.000	A
C-A	236			236			
A-B	0			0			
A-C	69			69			

2028 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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	2028 Base	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	290	100.000
B		✓	0	100.000
C		✓	357	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	290
	B	0	0	0
	C	357	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	513	0.000	0	0.0	0.000	A
C-AB	0	591	0.000	0	0.0	0.000	A
C-A	269			269			
A-B	0			0			
A-C	218			218			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	498	0.000	0	0.0	0.000	A
C-AB	0	581	0.000	0	0.0	0.000	A
C-A	321			321			
A-B	0			0			
A-C	261			261			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	477	0.000	0	0.0	0.000	A
C-AB	0	567	0.000	0	0.0	0.000	A
C-A	393			393			
A-B	0			0			
A-C	319			319			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	477	0.000	0	0.0	0.000	A
C-AB	0	567	0.000	0	0.0	0.000	A
C-A	393			393			
A-B	0			0			
A-C	319			319			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	498	0.000	0	0.0	0.000	A
C-AB	0	581	0.000	0	0.0	0.000	A
C-A	321			321			
A-B	0			0			
A-C	261			261			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	0	513	0.000	0	0.0	0.000	A
C-AB	0	591	0.000	0	0.0	0.000	A
C-A	269			269			
A-B	0			0			
A-C	218			218			

2023 Assessment, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.70	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D7	2023 Assessment	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	102	100.000
B		✓	8	100.000
C		✓	327	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	17	85
	B	4	0	4
	C	295	32	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	7.15	0.0	A
C-AB	0.07	5.05	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	6	548	0.011	6	0.0	6.846	A
C-AB	34	769	0.044	34	0.1	5.044	A
C-A	212			212			
A-B	13			13			
A-C	64			64			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	539	0.013	7	0.0	6.969	A
C-AB	43	794	0.055	43	0.1	4.942	A
C-A	251			251			
A-B	15			15			
A-C	76			76			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	527	0.017	9	0.0	7.149	A
C-AB	58	829	0.070	58	0.1	4.811	A
C-A	302			302			
A-B	19			19			
A-C	94			94			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	527	0.017	9	0.0	7.149	A
C-AB	58	829	0.070	58	0.1	4.811	A
C-A	302			302			
A-B	19			19			
A-C	94			94			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	539	0.013	7	0.0	6.970	A
C-AB	43	794	0.055	43	0.1	4.945	A
C-A	251			251			
A-B	15			15			
A-C	76			76			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	6	547	0.011	6	0.0	6.847	A
C-AB	34	769	0.044	34	0.1	5.050	A
C-A	212			212			
A-B	13			13			
A-C	64			64			

2023 Assessment, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.51	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D8	2023 Assessment	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	278	100.000
B		✓	33	100.000
C		✓	344	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	4	274
	B	15	0	18
	C	336	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.07	8.19	0.1	A
C-AB	0.02	4.92	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	524	0.047	25	0.1	7.425	A
C-AB	9	762	0.012	9	0.0	4.921	A
C-A	250			250			
A-B	3			3			
A-C	206			206			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	30	509	0.058	30	0.1	7.728	A
C-AB	12	788	0.015	12	0.0	4.778	A
C-A	298			298			
A-B	4			4			
A-C	246			246			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	36	489	0.074	36	0.1	8.183	A
C-AB	16	823	0.019	16	0.0	4.593	A
C-A	363			363			
A-B	4			4			
A-C	302			302			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	36	489	0.074	36	0.1	8.185	A
C-AB	16	823	0.019	16	0.0	4.595	A
C-A	363			363			
A-B	4			4			
A-C	302			302			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	30	509	0.058	30	0.1	7.733	A
C-AB	12	788	0.015	12	0.0	4.779	A
C-A	298			298			
A-B	4			4			
A-C	246			246			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	524	0.047	25	0.1	7.436	A
C-AB	9	762	0.012	9	0.0	4.921	A
C-A	250			250			
A-B	3			3			
A-C	206			206			

2028 Assessment, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.67	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D9	2028 Assessment	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	108	100.000
B		✓	8	100.000
C		✓	346	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	17	91
	B	4	0	4
	C	314	32	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.02	7.20	0.0	A
C-AB	0.07	5.00	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	6	545	0.011	6	0.0	6.877	A
C-AB	35	777	0.045	34	0.1	4.992	A
C-A	226			226			
A-B	13			13			
A-C	69			69			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	536	0.013	7	0.0	7.008	A
C-AB	44	804	0.055	44	0.1	4.883	A
C-A	267			267			
A-B	15			15			
A-C	82			82			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	524	0.017	9	0.0	7.199	A
C-AB	60	842	0.071	60	0.1	4.745	A
C-A	321			321			
A-B	19			19			
A-C	100			100			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	9	524	0.017	9	0.0	7.200	A
C-AB	60	842	0.071	60	0.1	4.745	A
C-A	321			321			
A-B	19			19			
A-C	100			100			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	7	536	0.013	7	0.0	7.009	A
C-AB	44	804	0.055	45	0.1	4.886	A
C-A	267			267			
A-B	15			15			
A-C	82			82			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	6	545	0.011	6	0.0	6.881	A
C-AB	35	777	0.045	35	0.1	4.998	A
C-A	226			226			
A-B	13			13			
A-C	69			69			

2028 Assessment, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.49	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

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)
D10	2028 Assessment	PM	ONE HOUR	17:00	18:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	294	100.000
B		✓	33	100.000
C		✓	365	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A	B	C
	A	0	4	290
	B	15	0	18
	C	357	8	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		A	B	C
	A	3	3	3
	B	3	3	3
	C	3	3	3

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	8.30	0.1	A
C-AB	0.02	4.87	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	519	0.048	25	0.1	7.490	A
C-AB	9	771	0.012	9	0.0	4.869	A
C-A	266			266			
A-B	3			3			
A-C	218			218			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	30	504	0.059	30	0.1	7.812	A
C-AB	12	798	0.015	12	0.0	4.720	A
C-A	316			316			
A-B	4			4			
A-C	261			261			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	36	483	0.075	36	0.1	8.302	A
C-AB	17	836	0.020	17	0.0	4.526	A
C-A	385			385			
A-B	4			4			
A-C	319			319			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	36	483	0.075	36	0.1	8.303	A
C-AB	17	836	0.020	17	0.0	4.528	A
C-A	385			385			
A-B	4			4			
A-C	319			319			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	30	504	0.059	30	0.1	7.816	A
C-AB	12	798	0.015	12	0.0	4.720	A
C-A	316			316			
A-B	4			4			
A-C	261			261			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-AC	25	519	0.048	25	0.1	7.498	A
C-AB	9	771	0.012	9	0.0	4.871	A
C-A	266			266			
A-B	3			3			
A-C	218			218			